BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF SOUTHWESTERN)
PUBLIC SERVICE COMPANY'S)
APPLICATION REQUESTING:)
(1) ISSUANCE OF A CERTIFICATE OF)
PUBLIC CONVENIENCE AND NECESSITY)
AUTHORIZING CONSTRUCTION AND)
OPERATION OF WIND GENERATION AND)
ASSOCIATED FACILITIES, AND RELATED) CASE NO. 17-00044-UT
RATEMAKING PRINCIPALS INCLUDING)
AN ALLOWANCE FOR FUNDS USED)
DURING CONSTRUCTION FOR THE WIND)
GENERATION AND ASSOCIATED)
FACILITIES; AND (2) APPROVAL OF A)
PURCHASED POWER AGREEMENT TO)
OBTAIN WIND-GENERATED ENERGY,)
)
SOUTHWESTERN PUBLIC SERVICE)
COMPANY,)
)
APPLICANT.)
)

DIRECT TESTIMONY

of

RILEY HILL

on behalf of

SOUTHWESTERN PUBLIC SERVICE COMPANY

TABLE OF CONTENTS

GLOS	SARY OF ACRONYMS AND DEFINED TERMS	iii
LIST (OF ATTACHMENTS	v
I.	WITNESS IDENTIFICATION AND QUALIFICATIONS	1
II.	ASSIGNMENT AND SUMMARY OF TESTIMONY	4
III.	SPS PROJECT DESCRIPTIONS AND SELECTION	9
IV.	CONSTRUCTION AND OTHER SPECIFICS OF THE SPS PROJECTS	22
	A. THE WIND FARM CONSTRUCTION PROCESS	22
	B. MASTER SERVICE AGREEMENT	32
	C. PURCHASE AND SALE AGREEMENTS	34
	D. TURBINE SUPPLY AGREEMENTS	36
	E. SERVICE MAINTENANCE AND WARRANTY AGREEMENTS	37
	F. BALANCE OF PLANT CONTRACTS	37
V.	DESIGN AND CONSTRUCTION COST ESTIMATES	39
VI.	CONSTRUCTION SCHEDULES FOR THE SPS PROJECTS	46
VII.	RISK MANAGEMENT AND COST CONTROLS	52
	A. MATERIAL RISKS AND RISK MANAGEMENT	52
	B. COST CONTROLS AND REPORTING	59
VIII.	SITING, PERMITTING, LAND RIGHTS ACQUISITION FOR THE	
	SAGAMORE AND HALE WIND PROJECTS	
IX.	COST COMPARISON	69
X.	GEN TIE COSTS	74
VERIE	FICATION	77

GLOSSARY OF ACRONYMS AND DEFINED TERMS

Acronym/Defined Term Meaning

BOP Balance of Plant

CAR Cost Analysis Report

Gen Tie line Generation Tie line

GIA Generation Interconnection Agreement

GWh Gigawatt hour

Invenergy, LLC

IRS Internal Revenue Service

KG&E Kansas Gas & Electric

kV Kilovolt

kW Kilowatt

MET Meteorological

MSA Master Supply Agreement

MW Megawatt

NCF Net Capacity Factor

NextEra Energy Resources, LLC

NMPRC New Mexico Public Regulation

Commission

NSPM Northern States Power Company, a

Minnesota corporation

OAA Omnibus Appropriations Act

Acronym/Defined Term Meaning

O&M Operations and Maintenance

POD Plan of the Day

SPS Projects 522 MW Sagamore Wind Project and

478 MW Hale Wind Project

PSA Purchase and Sale Agreements

PSCo Public Service Company of Colorado, a

Colorado corporation

PTC Production Tax Credits

RFP Request for Proposal

SMWA Service Maintenance and Warranty

Agreement

SPP Southwest Power Pool, Inc.

SPS Southwestern Public Service Company,

a New Mexico corporation

TSA Turbine Supply Agreement

Vestas Vestas-American Wind Technology,

Inc.

WTG Wind Turbine Generator

Xcel Energy Inc.

XES Xcel Energy Services, Inc.

LIST OF ATTACHMENTS

Attachment	<u>Description</u>
RH-1	Map of the Sagamore Wind Project (non-native format)
RH-2	Map of the Hale Wind Project (non-native format)
RH-3	Photos of Construction Components (non-native format)
RH-4 and RH-4(CONF)	Purchase and Sale Agreement for Sagamore Wind Project (non-native format)
RH-5 and RH-5(CONF)	Purchase and Sale Agreement for Hale Wind Project (non-native format)
RH-6(CONF)	Sagamore Wind Project Construction Costs (non-native format)
RH-7(CONF)	Hale Wind Project Construction Costs (non-native format)
RH-8	Lawrence Berkley National Laboratory Market Report (non-native format)

1		I. <u>WITNESS IDENTIFICATION AND QUALIFICATIONS</u>
2	Q.	Please state your name, business address, and job title.
3	A.	My name is Riley Hill. My business address is 1800 Larimer Street, Suite 1300,
4		Denver, Colorado 80202.
5	Q.	On whose behalf are you testifying in this proceeding?
6	A.	I am filing testimony on behalf of Southwestern Public Service Company, a New
7		Mexico corporation ("SPS") and wholly-owned electric utility subsidiary of Xcel
8		Energy Inc. ("Xcel Energy").
9	Q.	By whom are you employed and in what position?
10	A.	I am employed by Xcel Energy Services Inc. ("XES"), the service company
11		subsidiary of Xcel Energy, as Senior Vice President, Energy Supply.
12	Q.	Please summarize your educational and professional background.
13	A.	I graduated from Wichita State University in 1989 with a Bachelor of Science
14		Degree in Electrical Engineering. I graduated summa cum laude with university
15		honors.
16		I began my employment in the utility industry with Kansas Gas & Electric
17		("KG&E"), which later became Westar Energy in Wichita, Kansas in 1980 as a
18		laborer in the line department. While at KG&E I served in many operations and

support positions up to and including my last position of Senior Director of Substation engineering, construction and operations. Additionally, while at KG&E, I returned to school and completed my Bachelor of Science Degree in Electrical Engineering in 1989.

In 2004, I left Westar Energy and joined Xcel Energy to serve as the Director of the Denver Metro West gas and electric distribution operations for Public Service Company of Colorado, a Colorado corporation ("PSCo").

Additionally while at PSCo, I served as the Vice President of Construction,

Operations and Maintenance for the gas and electric distribution and gas

transmission organizations. Finally, while at PSCo, I served as the Vice President

of Customer and Community Relations. In 2009, I moved to Texas to serve as the

12 President and CEO of SPS.

1

2

3

4

5

6

7

8

9

10

11

13

14

15

16

In 2014, I moved into my current role of Senior Vice President of Energy Supply based in Denver, Colorado. In my current role, I am responsible for the design, construction and operations of all non-nuclear generating facilities that are used to serve customers in all of Xcel Energy's service territory in eight states.

1 Q. Have you testified before any regulatory authorities?

- 2 A. Yes, I provided written testimony in support of PSCo's application for approval
- 3 of its Rush Creek Wind Project before the Colorado Public Utilities Commission
- 4 in Proceeding No. 16A-00117E.

II. ASSIGNMENT AND SUMMARY OF TESTIMONY

1

2	Q.	What are your assignments in this proceeding?
3	A.	The purpose of my testimony is to provide a detailed overview of the 522
4		megawatts ("MW") Sagamore Wind Project and the 478 MW Hale Wind Project
5		(collectively sometimes referred to as the "SPS Projects") that SPS is proposing to
6		acquire and construct in this proceeding. In my testimony, I will describe:
7 8		• The selection of the Sagamore and Hale Wind Projects sites and key attributes of the SPS Projects;
9 10 11 12 13		 The acquisition of the wind development rights from Invenergy, LLC ("Invenergy") and NextEra Energy Resources, LLC ("NextEra") for the Sagamore Wind Project and the Hale Wind Project, respectively, through Purchase and Sale Agreements (individually the agreements are referred to as a "PSA");
14 15 16 17		• The major material and construction contracts SPS ¹ has or expects to enter into for construction of the Sagamore and Hale Wind Projects, such as the Master Supply Agreement ("MSA") and Balance of Plant ("BOP") contract;
18		• The design and construction cost estimates for the SPS Projects;
19		• The construction schedules for the SPS Projects;
20 21 22		 The construction management techniques and oversight process SPS is employing to ensure the SPS Projects are developed on time and on budget;

 $^{^{1}}$ For purposes of this testimony, references to SPS will include XES and SPS unless the terms are separately identified.

1 2		 A comparison of the construction costs of the SPS Projects to the marke for similar wind projects; and
3 4		 The Generation Tie lines ("Gen Tie lines") needed to connect the SPS Projects to the interconnection tie breaker on the transmission grid; and
5	Q.	Please summarize your testimony.
6	A.	My testimony demonstrates that in an effort to take advantage of the extension of
7		federal Production Tax Credits ("PTC"), SPS diligently investigated whether i
8		could add wind generation for the SPS region, which in turn would provide
9		significant fuel cost savings for customers. After considering possible wind
10		generation acquisition options that would qualify for the PTC benefits and after
11		performing due diligence, SPS selected the Sagamore and Hale Wind Projects
12		Both SPS Projects are to be located at high-quality, viable sites for wind
13		generation development.
14		SPS reasonably estimated construction costs for the SPS Projects based or
15		its experience with the development, construction, and operation of over 850 MW
16		of utility-owned wind generation in other service territories. My testimony
17		presents the construction estimates for the SPS Projects and reviews the

within the construction deadline(s).

experience Xcel Energy has of constructing wind projects within budget(s) and

18

19

SPS sequenced the contracts to ensure qualification for PTC benefits and to acquire the wind development rights from Invenergy and NextEra for the Sagamore and the Hale Wind Projects, respectively. The agreements that currently exist are: (1) a MSA between an Xcel Energy subsidiary, Capital Services, LLC and Vestas-American Wind Technology Inc. ("Vestas") for purchase of wind turbines needed to qualify for PTC benefits;² (2) PSAs for wind development rights for each of the SPS Projects; and (3) a Sale of Components Agreement between Capital Services, LLC and SPS so that SPS can obtain the turbines from Capital Services, LLC.

Prospectively, SPS will also enter into: (1) Turbine Supply Agreements ("TSA") for the additional wind turbines to complete the SPS Projects; (2) BOP contracts for the installation of the wind turbines and construction of the site infrastructure; (3) Service Maintenance and Warranty Agreements ("SMWA") for Vestas to perform warranty work and three years of scheduled maintenance on the wind turbine generators after final commissioning; and (4) smaller contracts to be

 $^{^2}$ SPS witness Evan D. Evans addresses the requirements to qualify for 100% PTC benefits, including what actions were necessary meet the safe harbor requirements under the Omnibus Appropriations Act ("OAA").

entered into including, but not limited to, contracts for long lead time substation transformers, engineering services, and geotechnical investigations.

Under the PSAs, Invenergy and NextEra are required to deliver construction ready sites. Included in these obligations are responsibility for securing local, state and federal permits, and any other necessary approvals or clearances for completing the development of the wind farms. Invenergy and NextEra are also responsible for obtaining real property interests such as leases, purchase options, or fee title necessary to support wind farm development.

There are material risks associated with the construction of the SPS Projects. However, SPS has developed management techniques and oversight processes through experience with other projects, as well as interactions with industry stakeholders and contractors to help mitigate these risks and ensure the SPS Projects can be built at reasonable costs and in a timely fashion. Similarly, the construction schedules for the SPS Projects allow for potential risks to be addressed while still meeting the deadlines for 100% of PTC benefits.

The costs of the Sagamore and Hale Wind Projects compare favorably to: (1) other Xcel Energy wind projects; and (2) installed cost of wind power projects in the U.S. as reported by the U.S. Department of Energy, in the August 2016

1 Lawrence Berkley National Laboratory Market Report, provided in Attachment 2 RH-8. In particular, at \$1,581 and \$1,537 per kilowatt ("kW"), the costs of the Sagamore and Hale Wind Projects, respectively, are lower than all but one of the 3 other Xcel Energy wind projects and are lower than the capacity-weighted 4 5 average installed project cost for wind power projects in the U.S. in 2015 of 6 \$1,690/kW. 7 Finally, Gen Tie lines are needed to connect the SPS Projects to the transmission grid. For the Sagamore Wind Project, SPS estimated the Gen Tie 8 9 Line to be between 4 and 5 miles in length and cost approximately \$3.5 million. 10 For the Hale Wind Project, SPS estimated the Gen Tie Line to be between 12 and 11 15 miles in length and cost approximately \$9 million. These costs are included in 12 the SPS Projects' total budgets. 13 Q. Were Attachments RH-1, RH-2, RH-3, RH-6(CONF), and RH-7(CONF) 14 prepared by you or under your direct supervision and control? 15 A. Yes. 16 Are Attachments RH-4, RH-4(CONF), RH-5, RH-5(CONF), and RH-8 true Q. 17 and correct copies of the documents you have described in your testimony? 18 A. Yes.

1 III. SPS PROJECT DESCRIPTIONS AND SELECTION 2 0. What topic do you discuss in this section of your testimony? 3 A. In this section of my testimony, I provide descriptions of the Sagamore and Hale 4 Wind Projects, with a particular focus on why, from an engineering perspective, 5 SPS selected these two projects for development and ownership. 6 Q. Why, from an engineering perspective, were the Sagamore and Hale Wind 7 **Projects selected?** 8 A. After evaluating several options the Sagamore and Hale Wind Projects were 9 selected for several key reasons. 10 First, each project was advantageously located near substations that would 11 allow interconnection at a sufficient injection point on the Southwest Power Pool 12 ("SPP") transmission grid at a reasonable cost. In particular, the Hale Wind Project was located approximately 12 to 15 miles from the TUCO substation and 13 the Sagamore Wind Project was located approximately 4 to 5 miles from the 14 15 Crossroads substation. 16 Second, the topography where the SPS Projects are located makes the sites 17 well-suited for new large scale wind development. In addition, the SPS Projects' 18 proximity to the other successful wind farms operating in this area: (1) supported

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

that the SPS Projects' ability to successfully harness the strong wind energy resource that exists in the areas; and (2) provided SPS with experience with wind resources in this region, including access to extensive data and forecasting capabilities. Third, the selection of the Sagamore and Hale Wind Project sites allowed SPS to partner with two industry leaders and well-established wind power generation companies - Invenergy for the Sagamore Wind Project and NextEra for the Hale Wind Project. Q. Please provide a description of the Sagamore Wind Project. The Sagamore Wind Project will be a 522 MW facility located in Roosevelt A. County, New Mexico. To develop the Sagamore Wind Project, SPS will install a combination of Vestas model 2.0 MW V110 and V116 wind turbines to produce 522 MW. Site infrastructure will include access roads, foundations, electrical cable collection systems, and collection system substations. Pending the outcome of the SPP's study, which is discussed in the direct testimony of William A. Grant, generation output is expected to tie into the SPP transmission system by installing a Gen Tie line from the Sagamore Wind Project

collector station to the interconnection tie breaker at the Crossroads substation.

1 Mr. Grant discusses the process to determine what type of transmission upgrades 2 are needed to interconnect the Sagamore Wind Project to the SPP transmission 3 grid in his direct testimony. 4 A proposed map of the Sagamore Wind Project is provided as Attachment 5 RH-1. As discussed in more detail by Mr, Evans, the Sagamore Wind Project will 6 be completed in time to qualify for the full value of federal PTCs, therefore 7 maximizing the available cost savings to SPS customers. 8 Q. Please provide a description of the Hale Wind Project. 9 A. The Hale Wind Project will be a 478 MW facility located in Hale County, Texas. 10 To develop the Hale Wind Project, SPS will install a combination of Vestas 11 model 2.0 MW V110 and V116 wind turbines to produce 478 MW. Site 12 infrastructure will include access roads, foundations, electrical cable collection 13 systems, and collection system substations. 14 Similar to the Sagamore Wind Project, generation output will tie into the 15 SPP transmission system through a Gen Tie line from the Hale Wind Project 16 collector station to the interconnection tie breaker at the TUCO substation (i.e., 17 the SPP transmission grid point). Mr. Grant discusses the process to determine

1 what type of transmission upgrades are needed to interconnect the Hale Wind 2 Project to the SPP transmission grid in his direct testimony. A proposed map of the Hale Wind Project is provided as Attachment 3 RH-2. As discussed in more detail by Mr. Evans, the Hale Wind Project will be 4 5 completed in time to qualify for the full value of federal PTC, therefore 6 maximizing the available cost savings to SPS customers. 7 Q. Explain further the value of partnering with Invenergy and NextEra. 8 A. Invenergy is a well-established Independent Power Producer. Invenergy is North 9 America's largest independent wind power generation company, with a strong 10 track record of success having developed 68 wind farms across the United States, 11 Canada and Europe, totaling over 7,654 MW. Similarly, NextEra is one of the 12 largest generators of renewable energy from wind and sun in North America, with 13 117 wind farms in 20 states and Canada, totaling over 13,850 MW. The opportunity to partner with Invenergy and NextEra on the acquisition 14 15 of the Sagamore and Hale Wind Project sites allowed the combination of Xcel 16 Energy's construction and operations expertise with the wind development 17 expertise of these two developers, which provided great confidence in having

advantage of full PTC benefits for SPS's customers.

"construction-ready" sites of this scale within the timeframe necessary to take

18

19

1

2

3

5

7

8

11

17

With respect to Invenergy, Xcel Energy has previously partnered with them on a 600 MW wind project through a similar "construction-ready" acquisition in Colorado, as well as other "Build Own Transfer" wind projects for 4 Northern States Power Company – Minnesota ("NSPM"). To date, the partnership has been successful and has allowed Xcel Energy to gain beneficial 6 experience that supports pursuing a partnership with Invenergy in the SPS service territory. In summary, Invenergy and NextEra originally acquired the rights to the 9 respective sites because, based on their extensive wind development expertise, 10 they saw the ability to harness strong wind resources and develop both projects at their respective sites. SPS picked the SPS Projects to acquire and develop for the 12 same reasons. 13 Did SPS rely on any third parties to verify that Sagamore and Hale Wind Q. 14 **Project sites were viable options?** 15 A. Yes. A significant component of this due diligence effort involved a detailed 16 third party analysis of the proposed wind resources, which was performed by Mr. David DeLuca of AWS Truepower.

1 Q. Why did SPS choose AWS Truepower?

- 2 A. AWS Truepower is a recognized leader in weather instrumentation and industrial
- 3 monitoring and was selected due to their significant expertise in this area.
- 4 Moreover, Xcel Energy has previously worked with AWS Truepower on other
- 5 projects.

11

12

13

14

15

16

17

18

6 Q. Please describe AWS Truepower's analysis further.

A. AWS Truepower performed a wind resource assessment to verify the quality of the wind resource at Sagamore and Hale Wind Project sites. In particular, SPS contracted with AWS Truepower to perform a third-party analysis of the Sagamore and Hale Project site wind data.

As explained in the direct testimony of Mr. DeLuca, as part of the wind resource assessment, for the Sagamore Wind Project, AWS Truepower reviewed and confirmed Invenergy's site meteorological ("MET") tower data taken over the past five to six years and compared that data to available industry information to develop models of the wind energy resource. For the Hale Wind Project, AWS Truepower utilized available wind resource data for the region to analyze the potential of the wind farm. In addition to the estimate of expected generation, AWS Truepower undertook an uncertainty analysis, in which uncertainty of every

1		step of the process is considered and modeled to make output predictions at
2		various probability levels.
3		AWS Truepower concluded that by using the proposed Vestas model 2.0
4		MW V110 and V116 wind turbines, the expected net generation at Sagamore
5		Wind Project is 2,389 Gigawatt hour ("GWh")/year with a net capacity factor
6		("NCF") of 52.2% and the expected net generation at the Hale Wind Project is
7		2,077 GWh/year with a NCF of 49.6%. ³
8	Q.	Are the analyses to be performed by AWS Truepower finished?
9	A.	No. AWS Truepower is in the process of completing a detailed MET tower data
10		model for the Hale Wind Project to be utilized for further siting and development
11		activities. AWS Truepower will also assist in micro-siting for both SPS Projects,
12		which involves optimizing the specific location of each wind turbine.
13	Q.	Did SPS also perform its own due diligence activities for the Sagamore and
14		Hale Wind Projects?
15	A.	Yes.

³ NCF characterizes the efficiency of the plant and is derived from taking what the plant is expected to generate and dividing it by the amount the plant could generate if operated at full output for an entire year based on a 50% or P50 industry recognized number.

1 Q. How did SPS undertake its due diligence?

A.

SPS based its due diligence for the Sagamore and Hale Wind Projects on answering questions and gathering information regarding nine general areas: (1) transmission and interconnection; (2) land control; (3) wind turbine supply; (4) wind data; (5) siting and permitting; (6) technical attributes; (7) financial considerations; (8) legal; and (9) environmental. The approach was similar to the due diligence approach taken by NSPM. NSPM owns over 850 MW of wind generation and started using this due diligence approach in 2008 with its acquisition of the Grand Meadow Wind Farm and has continued to follow this approach with NSPM's acquisition of the Nobles, Pleasant Valley, Border Winds, and Courtenay wind farms. PSCo also has used this approach for its Rush Creek Wind Project.

Based on the answers and information gathered, SPS personnel determined whether significant issues exist that could threaten the development of a project.

These groups of SPS personnel also reviewed Invenergy and NextEra's documents and data to identify any questions and/or issues with the SPS Projects to date. SPS also contracted with third party consultants where appropriate to verify the developer's information.

1		The ultimate goal of the due diligence undertaken by SPS was to ensure
2		that a proposed project has been properly developed and is "shovel ready" or
3		"construction ready" in industry terminology.
4	Q.	Have SPS's due diligence efforts to date identified any significant issues that
5		would halt the development of the Sagamore or Hale Wind Projects?
6	A.	No. Based on the results of the due diligence process, the risks of the SPS
7		Projects are considered low and are expected to remain low throughout the
8		acquisition, design, engineering, permitting, and construction phases. For
9		example, the environmental evaluation identified low risk with regard to area
10		wetlands, presence of endangered species, avian impacts, and cultural and
11		historical resources.
12	Q.	Are due diligence efforts continuing?
13	A.	Yes. The due diligence actions will continue for the two SPS Projects. For
14		example, additional lower risk studies and assessments will be conducted
15		throughout the summer of 2017, such as cultural resource, microwave beam path,
16		wildlife, detailed turbine siting, and soil/geotechnical studies. Additionally,
17		project performance and wind data was independently verified to confirm its
18		acceptability for the SPS Projects.

1		By the fall of 2017, I expect that 80% of the outstanding studies will be
2		complete. The timing and progression of these studies and site assessments is
3		typical for a construction project prior to securing regulatory approvals.
4	Q.	What if the continuing due diligence efforts identify issues of concern?
5	A.	To the extent issues are identified, SPS fully expects it can mitigate any risks
6		through project design. For example, the available acreage at both the Sagamore
7		and Hale Wind Project sites allows for final turbine siting to avoid any
8		undesirable soil conditions, geotechnical conditions or isolated cultural resource
9		locations that may be identified during detailed studies. As provided in the PSAs,
10		both Invenergy and NextEra will obtain additional sites for the turbines to allow
11		SPS to react to the possible issues noted above. Having access to preselected
12		additional sites is typical in the industry, and gives us flexibility to mitigate
13		potential issues through siting and project design.
14	Q.	In addition to the due diligence performed by SPS and AWS Truepower, did
15		Invenergy and NextEra perform wind resource assessments of the Sagamore
16		and Hale Wind Projects?
17	A.	Yes. Developers typically analyze a wind farm site's wind resource by using
18		wind data collected on-site and correlating it to publicly available long-term data
19		sets to show the estimated performance of the site projected over the wind farm's

1		estimated life. Invenergy and NextEra performed these activities for the
2		Sagamore and Hale Wind Projects, respectively.
3		As part of the final engineering and design phase, SPS and Invenergy (for
4		the Sagamore Wind Project) and SPS and NextEra (for the Hale Wind Project)
5		along with Vestas (the turbine supplier) will continue to optimize the production
6		by performing a production analysis. The production analysis will evaluate
7		turbine locations and revise the site(s) layout to increase the production of the site
8		while also controlling construction costs.
9	Q.	What NCF did SPS use in its cost analysis of the SPS Projects?
10	A.	SPS used data from AWS Truepower and then modified that data to reflect the
11		following Project-specific specifications:
12 13 14 15 16		 The long-term availability used by AWS Truepower are averages for all manufacturers of turbines that reflect equipment failures related to earlier equipment used in the industry. In contrast, the equipment being supplied for the SPS Projects today is more mature, so the reliability and performance of the equipment has improved.
17 18 19 20		2. Next, the contract with Vestas has an uprate factor for the performance of the turbines that is not public and was not available to AWS for its wind resource assessment. SPS, along with Vestas, applied this performance to the AWS Truepower NCF values.
21 22 23 24		3. Currently, there is uncertainty regarding the exact mix of V110 (i.e., the safe harbor turbines) and the V116 turbines that will be supplied for the SPS Projects. As a result, SPS made a modification in NCF to account for this optionality, along with another minor reduction for contingency.

1 4. SPS modified AWS Truepower's NCF values to account for expected losses, based on the estimated length of the SPS Projects' Gen Tie lines. 3 The resulting NCF estimated for the SPS Projects at the point of interconnection 4 are 53.8% and 51% for the Sagamore and Hale Wind Projects, respectively. As 5 noted above, these modifications are higher than AWS Truepower's estimated NCF of 52.2% and 49.6% for the Sagamore and Hale Wind Projects, 6 respectively.⁴ 7 8 SPS used those Project-specific NCFs in its cost analyses presented in SPS 9 witness Jonathan Adelman's direct testimony. In his direct testimony, Mr. 10 DeLuca discusses the AWS Truepower data that was provided to SPS. 11 Q. What activities will Vestas perform for due diligence purposes? 12 A. Similar to AWS Truepower, Vestas will also perform a production analysis. The 13 production analysis is being provided at no additional cost as part of the 14 relationship between Vestas and SPS. SPS will use the Vestas production 15 analysis to further evaluate the turbine locations and finalize the site(s) layout to 16 help maximize production output while also controlling construction costs.

⁴ The difference between AWS Truepower's estimated NCF and the Project-specific NCF is the combined effect of the specifications I have described and the total percentage adjustment cannot be attributed solely to one specification.

1	Q.	Based on the site selection process and due diligence conducted to date, do
2		you think the Sagamore and Hale Wind Projects are strong projects?
3	A.	Yes. These are low-risk sites with high quality wind resources, and as I discuss
4		further below, the Sagamore and Hale Wind Projects compare favorably from a
5		cost perspective with other similar wind projects in the market. The benefits
6		from a well thought out project with a strong wind resource and favorable price
7		will flow to SPS customers, and the Sagamore and Hale Wind Projects satisfies
8		these criteria.

1 IV. CONSTRUCTION AND OTHER SPECIFICS OF THE SPS PROJECTS

- 2 Q. What topic do you discuss in this section of your testimony?
- 3 A. I discuss how Xcel Energy constructs a wind generation project and how Xcel
- 4 Energy's prior experience with similar projects provides the requisite skills to
- 5 develop the Sagamore and Hale Wind Projects. I will also address the contracts
- 6 SPS has entered into or intends to enter into to develop the Sagamore and Hale
- Wind Projects.

8 A. The Wind Farm Construction Process

- 9 Q. Please describe what is involved in building a wind generation project,
- including the major construction components of the Sagamore and Hale
- 11 Wind Projects.
- 12 A. Constructing a wind generation project such as the Sagamore and Hale Wind
- 13 Projects, generally involves seven main components: turbine access roads; turbine
- foundations; tower erection; collector system; collector substation; high voltage
- generation tie line; and an operations and maintenance ("O&M") building. These
- 16 components are described below and shown in the corresponding numbered
- photos included as Attachment RH-3, which provide some visual context for each
- 18 of these construction components. Although the components outlined below

1 represent the typical construction sequence for any wind farm, some or many of 2 these activities can occur simultaneously. 3 1. Road Construction: The first step in the construction sequence is to 4 construct access roads to the turbine sites and substation locations to allow 5 equipment and material delivery during construction. 6 designed with proper grading and drainage, and will be specifically 7 constructed to support heavy machinery and construction materials. 8 Following construction, the roads will continue to be used to access each turbine for ongoing maintenance and operation purposes. 9 10 2. Turbine Foundations: Foundations will be constructed at each tower site location using a typical foundation design of reinforced concrete 11 12 consisting of layers of steel rebar and a centrally located anchor bolt cage design to support the Vestas loading requirements. 13 14 3. Tower Erection: Once the foundations have been constructed and 15 backfilled, the approximately 80-meter turbine towers comprised of three 16 sections, the Nacelle and the blades (3 per turbine) will be unloaded adjacent to each foundation and erected using a crane. Turbine component 17 deliveries will be scheduled a few weeks in advance of the actual tower 18 19 and turbine erection to assure that there is an adequate "inventory" of turbine components staged on site and allow for unimpeded turbine 20 erection. The first two tower sections are set with a smaller crane. Then a 21 22 larger crane is brought in to set the top tower section. Next, the nacelle is then raised and bolted to the top of the tower; the nacelle houses all of the 23 24 generating components in a wind turbine, including the main shaft, 25 gearbox, generator, and transformer. The hub and three 54-meter-long blades will then each be raised and attached to the nacelle. These 26 27 components constitute the hub assembly. 28 4. Collector System: An electrical collector system will be trenched (or 29 possibly plowed) in underground to bring each turbine's electrical output

will be determined by the final engineering design.

to the collector substation described in #5 below. The collector cable sizes

30

31

1 2 3 4 5		5. Collector Substation: A collector substation will be constructed to accept the underground collection cables from each circuit and combine them prior to the voltage being stepped up by transformers from the turbines' 480 volt generation voltage to 34.5 kilovolt ("kV") collection system voltage to transmission interconnection 230 or 345 kV voltage.
6 7 8 9		6. <u>High Voltage Generation Tie Line:</u> The high voltage generation tie line is constructed, which connects from the high side of the Collector Substation transformers to the breaker located at the transmission grid connection point.
10 11 12 13		7. Operations & Maintenance Building: An Operations & Maintenance building will be constructed on each site to house the facility office, maintenance crews, computer systems for plant operations, spare parts storage, repair and maintenance shop areas and equipment storage.
14	Q.	Please generally address Xcel Energy's role in the construction process.
15	A.	For the Sagamore and Hale Wind Projects, XES (and SPS) personnel will assume
16		overall project management responsibility. I have great confidence in the XES
17		(and SPS) personnel's collective ability to provide the overall project
18		management based on the history of their successful project management of much
19		larger and more complex projects in recent years.
20		In addition to internal personnel, both Vestas and the selected BOP
21		contractor(s) will have project management and engineering personnel on site.
22		Vestas and the BOP contractor ultimately selected will be highly invested in the
23		success of the Sagamore and Hale Wind Projects and will work hand in hand with
24		XES and SPS management to ensure the SPS Projects are brought on-line safely,

A.

on time and on budget. Vestas and any of the BOP contractors being considered are major developers in the wind farm industry and know that the success of the Sagamore and Hale Wind Projects is essential to their future opportunities in the industry.

5 Q. How is Xcel Energy's previous construction and project development 6 experience relevant to this proceeding?

Xcel Energy has a long and successful history in all aspects of large scale generation projects, including wind farm projects. To provide some overall perspective, currently the electric systems of all four of the Xcel Energy operating companies are comprised of approximately 18,000 MW of generating capacity (6,566 MW of wind), 19,523 miles of transmission, 1,219 substations, and 48,068 miles of overhead and 26,580 miles of underground distribution. Therefore, Xcel Energy has constructed, operated, and maintained tens of thousands of megawatts of generating units of all fuel types and sizes including wind turbine generators and tens of thousands of miles of transmission and distribution lines, as well as over a thousand substations. All of Xcel Energy's non-wind related generating stations that utilize combustion turbines, combined cycle units, and coal fired units are significantly more complex than wind turbine generators. Traditional

1		generating units nave nundreds to thousands of components (e.g., pumps, motors,
2		boilers, and coal mills) not found on wind turbines.
3		Most importantly, Xcel Energy performs these projects safely and
4		currently has an Occupational Safety and Health Administration rate in the top
5		quartile of the industry.
6	Q.	How does Xcel Energy's previous construction and project development
7		experience specifically apply to the construction of the Sagamore and Hale
8		Wind Projects?
9	A.	Based on the seven main construction components I outlined above, SPS views
10		the construction of the Sagamore and Hale Wind Projects as very similar to
11		construction of SPS's typical transmission projects, which primarily includes
12		building roads into an open field, setting foundations, erecting towers,
13		pulling/burying wire, building substations, and connecting to the transmission
14		grid. SPS and XES are very skilled at each of these construction components
15		because of their similarity to the type of work done across the SPS (and other
16		operating companies) service territory.
17		For example, the collector system of a wind farm is basically an
18		underground distribution system that is nearly identical (a collector system

utilizes a higher voltage than SPS's typical residential distribution systems) to an underground distribution system widely used across SPS's service territory to serve residential subdivision customers. Similarly, the substations, transformers, and transmission line are all identical to infrastructure in place all across our service territory.

Furthermore, the commissioning process for the collector system, transmission and substation facilities is identical to the commissioning of any other substation, transmission, and distribution project on SPS's system. The commissioning of the wind turbines is much simpler than the commissioning of a gas combustion turbine, combined cycle, or gas/coal fired steam generating station as there are significantly fewer moving parts and systems. As part of their contract to supply the turbines, Vestas will commission the wind turbines for SPS once construction is completed. Commissioning wind turbine generators includes, among other things: calibrations; UPS battery checks; blade pitch; yaw checks; and equipment alignments. When all testing and commissioning has been completed, SPS declares the facility commercial and turns its operation over to Xcel Energy's commercial operations group to dispatch.

Q. Please briefly address Xcel Energy's specific experiences with other wind farm construction.

A.

With regard to specific wind farm construction on Xcel Energy's system, in recent years, NSPM contracted to have its Pleasant Valley Wind Project and Border Winds Project built through a build own transfer, commonly known as a "BOT", structure. In this structure, NSPM had the developer perform construction up to the point of "handing us the keys." However, NSPM was not a passive participant or merely a buyer of the projects. Rather, NSPM was very involved in the oversight of the projects and gained a great deal of expertise during the respective processes.

For NSPM's latest project - the Courtenay Wind Farm in North Dakota - NSPM transitioned to a more hands on approach. NSPM purchased the Courtenay site from the developer as a "construction ready" site, under which the developer had completed upfront development activities including, among other things: permitting; lease agreements; and preliminary design work. Once purchased from the developer, NSPM took over control and management of all aspects of the project. This approach is nearly identical to the approach proposed for the Sagamore and Hale Wind Projects. I note that the Courtenay Wind Project

was completed in November of 2016, was on schedule, and came in at 5% under the estimated budget.

In addition, PSCo is currently constructing a 600 MW Rush Creek Wind Project. Similar to the Courtney project for NSPM, for the Rush Creek Wind Project, PSCo purchased the Rush Creek sites from the developer as a "construction ready" site. Also, similar to the Courtney Wind Project, the developer for the Rush Creek Wind Project completed upfront development activities including, but not limited to: permitting; lease agreements; and preliminary design work.

Due to the Pleasant Valley Wind Project and Border Winds Project, as well as the more recent Courtenay and Rush Creek projects, Xcel Energy has learned a significant amount about constructing a new wind farm, and perhaps most importantly, learned that it possesses the skills to build, operate and maintain wind farms successfully. I am very confident in Xcel Energy's ability to complete the Sagamore and Hale Wind Projects safely, within budget, and on time.

1	Q.	What contracts have SPS or other Xcel Energy affiliates entered into with
2		regard to the Sagamore and Hale Wind Projects?
3	A.	There are several major contracts associated with the Sagamore and Hale Wind
4		Projects:
5 6 7 8 9		 First, Capital Services, LLC entered into a MSA with Vestas for model 2.0 MW V110 and V116 Vestas wind turbines. The MSA ensured that sufficient turbines were purchased to comply with the safe harbor requirements under the Omnibus Appropriations Act ("OAA") for PTC benefits.
11 12 13 14 15 16 17		2. Second, SPS entered into two similar PSAs to acquire the wind development rights from Invenergy and NextEra for the Sagamore Wind Project and the Hale Wind Projects respectively for the acquisition of the Sagamore and Hale Wind Projects. Under the PSAs, the developers are required to provide sites ready for SPS to begin construction. The PSAs are included as Attachment RH-4 and RH-4(CONF) and Attachment RH-5 and RH-5(CONF) for the Sagamore and Hale Wind Projects, respectively.
19 20 21 22 23		SPS entered into a Sale of Components Agreement with Capital Services, LLC to purchase the wind turbines that were purchased to comply with the safe harbor requirements under the OAA.
23		The Sale of Components Agreement is addressed by Mr. Evans, including the
24		reasonableness of the agreement. For this reason, my testimony will not
25		separately discuss the Sale of Components Agreement any further. The other
26		contracts are discussed further below.

1	Q.	What contracts will SPS enter into prospectively with regard to the
2		Sagamore and Hale Wind Projects?
3	A.	There will be several future agreements:
4 5 6 7 8 9 10 11 12		 Under the scope of the MSA, and pending receipt of necessary regulatory approvals, SPS will execute specific TSAs with Vestas to purchase the additional turbines needed to complete the development of the SPS Projects and deliver the turbines to the SPS Projects' sites. SPS will also enter into fixed price BOP construction contracts for the installation of the wind turbines and construction of the sites' infrastructure. Another major contract is the SMWA, which will also be with Vestas.
14 15 16 17		The SMWA has a term of three years and is addressed further in the testimony of SPS witness Mr. William P. Zawacki. These contracts are discussed further below.
18	Q.	Before you discuss the contracts further, explain how SPS determined the
19		sequence of contracts for the SPS Projects?
20	A.	SPS moved forward systematically through an established system of prioritization
21		in executing these contracts. The MSA was entered into first to ensure sufficient
22		turbines were purchased to comply with the safe harbor requirements of the OAA.
23		Next, the PSAs were executed so SPS could possess development rights on the
24		real property at the Sagamore and Hale Wind Projects sites.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

В.

Q.

A.

Once regulatory approvals are received, the TSAs will be executed to purchase additional turbines necessary to complete the SPS Projects and deliver the turbines to each SPS Project's site, as well as establish the design criteria of the sites' infrastructure. The SMWA will be executed as part of the TSA process. Similarly, the affiliate sales agreement between Capital Services LLC and SPS will be executed once regulatory approvals are received. SPS will move forward to bid out and secure the BOP contract by the fourth quarter of 2017, which will cover the construction of the site, roads, foundations, tower erection, and collector system. Finally, I note there will also be a few smaller contracts to be entered into including, but not limited to, contracts for long lead time substation transformers, engineering services, and geotechnical investigations. **Master Service Agreement** Please describe the MSA. On September 15, 2016, Capital Services, LLC entered into the fixed price MSA with Vestas, a leading international wind turbine supplier with manufacturing operations in Colorado. The MSA governs the purchase of turbines from Vestas

by Capital Services, LLC. The MSA also governs the delivery, inspection,

storage, and maintenance of the turbines, as well as the timelines for completion of the turbines and qualification for PTC benefits.

The MSA was entered into with Vestas after Xcel Energy obtained pricing from both Vestas and other major international wind turbine manufacturers, as part of an analysis for potential wind projects for the Xcel Energy operating companies. Xcel Energy determined that the Vestas proposal offered more favorable pricing and conditions, and the MSA is the result of comprehensive negotiations between Xcel Energy and Vestas. Moreover, the Vestas pricing and contract terms offered Xcel Energy the best opportunity to control schedule and costs because, in SPS's experience, local manufacturing significantly reduces delivery schedule and cost risks as it eliminates long duration sea or rail transportation, and minimizes delivery delays.

13 Q. Where will the turbines be manufactured?

A.

Vestas is an international manufacturer and supplier of wind turbines, but the majority of the nacelles, towers, and blades of the Sagamore and Hale Wind Project turbines (i.e., the major components) are expected to be manufactured in the United States (Colorado).

1 Q. Why did Capital Services, LLC enter into the MSA with Vestas?

2 A. As discussed further by Mr. Evans, to receive 100% PTC benefits, the developer 3 must have made expenditures of 5% of the total cost of the project by December 4 31, 2016, and the project must be in service by December 31, 2020. However, at 5 that time the OAA was enacted, SPS had not completed negotiations with 6 NextEra and Invenergy, and, therefore, it did not know how many turbines it 7 would need to purchase. Because SPS was not in a position to purchase the turbines and other assets from Vestas in 2016, Capital Services, LLC made those 8 9 purchases for the benefit of SPS and its customers.

10 C. Purchase and Sale Agreements

11 Q. Describe the PSA's for the SPS Projects.

12 A. On March 9, 2017 and on March 6, 2017, SPS entered into two similar PSAs with
13 Invenergy and NextEra respectively for the acquisition of the Sagamore and Hale
14 Wind Project sites. The PSAs spell out the requirements that Invenergy and
15 NextEra must complete to have the sites construction ready before March of
16 2018. This deadline will allow SPS to construct the Hale Wind Project by June
17 2019 and the Sagamore Wind Project by May 2020 to qualify for the full PTC
18 benefit.

1 Generally speaking, the transactions are structured as a "develop-transfer," 2 under which a project company subsidiary of Invenergy and NextEra will perform the development activities, after which SPS will buy the project company from 3 Invenergy and NextEra -- complete with all project contracts, permits and other 4 5 assets for which Invenergy and NextEra are responsible. The closing of the PSAs 6 will occur once: (1) Invenergy and NextEra have performed its development obligations; (2) regulatory approvals and other permits have been obtained; and 7 8 (3) certain other closing conditions have been met. 9 Below is a non-exhaustive list of the most critical development activities 10 that Invenergy and NextEra must perform with regard to the Sagamore and Hale 11 Wind Projects: 12 • Obtain all real property rights necessary for the siting and construction, including certain lease amendments to clarify the calculation of project 13 output-based payments to landowners; 14 15 Manage negotiations with landowners prior to closing, including landowner meetings as appropriate; 16 Manage zoning and permitting, including all permits necessary to 17 complete the development of the Project; 18 19 Manage title issues, including title commitments and curative work; 20 Complete the microwave beam path analysis; 21 Complete the Federal Aviation Administration flight path study; and

1 2		 Assist with site layout, including turbine locations and alternate locations to optimize the project's performance.
3		Invenergy and NextEra are responsible for making the site "construction ready,"
4		while SPS is responsible for construction, including roads and procurement of
5		turbines or other equipment under the MSA or future TSAs.
6	D.	Turbine Supply Agreements
7	Q.	Please describe the TSAs that will be executed if regulatory approval is
8		received.
9	A.	As discussed above, the MSA is between Vestas and Capital Services, LLC.
10		Pricing is fixed under the MSA for subsequent wind turbine deliveries that will
11		occur under TSAs that will be executed in the future between SPS and Vestas if
12		regulatory approvals are received. The TSAs will enable the purchase of the
13		additional turbines needed to complete the SPS Projects' construction and deliver
14		the turbines to the SPS Projects' sites.
15	Q.	Please describe the TSAs further.
16	A.	The TSAs incorporate various risk mitigation measures. For example, material
17		cost obligations are incurred once regulatory approvals are received. The TSAs
18		also: (1) incorporate typical turbine performance terms; (2) require timely
19		manufacturing production and delivery; (3) include standard industry warranties

1

and a supplier parent guaranty; and (4) incorporate liquidated damages clauses for

2		failure to achieve the contractual milestones.
3	E.	Service Maintenance and Warranty Agreements
4	Q.	What is the SMWA?
5	A.	As discussed in more detail by Mr. Zawacki, it is a contract that, when executed,
6		will obligate Vestas to perform warranty work and three years of scheduled
7		maintenance on the wind turbine generators after final commissioning. The defect
8		warranty period for each turbine will run for approximately two years. SMWA
9		costs are not capital costs, but rather are classified as an O&M cost of facility
10		operation for ongoing maintenance of each Project.
11	Q.	When do you expect the SMWA being executed?
12	A.	As I mentioned earlier, SMWA will be executed as part of the TSA process. Both
13		are conditioned on SPS receiving the necessary regulatory approvals.
14	F.	Balance of Plant Contracts
15	Q.	Please describe the BOP.
16	A.	The BOP contract(s) for the SPS Projects will also be fixed price-contracts and
17		similar to the MSA will minimize schedule and cost risk. The BOP contracts are

expected to be awarded later this year and will be conditioned on regulatory approval of the Sagamore and Hale Wind Projects.

The scope of the BOP contract(s) will include installation of the wind turbines and construction of the site(s) infrastructure. Site infrastructure includes access roads, foundations, electrical cable collection systems, collection system substations, and O&M buildings. After completion of preliminary engineering later this spring, SPS anticipates issuing a firm price Request for Proposals ("RFP") to qualified contractors in the summer, enter into negotiations, and obtain firm pricing by the fourth quarter of 2017.

SPS will leverage the previous work done by the other Xcel Energy operating companies in selecting the list of BOP contractors to solicit bids from, as well as support the evaluation taking into account the work done by some of these BOP contractors on previous Xcel Energy projects.

1		V. <u>DESIGN AND CONSTRUCTION COST ESTIMATES</u>
2	Q.	What topic do you discuss in this section of your testimony?
3	A.	I discuss the design and construction cost estimates for the Sagamore and Hale
4		Wind Projects and provide the bases for the overall estimates.
5	Q.	What is the estimated cost of construction for the Sagamore Wind Project?
6	A.	\$825 million.
7	Q.	What is the estimated cost of construction for the Hale Wind Project?
8	A.	\$735 million.
9	Q.	Please provide a high-level breakdown of the projected total construction
10		costs for the Sagamore and Hale Wind Projects.
11	A.	There are six major categories of items making up these costs, which are provided
12		in Attachments RH-6(CONF) and RH-7(CONF). Tables RH-1 and RH-2 below:
13		(1) provide a breakdown of the construction costs for each Project; and (2) reflect
14		four categories of costs, as opposed to six, for confidentiality reasons, but have
15		the same total(s) as provided in Attachments RH-6(CONF) and RH-7(CONF).

Table RH-1 Estimated Construction Costs for the Sagamore Wind Project

Description	Value
Turbines, Development, and Construction	\$748,515,585
Landowner Payments, Consulting Fees, Taxes,	55,359,059
and Insurance	
Project Management and Associated Costs	11,274,576
General Project Contingency	10,000,000
Total	\$825,149,220

2

3

Table RH-2 Estimated Construction Schedule for the Hale Wind Project

Description	Value
Turbines, Development, and Construction	\$702,349,925
Landowner Payments, Consulting Fees, Taxes,	11,016,698
and Insurance	
Project Management and Associated Costs	11,170,987
General Project Contingency	10,000,000
Total	\$734,537,610

4

5

Q. Please address how the items in the first line item(s) in Tables RH-1 and

6 RH-2 were determined.

- 7 A. The amounts reflect the firm price contracts that either SPS or Capital Services,
- 8 LLC entered into with Invenergy, NextEra, or Vestas. Attachments RH-6(CONF)
- 9 and RH-7(CONF) provide the individual contract totals, whereas Tables RH-1
- and RH-2 combined the costs for confidentiality reasons.

1		In addition, the first line item also include the BOP construction contract
2		estimates for the SPS Projects. I discuss how SPS developed this estimate further
3		below. This combination is the only difference between Attachments
4		RH-6(CONF) and RH-7(CONF) and Tables RH-1 and RH-2.
5	Q.	Please address how BOP construction contract estimates were determined.
6	A.	SPS developed cost estimate(s) as the contracts are not yet executed. For
7		estimation purposes, SPS started with the BOP contract estimate from the fixed
8		cost BOP contract (which was competitively bid) for the NSPM Courtenay Wind
9		Farm wind project. This contract is reasonably indicative of the current market
10		for BOP services and represents a reasonable starting point to develop the BOP
11		contract cost estimate for the Sagamore and Hale Wind Projects.
12	Q.	What steps did SPS take to develop the BOP contract cost after considering
13		the BOP contract estimate for the Courtenay Wind Project?
14	A.	Because the Sagamore and Hale Wind Projects are significantly larger in
15		nameplate capacity than the Courtenay Wind Project (i.e., 200 MW versus 522
16		MW and 478 MW, respectively), SPS took the Courtenay Wind Project BOP
17		contract price as a foundation for developing the SPS Projects' BOP estimates.
18		More specifically, SPS applied the fixed BOP cost for the Courtenay Wind Farm

as a "per 200 MW" cost structure to develop a starting baseline cost estimate for the 522 MW Sagamore and 478 MW Hale Wind SPS Projects. This new base estimate was modified for known scope of work differences between the Courtenay Wind Project and the Sagamore and Hale Wind Projects and then scaled up the estimates for the desired MW output for the Hale and Sagamore sites.

SPS then modified the BOP line items from this base estimate to account for locality specific construction issues in Texas and New Mexico based on past experience, such as local geology, availability of road base, and labor. SPS also discussed these Texas and New Mexico-centric construction issues with the North Dakota-based contractor for the Courtenay Wind Project, Mortenson Construction Company, who also has experience with wind farm construction in Texas and New Mexico, to obtain their insights on these issues and factor them into our estimate.

SPS also discussed with Invenergy and NextEra specific options for design and cost estimates for items such as roads and collection lines to get their general estimates for specific line items in the BOP contract estimate. SPS

1		contacted transformer manufacturers to get pricing estimates on various sizes and
2		options along with delivery estimates.
3		Finally, SPS looked at approximately 25 total risks and estimated
4		contingencies for these risks, then applied them to the relevant construction
5		category. This information resulted in further modification to the BOP contract
6		estimate.
7	Q.	Referring again to Tables RH-1 and RH-2, please address the items in the
8		second line regarding Landowner Payments, Consulting Fees, Taxes, and
9		Insurance.
10	A.	This line item is premised on BOP-estimated lengths for access roads and
11		collection cables. The leases allow for the SPS Projects and associated
12		transmission to be sited.
13		The estimate also includes amounts for the possible additional leases and
14		associated costs that SPS might need to enter into prior to commercial operation.
15		The estimated landowner payments during construction for the Sagamore and
16		Hale Wind Projects amount to approximately \$6.4 million and \$4.5 million,
17		respectively.

1 Tax estimates of approximately \$2.3 million for the Hale Wind Project are 2 based on payments for equipment that is not specifically used for the generation and distribution of electricity. The tax estimates for Sagamore are approximately 3 \$43.2 million and based on current New Mexico rules. 4 These taxes were 5 developed in consultation with Xcel Energy's tax group. The taxes are based on 6 point of delivery and are county-specific or municipality-specific. 7 Consulting fees estimates of \$3.3 million (each) for the Sagamore and Hale Wind Projects are based on contracts SPS has either entered into or expects 8 9 entering into for necessary services such as geotechnical and storm water engineering services. Insurance and risk avoidance fees are approximately \$2.4 10 11 million for the Sagamore Wind Project and \$0.9 million for the Hale Wind 12 Project. 13 All of the amounts above combine into the second line item cost estimates 14 for the Sagamore and Hale Wind Projects in Tables RH-1 and RH-2. 15 Q. How did SPS estimate the items in the third line item(s) in Tables RH-1 and 16 RH-2, Project Management and associated costs? 17 A. The \$11.3 and \$11.2 million estimate for the Sagamore and Hale Wind Projects, 18 respectively: (1) consists of internal time for SPS and XES personnel; and (2)

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

reflects the developed staffing plan for both SPS Projects. Accordingly, the costs in the third line item include an estimate for all of the internal labor SPS expects to allocate towards managing the development and ownership of both SPS Projects. The costs in the third line item also include external labor and contract staff, such as safety personnel and construction management, and these external personnel estimates are developed hourly based on a 50- to 60-hour work week. This is a standard work week for these types of contractors. Q. Please address the General Project Contingency estimates in the fourth line in Tables RH-1 and RH-2. A. This is a General Project Contingency for mitigating uncertainties created by unforeseen events or circumstances. This contingency allowance is approximately 1.2% of the project cost for the Sagamore Wind Project and 1.4% for the Hale Wind Project because separate design, construction, and scope contingency allowances will be applied to individual elements of the BOP and TSA contracts.

1 VI. CONSTRUCTION SCHEDULES FOR THE SPS PROJECTS

2 Q. What topic do you discuss in this section of your testimony?

6

7

8

9

10

11

12

13

14

15

16

17

18

A.

- 3 A. I discuss the construction schedules for the Sagamore and Hale Wind Projects.
- 4 Q. Please provide an overview of the construction schedule, including key
 5 milestones.
 - SPS will manage the overall projects' schedule by coordinating between Vestas' fabrication, delivery, and commissioning efforts and the BOP construction tasks. Both Vestas and the BOP contractor will provide the necessary input to allow for schedule optimization and risk reduction. The SPS Projects' current estimated schedules were initially developed in consultation with Vestas to allow them to schedule their turbine fabrication activities. The schedules will be reviewed with the selected BOP contractor(s) during contract negotiations to allow for input and concurrence. Any efficiency noted by the BOP contractor(s) during this process that requires a schedule adjustment will be coordinated with Vestas. This process will allow continual schedule improvement and reduce schedule and cost risks. The current construction schedule is set forth in Table RH-3 below for the Sagamore Wind Project and Table RH-4 below for the Hale Wind Project, subject to potential changes as the contracting process moves forward.

1 Table RH-3 Estimated Construction Schedule for the Sagamore Wind Project

Activity Description	Completion Date
Award BOP Construction Contract	December 2017
Mobilize for Construction	April 2019
Windfarm Engineering and Design	February 2019
Construct Roads, Access and Laydown Areas	November 2019
Construct Foundations	January 2020
Complete Collection System & Substations	January 2020
Install Transmission Lines	January 2019
Deliver and Offload – Turbines	March 2020
Install Wind Turbine Generators	April 2020
Wind Turbine Generator Commissioning	May 2020

<u>Table RH-4 Estimated Construction Schedule for the Hale Wind Project</u>

Activity Description	Completion Date
Award BOP Construction Contract	December 2017
Mobilize for Construction	May 2018
Windfarm Engineering and Design	September 2018
Construct Roads, Access and Laydown Areas	December 2018
Construct Foundations	January 2018
Complete Collection System & Substations	April 2018
Install Transmission Lines	February 2018
Deliver and Offload – Turbines	April 2018
Install Wind Turbine Generators	May 2018
Wind Turbine Generator Commissioning	June 2018

2 3

1 Q. What is the status of equipment procurement needed to construct the SPS 2 **Projects?** 3 A. The MSA has been signed and fabrication of the PTC components – meaning that 4 portion of the turbine components valuing 5% of the total project cost – have been 5 constructed and are in storage. The MSA allowed the SPS Projects to qualify for 6 the safe harbor requirements under the OAA, which is discussed further by Mr. 7 Evans. Fabrication of the remaining wind turbines, i.e., the non-safe harbor 8 9 turbines, is conditioned on both the Sagamore and Hale Wind Projects receiving 10 necessary regulatory approvals. Vestas has tentatively assigned fabrication slots in 11 their production schedule to allow the remaining wind turbines to be delivered in 12 the fourth quarter of 2018 or 2019 and the first quarter of 2019 or 2020 for the 13 Hale and Sagamore Wind Projects, respectively. Contractually, SPS must give a notice to proceed of at least 9 months before turbines would be available for these 14 15 time slots. 16 Beyond turbine fabrication, commodity materials will also need to be 17 procured for construction of the Sagamore and Hale Wind Projects. Commodity materials such as concrete, rebar, electric cable, and substation components will 18

19

be procured by the selected BOP contractor. Based on our experience, there is low

A.

risk with delivery of these commodity materials and it is unlikely to impact the anticipated June 2019 commercial operation date for the Hale and the May 2020 commercial operation date for Sagamore Wind Projects. Collector system transformers, which will be procured by SPS, have an estimated 60 week delivery cycle. The RFP for these components will be in late 2017 and the contracts are expected to be awarded in first quarter 2018 pending regulatory approval.

Q. Are there any construction progress and logistics issues you wish to address?

Yes. Invenergy and NextEra have reached out to local communities and landowners at or near Sagamore and Hale Wind Project sites as part of the development process to date. SPS will engage these same communities along with other stakeholders as part of an outreach program with this filing.

SPS, NextEra, Invenergy and the future BOP contractor will continue the outreach, education and collaborative process throughout the project timeline. Keeping these clear lines of communication will allow SPS to identify potential construction issues in advance of the selected BOP contractor's mobilization to the respective sites. One key area for coordination will be the timing of ongoing local and county road repairs as construction progresses. The BOP contract will have specific requirements for adequately maintaining all public roads.

1 Q. How does SPS plan to monitor progress and quality issues during 2 construction? 3 A. SPS's construction management team will review and audit quality documents. 4 Quality documents are contractor internal documents that generally provide 5 testing results for construction-related activities at the site. For example, if the 6 contractor inspects a weld, personnel complete a form and sign off on said

8 temperature, slump, and other measurements and submit reports to document 9 whether the work meets all applicable specifications. Our team will review all of

these quality documents when completed to stay current on progress and any

issues encountered at the site. SPS's construction management team will also

monitor wind turbine fabrication by Vestas by conducting frequent inspection and

inspection. As another example, if the contractor pours concrete, personnel take

observation visits to the fabrication facilities. This is discussed later in my

testimony and provides assurance that purchased equipment is fabricated in

accordance with the agreed upon technical specifications.

7

10

11

12

13

14

15

Q. What obligations do Invenergy and NextEra have between signing the PSAsand closing the transactions?

A. For the period of time leading up to the closing, Invenergy and NextEra (as well as its respective affiliates) must meet closing conditions that are set forth in Section 2.7, as well as other sections and schedules of the PSAs. In addition, they

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

Q.

A.

must assist SPS in achieving successful closing of the transactions. In addition, the costs for Invenergy and NextEra to complete their obligations are partially funded by deposit payments from SPS. These deposit payments are installments of the PSAs and come out of the total PSA costs. SPS makes these payments to Invenergy and NextEra, which funds some of the work conducted by Invenergy and NextEra to satisfy outstanding obligations under the PSAs. Given the "develop-transfer" structure of the transaction, SPS fully anticipates cooperation in these tasks as it is in the developers' best interests that the transaction closes to receive final payments. What happens between receipt of final regulatory approval and closing of the transactions? Invenergy and NextEra (and its affiliates) must obtain additional land leases and amendments, complete the reports identified in the PSAs, and be available to SPS to keep working on the SPS Projects to complete necessary activities to deliver construction ready sites. SPS has the right to terminate the PSAs in the event SPS is unable to obtain necessary regulatory approvals, as regulatory approval is a condition to closing the PSAs. In addition, SPS is authorized to cancel the SPS Projects with minimal financial exposure if regulatory approval(s) are not

obtained. The BOP contracts will be similarly structured.

VII. RISK MANAGEMENT AND COST CONTROLS

2 Q. What topic do you discuss in this section of your testing
--

1

3

4

5

6

7

8

9

10

- A. I discuss construction management techniques and oversight processes that Xcel Energy has developed through experience with other projects, interactions with others in the industry, and work with contractors. In this section, I also describe why these processes are integral to help ensure that the Sagamore and Hale Wind Projects are developed on time and on budget. I further describe the comprehensive risk mitigation and well-developed and deployed cost controls in place, and explain why I am confident the Sagamore and Hale Wind Projects can be constructed within their respective budgets.
- 11 A. Material Risks and Risk Management
- 12 Q. What are the material risks you have identified relating to the construction
- of the Sagamore and Hale Wind Projects?
- 14 A. There are two categories of material risks that SPS needs to manage in constructing the projects: (1) the construction timing risk, and (2) the construction
- cost risk. SPS has plans in place to adequately address each of these risks.

1	Q.	Please describe the construction timing risk regarding PTC qualification and
2		how SPS has planned to help ensure customers receive the benefits.
3	A.	Timing of construction has two aspects, both of which are intended to ensure the
4		SPS Projects receive 100% of the PTC benefits. First, enough turbines were
5		constructed and stored prior to January 1, 2017 to meet the 5% construction cost
6		"safe harbor" requirement per the Internal Revenue Service ("IRS") rules, which
7		ensures that the Sagamore and Hale Wind Projects qualify for 100% PTC
8		requirements.
9		In addition to the construction and storage of turbines, it is important that
10		construction of the SPS Projects be completed to ensure qualification for the full
11		100% PTC benefit. As discussed by Mr. Evans, the IRS will allow four years for
12		projects to be completed (i.e., by December 31, 2020) to qualify for the PTC at
13		100%. To comply with this deadline, the MSA allows for adequate turbines to be
14		supplied to the SPS Projects in both 2019 and 2020 to meet the December 31,
15		2020 commercial operation date deadline.
16	Q.	Does the timing of the construction schedules help ensure the SPS Projects
17		will qualify for 100% PTC benefits?
18	A.	Yes. The construction schedules account for the fact that the late summer and fall
19		of 2018 are very favorable construction periods with respect to weather. By

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

beginning in middle 2018 and completing roads and foundations by late 2018, this scheduling option eliminates possible delays and inefficiencies due to adverse weather during that time period.

Second, the SPS Projects' construction schedules assume the initiation of the sites' preparation work can begin in middle 2018, including foundation construction for the turbines and installing the underground collection system(s) at the same time. This work sequencing maximizes the likelihood of timely completion and also provides a more efficient and lower-cost deployment schedule by eliminating stacking of work and trades. For example, wet weather conditions could result in delays for the road construction crew, which in turn could result in delays to the foundation construction crew if their schedules were 'stacked' or overlapping. By properly sequencing the construction schedules, the sites are less congested and construction crews can work around timing delays more easily and efficiently.

- Q. Will SPS engage in regular meetings to help ensure the SPS Projects are constructed in time to obtain 100% PTC benefits?
- A. Yes. The SPS construction management team plans to meet daily with the BOP contractor in what are typically referred to as "Plan of the Day" ("POD") 18 meetings. These POD meetings identify and address any safety, coordination, or 19

schedule issues in real time. The POD meetings also allow for timely responses and immediate mitigation of any quality related issues on site such as adding protective coverings, or heating foundation areas before and after concrete pours. SPS will also hold summary weekly meetings with the BOP contractor to review safety trends and longer term schedule items.

In addition, monthly management meetings will take place with the BOP contractor and turbine supplier (Vestas) to summarize the status of the work and resolve any commercial issues pending. This extensive contact and communication with contractors is one reason Xcel Energy has been so successful with major capital projects in the past.

Q. Please describe the construction cost risks and their likelihood.

A. As with any major construction project, there is the risk that costs could increase above what has been projected. SPS's analyses and budgeting for both of the SPS Projects has taken this risk into account. The single largest cost component(s) of Sagamore and Hale Wind Projects is the purchase of the wind turbines under the MSA. The MSA is a fixed price contract with little potential for change orders⁵ or other cost increases. Additionally, SPS negotiated the MSA to avoid any

⁵ Change orders are used to make modifications to components, assemblies, associated documentation and other types of product information.

potential schedule delays. As a result, the MSA (and future TSAs) costs are not likely to be subject to any significant cost increase pressure.

Similarly, the purchase prices under the PSAs with Invenergy and NextEra are fixed amounts that are not subject to change orders or cost increases. SPS could potentially incur some downstream consulting fees from Invenergy or NextEra for additional project development support not contemplated in the PSAs or other consulting fees for environmental reviews, land surveying or civil design reviews. However, any such amount would be minor and would not materially change the overall cost profile.

The BOP contract cost could potentially increase depending on various circumstances, but there are also specific milestone requirements and liquidated damages provisions as I discuss later in my testimony. Most notably, if weather or other events delays the construction schedules, construction costs could increase. The amount of any increase in costs would be dependent on the length of the delay.

Finally, some of the other costs identified for the Sagamore and Hale Wind Projects are not under fixed price contracts and could be subject to some increase. However, SPS's assessment of costs includes a modest contingency to account for these potential construction cost increases.

1	Q.	Will Xcel Energy schedule delivery of turbines and construction activities in
2		consideration of construction cost risks?
3	A.	Yes. The TSAs will allow the delivery of turbines in the fourth and first quarters
4		of a year. This timing: (1) allows field construction schedules to be in the
5		summer and fall and turbine erection in the late fall and winter; and (2) means
6		predictable good weather for the construction of roads and foundations. This
7		timing reduces the likelihood of construction cost risks.
8		In addition, cable, collector station(s) and turbine erection will occur in the
9		colder months. These months tend to provide milder wind days, which is a
10		benefit as more extreme wind days can create more risk.
11	Q.	If change orders occur and the SPS Projects fall behind schedule are there
12		techniques and processes SPS can use to gain back time?
13	A.	Yes. For the Sagamore Wind Project, the commercial operation date is a year later
14		than the Hale Wind Project. SPS plans to move the mobilization and field
15		construction work much earlier in the year (i.e., summer/fall of 2020) so that
16		turbine delivery and erection will be late fall and winter. As a result, there is a
17		cushion of time built into the schedule and SPS could work through short weather
18		periods as necessary.

In addition, while SPS has commercial obligations to put the Hale Wind Project in service by June of 2019 and the Sagamore Wind Project by May of 2020, the deadline established by the Internal Revenue Service ("IRS") for the PTC is December 31, 2020. This creates a cushion of time to meet the PTC deadline. In addition, SPS could have Vestas increase turbine commissioning personnel or perform some early pre-commissioning activities so that the turbines can be commissioned more quickly. Both of these approaches could help make up time in the event that construction falls behind schedule.

The BOP contract will also have specific milestones that are the BOP contractor's responsibility to meet these deadlines or, if these deadlines are not met, the BOP contractor will be subject to liquidated damages. Accordingly, there is a significant financial incentive for the BOP contractor to stay on schedule and find ways to make up time if construction falls behind. It is also relevant that the contractors that SPS will seek BOP contract bids from all have significant experience in wind farm construction. Over the years the contractors have developed strategies to make up time and expedite construction when necessary and appropriate to avoid incurring liquidated damages and to stay on schedule. I have a high degree of confidence in these BOP contractors and their ability to meet their deadlines.

1 B. Cost Controls and Reporting

- 2 Q. Does SPS or Xcel Energy have processes and procedures in place to control
- 3 and track project costs?
- 4 A. Yes.

15

16

17

18

19

- 5 Q. Please generally describe these cost controls.
- 6 A. For all of our major projects, SPS first develops a detailed project schedule, a cost 7 analysis report ("CAR") (which serves as a cost tracking tool), monthly cash flow projections, a contracting strategy, labor resource loading strategies, design 8 9 criteria, and a project organization chart. This occurs early in the development 10 phase of our projects, and these tools become the basis for our comprehensive 11 project management process. Throughout construction, SPS regularly revisits and 12 updates these tools and strategies to reflect what is encountered at the site and 13 reported from personnel in the field. This ensures the cost control processes are 14 as up-to-date and robust as possible.

Additionally, SPS utilizes numerous reporting requirements up through the various levels of SPS and Xcel Energy. Any proposed scope changes are carefully evaluated by each project manager and the Director of Regional Capital Projects to help ensure that they are consistent with the original intent of the project. There is no scope change cost threshold to trigger this review process;

rather, all changes are recorded and approved by the project manager and Director of Regional Capital Projects.

A.

Also, each major contract is competitively bid — whether it is for equipment or construction. Bids are evaluated by the project team based on criteria including safety, capital costs, ongoing O&M costs, and the ability to perform the work and scope as required. With regard to evaluating a bidder's ability to perform the work, SPS focuses on the bidder's past experience and safety record. The safety review is an integral piece of our evaluation. After conducting this review, the proposal that offers the best overall value based on a comprehensive evaluation of these criteria is selected by SPS.

Q. Are there any cost control processes in place for turbine fabrication?

Yes. Frequent inspections by the Project teams, including the engineering and quality groups, will be made at fabrication facilities to assure that purchased equipment is fabricated in accordance with the agreed upon technical specifications. These inspections and observations are intended to ensure that the manufacturer is following the requirements of the TSAs, as well as appropriate industry codes and standards. SPS and XES management personnel will monitor construction in the field to verify compliance with specifications and standards.

Invoiced costs are reviewed by the Project teams to assure compliance with contract terms.

Q. Does SPS have ongoing reporting and reviews related to cost controls?

Α.

Yes. A monthly report is generated that outlines the current status of the projects, significant progress achieved, as well as schedule and budget status. These reports contain monthly cost forecasts and compare them to actual costs. The reports also show the overall Project budget and discuss projected changes and adjustments to the overall construction budget. These reports are distributed to the Director of Regional Capital Projects, the Vice President of Engineering and Construction, and me as the Senior Vice President of Energy Supply.

Moreover, monthly review meetings are held with the Director of Regional Capital Projects to conduct a detailed review of safety, the construction budget, and construction schedule. Significant variations in project scope, cost and schedule will be discussed in these meetings. When changes in overall project budgets are identified, a change order will be executed to adjust the respective budget. These changes are then reflected in monthly and overall project cost forecasts. In addition, the Financial Performance Team and president of SPS review the reasons for variations in project monthly cash flow and yearly forecasts on a regular basis.

1	Q.	Are there specific cost control manuals that SPS will use for the Sagamore
2		and Hale Wind Projects?
3	A.	Yes. SPS has a standard CAR used in its major capital projects. The CAR is a
4		compilation of all cost tracking reports needed to effectively manage a major
5		project. This includes, without limitation, the overall detailed cost estimates,
6		monthly variances to expected spend, change order tracker by contract,
7		procurement tracker for status of deliverables, staff resource loading, invoice
8		tracker, and progress trending curves.
9	Q.	Is this reporting and review process and overall cost control methodology
10		similar to processes used by Xcel Energy for other construction projects?
11	A.	Yes. Xcel Energy has used these tools in successfully completing various
12		construction projects. Major examples include the implementation of over \$2
13		billion of construction projects in Colorado in response to the Clean Air-Clean
14		Jobs Act, completing the coal-fired electric generating unit, Comanche 3 and the
15		successful completion of the Jones 3 and Jones 4 combustion turbine projects in
16		SPS. The experience with these projects gave Xcel Energy an opportunity to
17		refine and improve cost control methodologies. Xcel Energy also uses similar
18		tools in all regions to have consistent approaches across all service territories with
19		regard to cost control.

- 1 Q. Is SPS confident that it can deploy the Sagamore and Hale Wind Projects at
- 2 the construction cost estimates when considering the risks you described
- 3 **above?**
- 4 A. Yes.

1	VIII.	SITING, PERMITTING, LAND RIGHTS ACQUISITION FOR THE
2		SAGAMORE AND HALE WIND PROJECTS

3 Q. What is the purpose of this section of your testimony?

10

11

12

13

14

15

16

17

- A. The purpose of this section of my testimony is to describe the siting, permitting
 and land rights acquisition for the Sagamore and Hale Wind Projects. As I
 discuss below, Invenergy and NextEra are required to deliver construction ready
 sites as set forth in the two PSAs it has entered into with SPS.
- Q. Please provide an overview of the siting, permitting, and land rights
 acquisition activities for the Sagamore and Hale Wind Project sites to date.
 - As I discussed earlier, SPS has entered into two similar PSAs with Invenergy and NextEra for the acquisition of "construction ready" wind generation sites at both projects. Per the terms of each PSA, prior to closing, Invenergy and NextEra are responsible for securing local, state, and federal permits, and any other necessary approvals or clearances for completing the development of the wind farms. Invenergy and NextEra are also responsible for obtaining real property interests such as leases, purchase options or fee title necessary to support wind farm development. Included in these land leases are sufficient land rights and permits

⁶ The term "construction ready" is formally defined in the PSA.

	to construct the Gen-Tie lines required to interconnect the Sagamore and Hale
	Wind Project sites to the SPP transmission grid. Local land use permits are the
	most significant permitting requirement associated with the SPS Projects. The
	counties impacted by both the SPS Projects and their respective Gen-Tie lines are:
	(1) for the Hale Wind Project, Hale County, Texas; and (2) for the Sagamore
	Wind Project, Roosevelt County, New Mexico.
Q.	What is your understanding of the status of siting and land rights activities
	for the SPS Projects?
A.	Consistent with the terms of each PSA, Invenergy and NextEra have made
	substantial progress acquiring land rights at both Project sites. Invenergy has two
	siting plans that have been developed to anticipate avoidance of environmentally
	sensitive areas.
	SPS, AWS Truepower, Invenergy and NextEra will also start
	collaborating on "micro-siting" at each site, which involves optimizing the
	specific location of each wind turbine considering local land constraints and
	setbacks, power output and construction costs. This turbine micro-siting process
	in turn will inform the siting of access roads, gathering lines, substations,

I		transmission lines and ancillary facilities. This is an iterative process that will
2		continue as permitting and land acquisition activities progress.
3	Q.	Will SPS need to acquire any permanent easements or land for the Sagamore
4		and Hale Wind Project sites?
5	A.	Yes. Invenergy and NextEra are using a "Wind Lease and Easement Agreement"
6		to secure all land rights necessary for all development activities including wind
7		turbines, overhead and underground electrical distribution, collection,
8		transmission and communication lines, electric transformers, electric substations,
9		roads, wind measurement equipment, and other ancillary facilities, as well as
10		construction activities and uses.
11		Although the Wind Lease and Easement Agreements grant the right to
12		construct Gen Tie lines and substations, the agreements also allow for the
13		possibility for SPS to purchase fee title for property where the collector
14		substations and O&M buildings are located. These rights would more clearly
15		define the location and extent of each facility and avoid the possibility of future
16		title issues.
17		Under each PSA, once Invenergy and NextEra have completed its site
18		development obligations, it will transfer all land rights to SPS.

1	Q.	Once SPS takes equity ownership of the SPS Projects, will it comply with
2		applicable local governments' land use regulations in constructing and
3		operating the projects?
4	A.	Yes.
5	Q.	SPS witness William P. Zawacki references your testimony for support for
6		the estimated O&M lease payments for the projects. How did SPS make
7		these estimates?
8	A.	Lease payments are made for both SPS Projects pursuant to formulas. For the
9		Hale Wind Project, lease payments are made to the Hale Partnership Pool. The
10		payments are made for use of the land, for example, establishment of roads,
11		placement of cables, placement of turbines, transmission lines, etc. To arrive at
12		the annual lease payments owed, the total nameplate generation of the Hale Wind
13		Project (478 MW) is multiplied by a 4.0% fee schedule ⁷ that is then multiplied by
14		8,760 hours, then is multiplied by \$/MWh value from a schedule. The total dollar
15		value creates a "pool" of money that is then paid out to each participating land
16		owner based on the percent of land each one brings to the pool. A \$500/year fee
17		is also paid to each specific land owner that has a Wind Turbine Generator

 $^{^{7}}$ The 4.0% fee schedule escalates over time.

1 ("WTG") specifically located on its land. This fee escalates over time based on a 2 schedule. 3 For the Sagamore Wind Project, a formula is used to determine lease payments. The formula applies dollar amounts for various project items that 4 5 require use of the land. For example, substations, roads, collector substations, and 6 transmission lines. Each specific land owner that has a WTG on its land also gets \$500/year and that escalates over time, as well. 7 8 In addition to the above individual estimates, SPS also added yearly 9 inflation rates to items not specifically escalated in the contracts and summed the 10 total over 25 years. The values for the estimated lease payments along with other 11 O&M payments are shown in Mr. Zawacki's direct testimony.

1		IX. <u>COST COMPARISON</u>
2	Q.	What topic do you discuss in this section of your testimony?
3	A.	In this section of my testimony I discuss the cost comparison with similar wind
4		resources in the market that SPS conducted in evaluating the Sagamore and Hale
5		Wind Projects.
6	Q.	Has SPS compared the construction costs of the Sagamore and Hale Wind
7		Projects to similar wind projects?
8	A.	Yes.
9	Q.	What other specific projects were used in the comparison?
10	A.	The construction costs of the Sagamore and Hale Wind Projects were compared to
11		three other wind projects developed by Xcel Energy affiliates that are currently
12		under construction or were recently placed in service: (1) the Pleasant Valley
13		Wind Project, a 200 MW facility near Hayfield, Minnesota that began operating
14		in 2015; (2) the Border Winds Project, a 150 MW facility near Rolette, North
15		Dakota that also began operating in 2015; and (3) the Courtenay Wind Farm,
16		which is a 200 MW facility near Jamestown, North Dakota that was recently
17		completed in 2016. This comparison was appropriate because there are accurate

1		construction cost data on these wind farms and they are recently completed
2		construction.
3	Q.	Please describe the process used to conduct this comparison and the relevant
4		results.
5	A.	I derived a cost per kW installed (\$/kW) based upon the costs of each wind farm
6		and compared the construction cost estimates of the Sagamore and Hale Wind
7		Projects to these figures. The cost per kW installed of the Sagamore Wind
8		Project, based on the estimated construction cost of \$825 million, is \$1,581/kW
9		installed. The cost per kW installed of the Hale Wind Project, based on the
10		estimated construction cost of \$735 million, is \$1,537/kW installed. This method
11		of using the project nameplate capacity in determining the cost per kW installed is
12		typical in the industry. These costs do not include the allowance for funds used
13		during construction, but do include all other costs.
14	Q.	What were the results of this comparison?
15	A.	A following Table RH-5 shows the results of the comparison.

Table RH-5 Comparative Analysis

Wind Farm	Cost (\$/kW installed)
Pleasant Valley Wind Project	1,680
Border Winds Project	1,764
Courtenay Wind Project	1,465
Sagamore Wind Project	1,581
Hale Wind Project	1,537

Q. What are your conclusions after conducting this comparison to other Xcel

Energy wind projects?

A.

With regard to Xcel Energy's affiliate projects, the construction costs of the Sagamore and Hale Wind Projects are reasonable as compared to all three comparable projects. The Sagamore and Hale Wind Projects construction cost of \$1,581/kW and \$1,537/kW respectively, installed is less than the cost of the Pleasant Valley Wind Project and the Border Winds Project. Although both SPS Projects estimated construction costs are higher than the Courtenay Wind Farm costs, this is in part due to the interconnection costs for the SPP. Thus, my analysis of these costs leads me to conclude that the Sagamore Wind Project construction costs are reasonable in comparison to the costs of these similar projects considering the differences with the interconnection costs and the current market.

Q. Did you conduct any other comparative analysis?

A.

Yes. I also looked more generally for cost information in industry publications. I identified an August 2016 report from the Lawrence Berkeley National Laboratory within the U.S. Department of Energy, which is included with my testimony as Attachment RH-8. This study compiled data on the installed cost of wind power projects in the U.S. from 1997 up to and including 44 projects completed in 2015. For 2015, this data included 5,772 MW of wind power capacity installed in that year (67% of the capacity installed in 2015) and overall, the data set included 789 projects completed in the U.S. totaling 60,032 MW (81% of wind power installed by the end of 2015).

The report derives a capacity-weighted average installed project cost for each year, and the capacity-weighted average installed project cost for 2015 was roughly \$1,690/kW installed. This was slightly lower than 2014, but is \$640/kW less than peak costs in 2009 and 2010. Further, "[e]arly indications from a limited sample of 18 projects (totaling 3.4 GW) currently under construction and

- 1 anticipating completion in 2016 suggest no material change in capacity-weighted
- 2 average installed costs in 2016."8

Table RH-6 Comparative Analysis

Wind Farm		Cost (\$/kW installed)	
Lawrence	Berkeley	National	1,690
Laboratory Report			
Sagamore Wind Project			1,581
Hale Wind Project		1,537	

3

4

6

7

8

9

10

11

12

13

Q. What are your conclusions regarding the comparison to the Lawrence

5 Berkeley National Laboratory Report data?

A. The Lawrence Berkeley National Laboratory information is instructive in the cost comparison. The report caveats that "reported project costs reflect turbine purchase and installation, balance of plant, and any substation and/or interconnection expenses. Data sources are diverse, however, and are not all of equal credibility, so emphasis should be placed on overall trends in the data rather than on individual project-level estimates." Looking at the overall trend, the cost per kW installed of both the Sagamore and Hale Wind Projects are reasonable when compared to the national 2015 average of \$1,690/kW installed.

⁸ Attachment RH-8, at 65.

⁹ Attachment RH-8, at 64-65.

	X. GEN TIE COSTS
Q.	What topic do you discuss in this section of your testimony?
A.	I discuss the Gen Tie lines from the SPS Projects' collector stations to the
	interconnection tie breaker on the transmission grid.
Q.	Are the Gen Tie lines all that are needed for the SPS Projects to be
	interconnected to the SPP transmission system footprint?
A.	No. A connection is still needed from the interconnection tie breaker to the SPP
	transmission system. For the Hale project, this breaker is already installed at the
	TUCO substation. For Sagamore, SPP is analyzing the impact to the system to
	inject power equal to the generator nameplate at the interconnection point to
	evaluate the need for possible network upgrades and required interconnection
	facilities. SPS witness William A. Grant addresses the upgrades necessary to
	allow the generators to connect to the SPP transmission grid.
Q.	How long are the Gen Tie lines for the Sagamore and Hale Wind Projects
	and their associated construction costs?
A.	For the Sagamore Wind Project, SPS estimated the Gen Tie Line to be between 4
	and 5 miles in length and cost approximately \$3.5 million. For the Hale Wind
	Project, SPS estimated Gen Tie Line to be between 12 and 15 miles in length and
	A. Q. Q.

1		cost approximately \$9 million. These costs are included in the project total
2		budget discussed earlier in my testimony.
3	Q.	How did SPS estimate the lengths and costs of the Generation Tie Lines for
4		the Sagamore and Hale Wind Projects?
5	A.	The developers have preferred routes for the Gen Tie lines, as well as preferred
6		locations for the substations. These locations were based on preliminary layouts
7		along with current land leases that are signed. Final sitings will come after the
8		micro siting of the turbines, roads and cable layouts. The cost for the Gen Tie
9		lines were developed based on a review of Gen Tie lines from previous projects.
10	Q.	Earlier you mentioned GIA interconnection costs. Have either of the
11		developers begun the process of having the SPP study what GIA
12		interconnection costs may be required?
13	A.	Yes. As discussed by Mr. Grant, both developers have already begun the process
14		for determining the transmission upgrades needed to interconnect the Sagamore
15		and Hale Wind Projects to the SPP transmission grid.
16	Q.	Are any of the GIA interconnection costs known at this time?
17	A.	Yes. The process is complete for the Hale Wind Project. The cost is a component

5	A.	Yes.
4	Q.	Does this conclude your pre-filed direct testimony?
3		terminate the PSA with Invenergy.
2		Project. If the GIA interconnection costs exceed \$44.4 million, then SPS can
1		not completed its study of the request by Invenergy for the Sagamore Wind

VERIFICATION

STATE OF COLORADO)
) ss
COUNTY OF DENVER)

RILEY HILL, first being sworn on his oath, states:

I am the witness identified in the preceding testimony. I have read the testimony and the accompanying attachments and am familiar with their contents. Based upon my personal knowledge, the facts stated in the testimony are true. In addition, in my judgment and based upon my professional experience, the opinions and conclusions stated in the testimony are true, valid, and accurate.

RILEY HILL

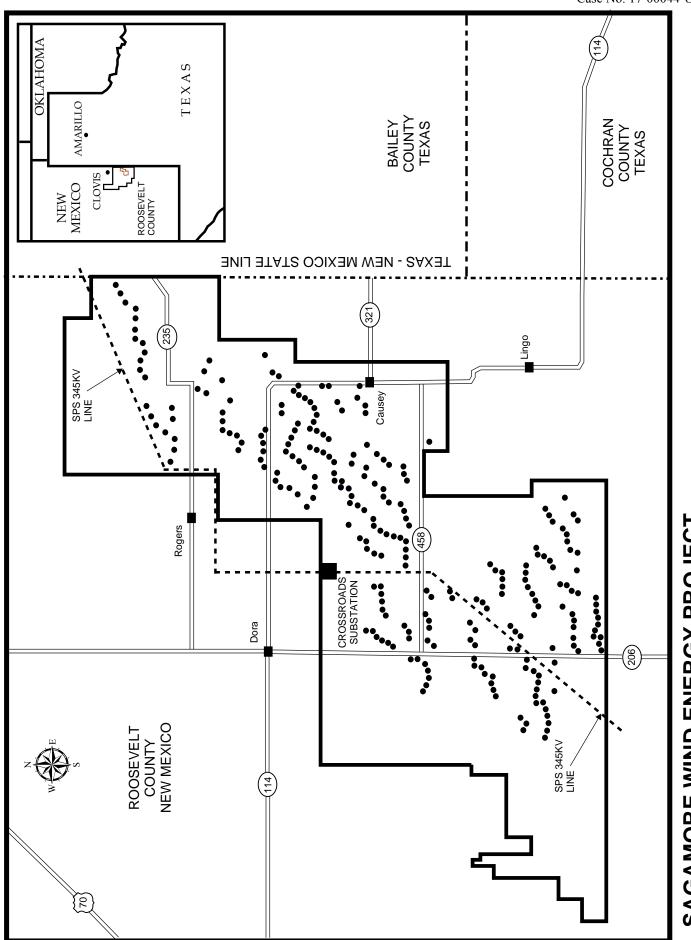
SUBSCRIBED AND SWORN TO before me this 15th day of March 2017.

LISA ANNE SCHWAIG NOTARY PUBLIC - STATE OF COLORADO Notary Identification #20154041264 My Commission Expires 10/20/2019

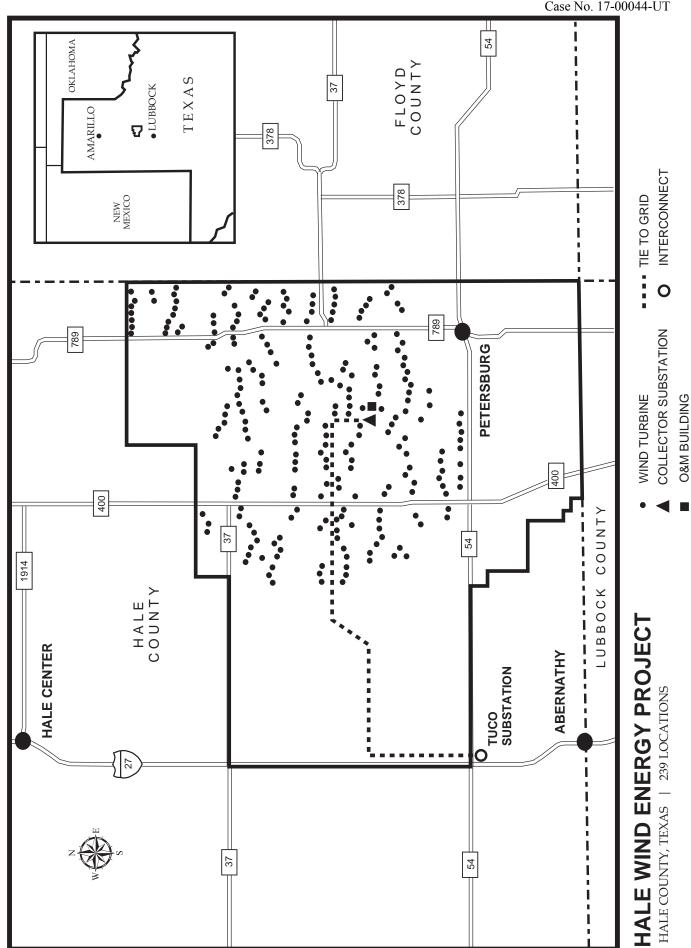
Notary Public, State of Colorado

Jusa Anne Schwaig

My Commission Expires: Octob



SAGAMORE WIND ENERGY PROJECT ROOSEVELT COUNTY, NEW MEXICO | 261 LOCATIONS



Xcel Energy Wind Farm Construction Sequence Photos



1. Road Construction



2. Turbine Foundation

Xcel Energy Wind Farm Construction Sequence Photos



3. Tower Erection



4. Collector Cables

Xcel Energy Wind Farm Construction Sequence Photos



5. Collector Substation



6. Operations & Maintenance Building

Attachment RH-4 Page 1 of 239 Case No. 17-00044-UT

Execution Version

PURCHASE AND SALE AGREEMENT

by, between and among

INVENERGY WIND DEVELOPMENT NORTH AMERICA LLC

as Seller,

SAGAMORE WIND ENERGY LLC,

as the Company,

and

SOUTHWESTERN PUBLIC SERVICE COMPANY

as Buyer

dated as of March 9, 2017

Sagamore Wind Project

Table of Contents

		Page
Article 1 DEFINITIO	ONS AND CONSTRUCTION	1
Section 1.1	Definitions	1
Section 1.2	Rules of Construction	15
Article 2 PURCHAS	E AND SALE AND CLOSING	16
Section 2.1	Purchase and Sale	
Section 2.1 Section 2.2	Purchase Price; Closing Payment; Assumption of Liabilities	
Section 2.2	Closing	
Section 2.3	Closing Deliveries by Seller to Buyer	
Section 2.5	Closing Deliveries by Buyer to Seller	
Section 2.6	Conditions to Closing	
Section 2.7	Termination of Agreement	
Section 2.8	Exclusivity	
	NTATIONS AND WARRANTIES OF SELLER	
Section 3.1	Organization	
Section 3.2	Authority; Enforceability	
Section 3.3	No Conflicts; Consents and Approvals	
Section 3.4	Legal Proceedings	
Section 3.5	Compliance with Laws	
Section 3.6	Brokers	
Section 3.7	Prior Acquisitions and Development Agreements	
Article 4 REPRESEN	NTATIONS AND WARRANTIES OF THE COMPANY AND	
	VIATIONS AND WARRANTES OF THE COMPANY AND	28
Section 4.1	Organization	
Section 4.2	Authority; Enforceability	
Section 4.3	No Conflicts; Consents and Approvals	
Section 4.4	Capitalization	
Section 4.5	Business; Assets	
Section 4.6	Bank Accounts	
Section 4.7	Subsidiaries	31
Section 4.8	Legal Proceedings	31
Section 4.9	Compliance with Laws	
Section 4.10	Assets and Liabilities; No Undisclosed Liabilities	31
Section 4.11	Taxes	31
Section 4.12	Regulatory Status	33
Section 4.13	Contracts	33
Section 4.14	Real Property	34
Section 4.15	Permits	
Section 4.16	Environmental Matters	36
Section 4.17	Intellectual Property	
Section 4.18	Brokers	
Section 4.19	Employees and Labor Matters	37

Table of Contents (continued)

		Page
Section 4.20	Employee Benefits	38
Section 4.21	Wind Data	
Section 4.22	Insurance	
Section 4.23	No Other Agreements to Sell Purchased Assets	
Section 4.24	Sufficient Funds	
Section 4.25	Books and Records	
Article 5 REPRESEN	NTATIONS AND WARRANTIES OF BUYER	38
Section 5.1	Organization	
Section 5.2	Authority; Enforceability	39
Section 5.3	No Conflicts	39
Section 5.4	Legal Proceedings	39
Section 5.5	Brokers	40
Section 5.6	Financial Resources	40
Section 5.7	Acquisition as Investment	40
Section 5.8	Compliance with Laws	40
Article 6 COVENAN	VTS	
Section 6.1	Books and Records	40
Section 6.2	Transfer Taxes	
Section 6.3	Tax Matters	41
Section 6.4	Conduct of the Company Prior to Closing	
Section 6.5	Real Property Purchase Option	
Section 6.6	Development Work	
Section 6.7	Asset Transfer	
Section 6.8	Access to Information	
Section 6.9	Efforts; Consents; Regulatory and Required Seller Approval	48
Section 6.10	Notification of Closing	50
Section 6.11	Public Announcements	50
Section 6.12	Transfer of Permits	50
Section 6.13	Further Assurances.	50
Section 6.14	Schedules	
Section 6.15	Build Out Restrictions	51
	FICATION, LIMITATIONS OF LIABILITY AND WAIVERS	
Section 7.1	Survival	
Section 7.2	Indemnification by Seller	
Section 7.3	Indemnification by Buyer	
Section 7.4	Limitations on Liability	
Section 7.5	Procedures for Third Party Claims	
Section 7.6	Indemnification Procedures	
Section 7.7	Payments of Indemnity Amounts Payable by Buyer	
Section 7.8	Payments of Indemnity Amounts Payable by Seller	
Section 7.9	Exclusive Remedy	57

Table of Contents (continued)

		Page
Article 8 MISCELLA	ANEOUS	57
Section 8.1	Notices	
Section 8.2	Entire Agreement	
Section 8.3	Expenses	
Section 8.4	Disclosure	
Section 8.5	Waiver	60
Section 8.6	Amendment	60
Section 8.7	No Third Party Beneficiary	60
Section 8.8	Assignment; Binding Effect	60
Section 8.9	Headings	61
Section 8.10	Invalid Provisions	61
Section 8.11	Counterparts; Facsimile	61
Section 8.12	Governing Law; Venue; and Jurisdiction	61
Section 8.13	Waiver of Remedies; Legal Fees	
Section 8.14	Specific Performance	63
Section 8.15	Reinstatement	63

EXHIBITS

Exhibit A	Form of Company Assignment Agreement
Exhibit B	Form of Lease
Exhibit C-1	Form of Lease Amendment (Leases)
Exhibit C-2	Form of Lease Amendment (Easements)
Exhibit C-3	Form of Lease Amendment (Sufficient Leases)
Exhibit D	Geotechnical Testing Requirements
Exhibit E	Form of Parent Guaranty

SCHEDULES

1.1–K	Knowledge
1.1-PL	Permitted Liens
2.6(b)(vi)	Liens to be released
2.6(b)(ix)	Required Consents
2.6(b)(xv)	Sufficient Leases
2.6(d)(i)	Title Commitment and Survey Requirements
4.5(d)	Reports
4.6	Bank Accounts
4.10	Undisclosed Liabilities
4.11	Taxes
4.13(a)	Purchased Contracts
4.13(b)	Support Obligations
4.13(g)	Shared Contracts
4.14	Real Property
4.15	Permits
4.16	Environmental Matters
4.21	Wind Data
4.22	Insurance
6.6(b)	Certain Development Work
6.6(a)(iii)	Project Boundary
6.6(a)(iii)(2)	Option Boundary

PURCHASE AND SALE AGREEMENT

This agreement, dated as of March 9, 2017 (this "Agreement"), is made by, between and among Invenergy Wind Development North America LLC, a Delaware limited liability company ("Seller"), Sagamore Wind Energy LLC, a Delaware limited liability company (the "Company"), and Southwestern Public Service Company, a New Mexico corporation ("Buyer").

WITNESSETH:

WHEREAS, the Company is developing the approximately 448 megawatt target nameplate capacity (the "*Expected Nameplate Capacity*") wind farm known as the Sagamore Wind Project located in Roosevelt County, New Mexico, which project for purposes of this Agreement consists solely of having the Site Construction Ready for wind turbine generators (the "*Project*");

WHEREAS, the Company is a direct, wholly-owned subsidiary of Seller; and

WHEREAS, Seller desires to sell to Buyer, and Buyer desires to purchase from Seller, the Shares (as defined below) on the Closing Date (as defined below) on the terms and subject to the conditions set forth in this Agreement.

NOW, THEREFORE, in consideration of the premises and the mutual representations, warranties, covenants and agreements in this Agreement, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby agree as follows:

ARTICLE 1

DEFINITIONS AND CONSTRUCTION

Section 1.1 <u>Definitions</u>. As used in this Agreement, the following capitalized terms have the meanings set forth below:

"1933 Act" means the Securities Act of 1933, as amended.

"Action" means any legal, administrative, arbitral, mediation or other alternative dispute resolution procedure or other action, proceeding, claim, assessment, audit, inquiry or similar investigation before any court, arbitrator or other Governmental Authority.

"Affiliate" means, with respect to any Person, any other Person that directly or indirectly through one or more intermediaries, controls, is controlled by or is under common control with such Person. For purposes of this definition, "control" of a Person means the power, direct or indirect, to direct or cause the direction of the management and policies of such Person whether through ownership of voting securities or ownership interests, by Contract or otherwise.

"Agreement" is defined in the introduction to this Agreement.

"Ancillary Agreements" means the Company Assignment Agreement and the other documents and agreements to be delivered pursuant to this Agreement.

"Assets" of any Person means all assets and properties of every kind, nature, character and description (whether real, personal or mixed, whether tangible or intangible and wherever situated), including the related goodwill, which assets and properties are operated, owned or leased by such Person.

"Assumed Liabilities" means:

- (a) the Permitted Liens;
- (b) those obligations of the Company accruing or arising, or covenants or agreements of the Company to be performed (other than indemnification obligations for matters accruing or arising prior to the Closing Date), from and after the Closing Date, including any such obligations under the Land Contracts, Permits, Permit applications, and other Contracts to which the Company is a party at the time of the Closing (including any liability for Taxes for such Land Contracts, Permits, Permit applications, and other Contracts); and
- (c) any Liability arising from and after the Closing Date with respect to the ownership or operation of the Project, other than Losses for which Buyer is entitled to indemnification pursuant to Section 7.2(a), Section 7.2(b) or Section 7.2(c);

provided that, without in any way broadening the scope of Assumed Liabilities as described in the foregoing provisions of this definition, Assumed Liabilities shall not include:

- (i) any Liability for Taxes of the Company or Seller to the extent attributable to any Pre-Closing Tax Period;
- (ii) any Liability of the Company or Seller for costs and expenses incurred for the purpose of executing and performing this Agreement and the transactions contemplated hereby; or
- (iii) any Liability under the Land Contracts, Permits, Permit applications or Contracts to which the Company is a party at Closing to the extent such Liability, but for breach or default by Seller or the Company or a waiver or extension given to or by Seller or the Company, would or should have been paid, performed or otherwise discharged on or prior to the Closing Date or to the extent such Liability arises out of any such breach or default, waiver or extension given to or by Seller or the Company.

"Bankruptcy Event" shall be deemed to occur, with respect to any Person, if (a) that Person shall commence any case, proceeding or other voluntary action seeking to have an order for relief entered with respect to it, or seeking to adjudicate it bankrupt or insolvent, or seeking liquidation, arrangement, adjustment, winding-up, reorganization, dissolution, composition under the Bankruptcy Law or other relief with respect to it or its debts; (b) such Person shall apply for, or consent or acquiesce to, the appointment of, a receiver, administrator, administrative receiver, liquidator, sequestrator, trustee or other official with similar powers for itself or any substantial

part of its assets; (c) such Person shall make a general assignment for the benefit of its creditors; (d) an involuntary case shall be commenced seeking liquidation or reorganization of such Person under the Bankruptcy Law, or seeking issuance of a warrant of attachment, execution or distraint, or any similar proceedings shall be commenced against such Person under any other applicable law and (i) such Person consents to the institution of the involuntary case against it, (ii) the petition commencing the involuntary case is not timely controverted, (iii) the petition commencing the involuntary case is not dismissed within 60 days of its filing, (iv) an interim trustee is appointed to take possession of all or a portion of the property, and/or to operate all or any part of the business of such Person and such appointment is not vacated within 60 days, or (v) an order for relief shall have been issued or entered therein; or (e) a decree or order of a court having jurisdiction in the premises for the appointment of a receiver, administrator, administrative receiver, liquidator, sequestrator, trustee or other official having similar powers, over such Person or all or a part of its property shall have been entered; or (f) any other similar relief shall be granted against such Person under any applicable Bankruptcy Law, or such Person shall file a petition or consent or shall otherwise institute any similar proceeding under any other applicable law, or shall take any action in furtherance of, or indicating its consent to, approval of, or acquiescence in any of the acts set forth above in this definition; or (g) such Person shall generally not, or shall admit in writing its inability to, pay its debts as they become due.

"Bankruptcy Law" means Title 11, United States Code, and any other existing or future law (or any successor law or statute) of any jurisdiction, domestic (including state and federal) or foreign, relating to bankruptcy, insolvency, reorganization, conservatorship, moratorium or similar law for the relief of debtors.

"Beginning of Construction Guidance" means the guidance issued by the Internal Revenue Service in Notice 2013-29, as clarified by Notice 2013-60, Notice 2014-46, Notice 2015-25, Notice 2016-31 and Notice 2017-04.

"Benefit Plan" means "employee benefit plan," as such term is defined in Section 3(3) of ERISA. Benefit Plans do not include any Multiemployer Plans or any Benefit Plans maintained by any ERISA Affiliate.

"Books and Records" means any and all data; reports; studies; external, non-attorney-privileged correspondence; maps; surveys; and other business records necessary or useful to the development of the Project that are generated or obtained by Seller or the Company.

"Business" means the development of the Project by the Company and Seller, including the Development Work.

"Business Day" means a day other than Saturday, Sunday or any day on which banks located in the State of New Mexico are authorized or obligated to close.

"Buyer" is defined in the introduction to this Agreement.

"Buyer Group" is defined in Section 7.2.

"Claim" means any demand, claim, action, investigation, legal proceeding (whether at law or in equity) or arbitration.

"Closing" means the closing of the transactions contemplated by this Agreement, as provided for in Section 2.3.

"Closing Date" means the date on which Closing occurs.

"Closing Permits" is defined in Section 4.15(b).

"Closing Purchase Price" is defined in Section 2.2(a).

"Code" means the Internal Revenue Code of 1986.

"Company" is defined in the introduction to this Agreement.

"Company Assignment Agreement" means an assignment and transfer of the Shares, substantially in the form annexed as Exhibit A.

"Confidentiality Agreement" means the Mutual Confidentiality Agreement, dated September 22, 2016 between Seller and Buyer.

"Consent" means a consent, approval, authorization, waiver, filing, notice, registration, declaration or similar action of, with or by any Person.

"Construction Ready" means (a) all of the Critical Development Work shall have been completed by Seller pursuant to Section 6.6 to the reasonable satisfaction of Buyer and (b) the representations and warranties set forth in Section 4.5(c) shall be true and correct in all respects.

"Contract" means any legally binding contract, lease, license, evidence of Indebtedness, mortgage, indenture, purchase order, binding bid, letter of credit, security agreement or other legally binding arrangement, whether oral or written, but excludes Permits.

"Contracting Parties" is defined in Section 8.13.

"Critical Development Work" is defined in Section 6.6.

"Data Site" means the electronic documentation site established in connection with the transactions contemplated by this Agreement.

"Default" means, with respect to any Person, any circumstance, event or condition that would constitute, with or without notice or the passage of time or both, a violation, breach, default, conflict with, or give rise to any right of termination, modification, cancellation, prepayment, suspension, limitation, revocation, purchase, re-purchase or acceleration.

"Development Costs" means third party development costs and expenses incurred following the date of this Agreement and prior to the Closing Date in connection with the development of the Project, including accounting, appraisal, consulting, engineering, legal, tax and other professional fees and expenses associated with the development of the Project, including the Development Work (but excluding the negotiation and closing of this transaction), costs incurred under Contracts of the Company and/or Project, including for credit support under any Contracts

of the Project, payments to equipment vendors and payments made in connection with acquiring Real Property Interests, Permits and other Assets. Development Costs shall not include any cost of money or Seller's or its Affiliates' internal overhead costs related to the Project.

"*Designated Representations*" means the representations and warranties contained in Section 3.1 (Organization), Section 3.2 (Authority; Enforceability), Section 4.1 (Organization), Section 4.2 (Authority; Enforceability), Section 4.3(c) and (d) (Conflicts), Section 4.4 (Capitalization), Section 4.7 (Subsidiaries), Section 4.20 (Employee Benefits), Section 5.1 (Organization) and Section 5.2 (Authority; Enforceability).

"Development Work" is defined in Section 6.6.

"DISIS" means the Definitive Interconnection System Impact Study to be performed by SPP, or a consultant acceptable to SPP, identifying the definitive scope and estimated cost of any upgrades that may be required with respect to the interconnection of the Project.

"Dispute Notice" is defined in Section 7.6(b).

"Environmental Claim" means any Claim or Loss arising out of or related to Hazardous Materials, environmental or workplace contamination or pollution, or any violation or alleged violation of Environmental Law.

"Environmental Law" means the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. § 9601 et seq.; the Resource Conservation and Recovery Act, 42 U.S.C. § 6901 et seq.; the Federal Water Pollution Control Act, 33 U.S.C. § 1251 et seq.; the Clean Air Act, 42 U.S.C. § 7401 et seq.; the Toxic Substances Control Act, 15 U.S.C. § 2601 through 2629; the Oil Pollution Act, 33 U.S.C. § 2701 et seq.; the Emergency Planning and Community Right-to-Know Act, 42 U.S.C. § 11001 et seq.; the Bald and Golden Eagle Protection Act (16 U.S.C. §§ 668–668d); the Migratory Bird Treaty Act)16 U.S.C. §§ 703–712); the Safe Drinking Water Act, 42 U.S.C. §§ 300f through 300j; the Occupational Safety and Health Act, 29 U.S.C. § 651 et seq.; the Hazardous Materials Transportation Act, 49 U.S.C. § 5101 et seq.; and all other Laws currently in effect (including implementing regulations promulgated pursuant thereto) of any Governmental Authority having jurisdiction over the assets in question addressing pollution control or protection of Protected Species, the environment, wildlife, plants, natural resources, or human health.

"Equity Interests" means capital stock, partnership, membership or trust interests, shares or units (whether general or limited), and any other interest or participation that confers on a Person the right to receive a share of the profits and losses of, or distribution of assets of, the issuing entity.

"Equity Securities" means (i) Equity Interests, (ii) subscriptions, calls, warrants, options or commitments of any kind or character relating to, or entitling any Person to acquire, any Equity Interests and (iii) securities convertible into or exercisable or exchangeable for Equity Interests.

"ERISA" means the Employee Retirement Income Security Act of 1974.

"ERISA Affiliate" means any entity, trade or business that is a member of a group described in Section 414(b) or (c) of the Code or Section 400l(b)(l) of ERISA that includes Seller,

or that is a member of the same "controlled group" as Seller pursuant to Section 4001(a)(14) of ERISA; provided, however, that the Company will not be considered to be an ERISA Affiliate of Seller.

"Excluded Liabilities" is defined in Section 2.2(d).

"Exclusivity Period" is defined in Section 2.8.

"Expansion" is defined in Section 2.2(a)(i).

"Expected Nameplate Capacity" is defined in the recitals to this Agreement.

"Final Order" means a final order of a court of competent jurisdiction, (i) from which there is no right of appeal to a higher court or (ii) all applicable time periods during which an appeal may be made have expired.

"FPA" means the Federal Power Act, as amended.

"GAAP" means generally accepted accounting principles in the United States of America.

"Generator Interconnection Agreement" means each generator interconnection agreement among the Company, SPP and the applicable transmission system owner for interconnection of the Project to such transmission system owner's system.

"Governmental Authority" means any court, tribunal, arbitrator, authority, agency, commission, official or other instrumentality of the United States or any state, county, city or other political subdivision or similar governing entity, and including any governmental, quasi-governmental or non-governmental body administering, regulating or having general oversight over natural gas, electricity, power or other markets.

"Hazardous Material" means any substance, pollutant, contaminant, chemical, material or waste that is regulated, listed or identified under any Environmental Law, or which is deemed or may be deemed hazardous, dangerous, damaging or toxic to living things or the environment, and shall include, without limitation, any flammable, explosive, or radioactive materials; hazardous materials; radioactive wastes; hazardous wastes; hazardous or toxic substances or related materials; polychlorinated biphenyls; petroleum products, fractions and by-products thereof; asbestos and asbestos-containing materials; medical waste, solid waste, and any excavated soil, debris, or groundwater that is contaminated with such materials.

"Implementation" or "Implement" means the ownership, development, construction, financing, operation and/or maintenance of any Subsequent Wind Farm.

"Indebtedness" means any of the following: (a) any indebtedness for borrowed money; (b) any obligations evidenced by bonds, debentures, notes or other similar instruments; (c) any obligations to pay the deferred purchase price of property or services, except trade accounts payable and other current liabilities arising in the ordinary course of business; (d) any obligations as lessee under capitalized leases; (e) any obligations, contingent or otherwise, under acceptance, letters of credit or similar facilities; and (f) any guaranty of any of the foregoing.

Attachment RH-4 Page 12 of 239 Case No. 17-00044-UT

"*Indemnified Party*" means a Person entitled to be indemnified by another Person pursuant to the terms of this Agreement.

"Indemnifying Party" means a Person required to indemnify another Person pursuant to the terms of this Agreement.

"Indemnity Amount Payable" means any Indemnity Claim Amount which has become an Indemnity Amount Payable in accordance with Article 7, plus interest on such Indemnity Claim Amount at the Interest Rate from the date that is 30 days after it becomes an Indemnity Amount Payable.

"Indemnity Cap" means an amount equal to of the aggregate amount of the Purchase Price.

"Indemnity Claim" means any claim made for indemnification in accordance with Article 7.

"Indemnity Claim Amount" means the amount of Losses claimed in any Notice of Claim, which amount, if not finally determined, may be a good faith estimate of the Losses that may be subject to indemnification pursuant to this Agreement.

"Initial Payment" is defined in Section 2.2(b).

"Intellectual Property" means the following intellectual property rights, both statutory and common law rights, if applicable, to the extent relating to the Project: (a) copyrights, registrations and applications for registration thereof, (b) trademarks, service marks, trade names, slogans, domain names, logos, trade dress, and registrations and applications for registrations thereof, (c) patents, as well as any reissued and reexamined patents and extensions corresponding to the patents, and any patent applications, as well as any related continuation, continuation in part and divisional applications and patents issuing therefrom, (d) trade secrets and confidential information, including ideas, designs, concepts, compilations of information, methods, techniques, procedures, processes and other know-how, whether or not patentable and (e) all studies, assessments, data, reports, records and determinations.

"Interconnection Costs" means all costs and expenses in the aggregate incurred after the date hereof in connection with the DISIS or pursuant to the Generator Interconnection Agreement (including without limitation the posting of security in connection with any of the foregoing). Interconnection Costs shall not include costs of, or incurred in respect of, interconnection study agreements.

"Interest Rate" means the higher of (i) a rate of interest per annum equal to the prime rate (as published in the Wall Street Journal) as in effect from time to time plus basis points and (ii) a rate of interest per annum equal to

"Knowledge" means, when used in a particular representation in this Agreement with respect to Seller, the actual knowledge of the individuals listed on Schedule 1.1-K together with such knowledge as such individuals should have obtained in the ordinary course of their duties.

"Land Contracts" means the Project Leases and all separate options, easements and licenses (other than the Project Leases) executed for purposes of providing the Company or, with respect to the Project, Seller with rights in the nature of an option, easement or license in real property, as amended, modified and/or supplemented to date, individually or collectively as the context requires, in each case, to the extent, and only to the extent, that any of the foregoing cover any real property included within the Project Area.

"Laws" means all laws, statutes, rules, regulations, ordinances, orders, decrees, court decisions, and other pronouncements having the effect of law of any Governmental Authority.

"Lease Amendment" means an amendment to a Project Lease substantially in the form attached hereto as Exhibit C-1 or C-3, as applicable, for Project Leases that contain a leasehold interest in real property or C-2 for Project Leases that contain an easement or right of way interest in real property, as applicable, or such other form that is acceptable to Buyer in its reasonable discretion.

"Leases" means all leases, subleases, easements, right to occupy or use and other arrangements with respect to real property, including, in each case, all amendments, modifications and supplements thereto and waivers and Consents thereunder.

"Liability" means all debts, liabilities, obligations, Contracts and commitments, whether known or unknown, asserted or unasserted, fixed, absolute or contingent, matured or unmatured, accrued or unaccrued, liquidated or unliquidated, due or to become due, whenever or however arising (including, whether arising out of any Contract or tort based on negligence, strict liability or otherwise).

"Lien" means, with respect to any property or other assets of a Person, any lien, charge, claim, community property interest, pledge, mortgage, hypothecation, condition, equitable interest, option, security agreement, deed of trust, encumbrance, easement, encroachment, license, sublicense, right of first refusal, right of first offer, or other restriction of any kind, including any restrictions on use, voting, transfer receipt of income or exercise of any other attribute of ownership.

"Loss" means any and all actual losses, liabilities, amounts paid in settlement, damages, fines, penalties, costs, charges, Taxes, obligations, demands, fees, interest, and expenses (including court costs and reasonable fees of attorneys, accountants and other experts in connection with any Claim).

"Material Adverse Effect" means an event, change, occurrence, circumstance, development or effect, which, individually or when taken together with the effect of all other events or circumstances has had or could reasonably be expected to have a material adverse effect on the business, assets, properties, liabilities, condition (financial or otherwise) or results of operations of the Project or the Company; provided, however, that the following will not be considered when determining whether a Material Adverse Effect has occurred: any change, event, effect or occurrence (or changes, events, effects or occurrences taken together) resulting from (a) any change generally affecting the international, national or regional electric generating, transmission or distribution industry; (b) any change generally affecting the international, national

or regional wholesale or retail markets for electric power; (c) any change generally affecting the wind-generated energy business generally, except to the extent such effect has a materially disproportionate effect on the Company as compared to other similarly situated wind development projects, (d) any change in general regulatory or political conditions, including any engagements of hostilities, acts of war or terrorist activities or changes imposed by a Governmental Authority associated with additional security; (e) any change in any Laws (except as provided in the last sentence of this definition), GAAP or industry standards; (f) any change in the financial condition or results of operation of the Company caused solely by the sale of the Company to Buyer from Seller; (g) any change in the financial, banking, or securities markets (including any suspension of trading in, or limitation on prices for, securities on the New York Stock Exchange, American Stock Exchange, or Nasdaq Stock Market) or any change in the general national or regional economic or financial conditions; (h) any actions required to be taken pursuant to or in accordance with this Agreement; or (i) the announcement or pendency of the transactions contemplated hereby. For the avoidance of doubt, any change in the business, financial condition or results of operations of Buyer, or any of its Affiliates or any change in any business transaction between Buyer or any of its Affiliates will not be considered when determining whether a Material Adverse Effect has occurred. Notwithstanding anything herein to the contrary, a Material Adverse Effect shall be deemed to have occurred if a Tax Law Change has occurred.

"Multiemployer Plan" means any "multiemployer plan" within the meaning of Section 4001(a)(3) of ERISA previously or currently covering any employees.

"NMPRC" means the New Mexico Public Regulation Commission or any successor agency thereto.

"Nonparty Affiliates" is defined in Section 8.13.

"*Notice of Claim*" means a notice by one Party to the other of a claim for indemnification under and made in accordance with Article 7.

"Option" is defined in Section 2.2(a)(ii).

"Option Boundary" means the land boundary identified on Schedule 6.6(a)(iii)(2).

"Ordinary course of business" means, with respect to any Person, its ordinary course of business consistent with its past practice.

"Organizational Documents" means, with respect to any Person, the articles or certificate of incorporation or organization and by-laws, the limited partnership agreement, the partnership agreement or the limited liability company agreement, member control agreement, trust agreement, or other organizational documents of such Person, including (i) any shareholder, voting trust or similar Contract and (ii) any that are required to be registered or kept in the place of incorporation, organization or formation of such Person and which establish the legal personality or governance of such Person.

"Other Seller Entity" or "Other Seller Entities" means, with respect to Seller each Person that is (i) a direct or indirect Affiliate of Seller or (ii) directly or indirectly twenty percent (20%) or more owned by Seller, an Affiliate of Seller, or any combination of Seller or Affiliates of Seller,

assuming for purposes of this test that any and all options, warrants and other rights held directly or indirectly by Seller or any Affiliate of Seller and convertible or potentially convertible into an equity interest in such Person have been exercised or converted, as applicable.

"Prior Acquisition Agreement" means that certain Asset Purchase Agreement dated November 10, 2016 between Highway Wind, LLC and the Company and all side letters related thereto, in each case as amended, restated, supplemented or otherwise modified from time to time.

"*Parcel*" means up to three (3) proposed sites for the Real Property Purchase Options provided by Buyer in accordance with Section 6.5, and ranked by Buyer in order of priority.

"Parties" means collectively, Buyer and Seller.

"Permits" means all licenses, permits, certificates of authority, authorizations, approvals, registrations, franchises and similar consents and orders issued or granted by a Governmental Authority, including the Site Permit.

"Permitted Lien" means (a) any Lien for Taxes not yet due and payable; (b) any Lien that, individually or in the aggregate, (i) is of a nature commonly existing with respect to properties of a similar character and (ii) does not interfere in any material respect with the Company's ability to locate, interconnect, erect, construct and operate, on the Site, a Sufficient Project; (c) the terms and conditions of the Purchased Contracts and the Permits listed on Schedule 4.15(i); (d) any Lien that is (or will be) released on or prior to Closing; (e) restrictions on transfer of the Equity Interests of the Company under any applicable securities Law or the Organizational Documents of the Company; (f) (i) as of any date prior to the Closing Date, any Lien identified in any Title Commitment delivered to Buyer, and (ii) as of the Closing Date and any date thereafter, any Lien identified in any Title Commitment reasonably satisfactory to Buyer in accordance with Section 2.6(d), (g) any other Lien created or permitted with the written consent of Buyer in its sole discretion, and (h) the matters identified on Schedule 1.1-PL.

"*Person*" means any natural person, corporation, general partnership, limited partnership, limited liability company, proprietorship, other business organization, trust, union, association or Governmental Authority.

"Pre-Closing Asset Transfer" is defined in Section 6.7.

"Pre-Closing Period" is defined in Section 6.3(a).

"*Pre-Closing Tax Period*" means (i) all Tax periods ending on or before the Closing Date and (ii) the portion of any Straddle Period ending on the Closing Date.

"Proforma Title Policy" means a pro forma American Land Title Association (ALTA) 2006 Owner's Policy of Title Insurance, committing to insure the Real Property Interests in the amount of the fair market value of the Project or other amount specified by Buyer and issued by the Title Company, subject only to the Permitted Liens and otherwise in form and substance satisfactory to Buyer and providing for full extended coverage over all general title exceptions contained in such policy and the following special endorsements: owner's comprehensive, zoning, survey, access, contiguity, non-imputation, tax parcel, subdivision, deletion of mandatory

arbitration, location, environmental, utility facility, development of minerals, successor-in-interest and Sears endorsement and all applicable ALTA 36 Series energy project-specific endorsements and any other endorsements reasonably requested by Buyer and such additional affirmative coverage as Buyer may reasonably request, in each case, that is available in the State of New Mexico.

"*Project*" is defined in the recitals to this Agreement.

"Project Area" shall mean the area of land consisting of Real Property Interests within the Project Boundary as set forth in the map delivered by Seller to Buyer pursuant to and in accordance with $\underline{\text{Section } 6.6(a)(xx)}$.

"Project Boundary" shall mean the land boundary identified on Schedule 6.6(a)(iii), as such map may be updated from time to time in accordance with this Agreement.

"Project Leases" means all Leases of real property within the Project Area, including but not limited to (a) wind leases or easements executed in favor of the Company or Seller for purposes of creating a leasehold and/or easement interest in such real property; (b) easements for collection cable, crane path and access road routes executed in favor of the Company or Seller; and (c) electrical transmission line easement or access easement or right-of-way in favor of the Company or Seller.

"Project Area Trigger Event" means that Buyer has concluded, acting reasonably and in good faith, that (and notified Seller in writing that) the Project Area delivered pursuant to Section 6.6(a)(xx) has resulted in, or will result in: (i) an increase by more than of the length of Buyer's collection system for the Project as measured in lineal feet, (ii) an increase by more than of the length of Buyer's roads for the Project as measured in lineal feet, (iii) a reduction of more than of the Project's net capacity factor, or (iv) an increase by more than the levelized cost of energy in respect of the Project; provided that no Project Area Trigger Event shall exist pursuant to clause (i), (ii) or (iii) above so long as, based on the net impact of all changes, the levelized cost of energy in respect of the Project does not increase; and provided further that Seller may in good faith dispute the existence of any Project Area Trigger Event.

"Protected Species" means all species and their associated habitat protected by the Endangered Species Act, 16 U.S.C. § 1531 et seq., the Migratory Bird Treaty Act 16 U.S.C § 703 et seq., the Bald and Golden Eagle Protection Act 16 U.S.C § 668 et seq., and applicable state and local counterparts, and their implementing regulations and guidance documents.

"PUCT" means the Public Utility Commission of Texas or any successor agency thereto.

"PUHCA" means the Public Utility Holding Company Act of 2005, as amended.

"Purchase Price" is defined in Section 2.2(a)(i).

"Purchased Assets" is defined in Section 4.5(d).

"Purchased Contracts" is defined in Section 4.13(a).

Attachment RH-4 Page 17 of 239 Case No. 17-00044-UT

"Real Property Interests" means the real property interests created under the Land Contracts and, if applicable, the Real Property Purchase Options.

"Real Property Purchase Options" is defined in Section 6.5.

"Reduced Nameplate Capacity" is defined in Section 2.2(a)(ii).

"*Release*" means any release, spill, emission, leaking, pumping, injection, deposit, pouring, emptying, leaching, dumping, disposal or discharge of any Hazardous Materials into the environment or workplace, and otherwise as defined in any Environmental Law.

"Reports" means the reports and studies identified on Schedule 4.5(d).

"*Representatives*" means, as to any Person, its officers, directors, partners, members, and employees, counsel, accountants, financial advisors and consultants.

"Required Consents" is defined in Section 2.6(b)(ix).

"Schedules" means the disclosure schedules to this Agreement delivered pursuant to Section 6.14.

"Seller" is defined in the introduction to this Agreement.

"Seller Group" is defined in Section 7.3.

"Shared Contracts" is defined in Section 4.13(g).

"Shares" means 100% of the Equity Interests in the Company.

"Site" means the site on which the Sagamore Wind Project will be constructed in Roosevelt County, New Mexico with (subject to Xcel's exercise of the Option) at least the Expected Nameplate Capacity, which Site, as of the Closing Date, consists of the Real Property Interests.

"Site Permit" means approval of the Project site location by the NMPRC pursuant to NMSA 1978, S. 62-9-3.

"SPP" means the Southwest Power Pool, Inc., or its successors.

"State Regulatory Approval" means the following approvals, if requested by Buyer pursuant to this Agreement, from the following Governmental Authorities on the same terms and conditions requested by Buyer (including in each case subject to any supplement or other modifications to any such request as contemplated by Section 6.9(b) and any additional or modified terms and conditions reasonably satisfactory to Buyer: (i) the written approval of the NMPRC and the PUCT for Buyer, or Affiliate of Buyer, to acquire (e.g., purchase), own, construct, operate, and maintain the Project, and, in the initial proceedings requesting those approvals, for ratemaking principles and treatment, to be applied in future ratemaking proceedings, to be established providing for the Buyer or its Affiliate to recover the full costs of the Project through Buyer's base rates and/or rate riders, including (a) any costs associated with a return on any

potential deferred tax asset that is created through accelerated depreciation and/or production tax credits and (b) any costs for the period between the date the Project begins commercial operation and the date that these costs of the Project are included in Buyer's base rates and/or rate riders; and (ii) in the initial proceedings requesting the approvals described in (i), the NMPRC and the PUCT to provide approval of any affiliated transaction approvals requested by Buyer that are directly related to the development, construction, operation, maintenance, or ownership of the Project.

"Straddle Period" means a taxable period beginning before and ending after the Closing Date.

"Subsequent Purchase Price" is defined in Section 2.2(a)(i).

"Subsequent Wind Farm" means any wind farm of which any wind turbine is located or proposed to be located within of any wind turbine included in, or proposed to be included in, the Project.

"Sufficient Lease Amendment" means, with respect to a Project Lease to which Exhibit C-1 is applicable, all of the amendments therein except the amendments in numbered paragraphs 3 and 11 therein are included in the executed Lease Amendment, and with respect to a Project Lease to which Exhibit C-2 is applicable, all of the amendments therein except the amendments in numbered paragraphs 3, 9, 11 and 12 therein are included in the executed Lease Amendment.

"Sufficient Project" means (x) a total of two hundred twenty four (224) 2.0-megawatt wind turbines with an aggregate nameplate capacity of not less than the Expected Nameplate Capacity in a reasonably contiguous manner or (y) if Buyer exercises the Option, a total of one hundred forty nine (149) 2.0-megawatt wind turbines with an aggregate nameplate capacity of not less than the Reduced Nameplate Capacity in a reasonably contiguous manner, a number of alternate sites equal to the sum of (x) 5 for each 200 megawatts plus (y) for any remainder of megawatts exceeding the nearest achieved multiple of 200 megawatts, the product of (a) 5 multiplied by (b) the quotient of such remainder divided by 200 (but such product shall always be rounded up to the next whole number) for wind turbines that are reasonably contiguous to such planned turbine sites, in each case, consistent with and in accordance with all Laws, the Site Permit and prudent wind industry practices, and the ability to locate each of the following on the Real Property Interests in no particular manner: substations, collection circuits, an operations and maintenance building, transmission lines (that can service the Project), and other windpower-related facilities, in each case, consistent with and in accordance with all Laws, the Site Permit and prudent wind industry practices; provided that, in any event, a Sufficient Project shall not exist if the Project Area delivered pursuant to Section 6.6(a)(xx) causes a Project Area Trigger Event.

"Survey" means a survey of the real property covered by the Land Contracts certified to Buyer and the Title Company, in form and substance reasonably acceptable to Buyer, sufficient for the Title Company to provide survey coverage in any title policy issued in accordance with the Proforma Title Policy, and in compliance with the "2016 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys" jointly established and adopted by the American Land Title Association and the National Society of Professional Surveyors effective February 23, 2016 showing and including optional items 3, 4, 6(b), 7(a), 7(c), 8, 11, 13, 14, 16, 17, 18 and 19 and

disclosing the location of all improvements, plottable easements, encroachments, roadways, utility lines, set back lines and other matters shown customarily on such windpark surveys, and showing access affirmatively to public streets and roads, and certified by a surveyor licensed in the State of New Mexico reasonably satisfactory to the Title Company and Buyer.

"Support Obligations" means, collectively, each guaranty, letter of credit, indemnity, performance or surety bond or similar credit support arrangement issued by or for the account of Seller or any of its respective Affiliates, solely in relation to the Project.

"Tax" or "Taxes" means any federal, state, local or foreign income, gross receipts, ad valorem, sales and use, employment, social security, disability, occupation, property, severance, value added, transfer, capital stock, excise, withholding, premium, occupation or other taxes, levies or other like assessments, customs, duties, imposts, charges surcharges or fees imposed by or on behalf of any Governmental Authority, including any interest, penalty thereon or addition thereto.

"Tax Authority" means, with respect to any Tax, the governmental entity or political subdivision thereof that imposes such Tax, and the agency (if any) charged with the collection of such Tax for such entity or subdivision.



"*Tax Representations*" means the representations and warranties contained in Section 4.11 (Taxes).

"*Tax Return*" means any report, form, claim for refund, return, statement or other information (including any amendments) required to be supplied to any Tax Authority with respect to Taxes, including information returns, any amendments thereof or schedule or attachment thereto

"Third Party Claim" is defined in Section 7.5(a).

"*Threshold*" is defined in Section 7.4(c).

"Title Commitment" means an American Land Title Association (ALTA) 2006 Commitment for Title Insurance to be prepared by the Title Company for each parcel of real property covered by the Land Contracts and, if applicable, the Real Property Purchase Options, showing all Liens disclosed in the official records of Roosevelt County, New Mexico and that sets out the real estate legal description and the record title holder and also describes all mortgages, judgments, tax liens and other liens, Taxes, estates, life estates and other reservations by will or conveyance, all Liens of record as disclosed in the official records of Roosevelt County, New Mexico (including easements and government regulations), and other proceedings affecting title (together with a legible copy of all such underlying documents, including all maps and plats).

"*Title Company*" means Chicago Title Insurance Company or such other title company as agreed to by the Parties.

"*Transfer Taxes*" means all transfer, sales, use, goods and services, value added, documentary, stamp duty, gross receipts, excise, transfer and conveyance Taxes and other similar Taxes, duties, fees or charges.

"Treasury Regulations" means the regulations promulgated under the Code, by the Treasury, as such regulations may be amended from time to time. All references herein to specific sections of the regulations shall be deemed also to refer to any corresponding provisions of succeeding regulations, and any reference to temporary regulations shall be deemed also to refer to any corresponding provisions of final regulations.

"Update" is defined in Section 6.14.

"Wind Data" means any and all wind speed data and other relevant wind characteristics data included, or included by reference, on <u>Schedule 4.21</u> of this Agreement, or in the possession or control of Seller or any of its Affiliates in respect to the Project, along with all supporting documentation.

Section 1.2 Rules of Construction.

(a) All article, section, subsection, schedule and exhibit references used in this Agreement are to articles, sections, subsections, schedules and exhibits to this Agreement unless otherwise specified. The exhibits and schedules attached to this Agreement constitute a part of this Agreement and are incorporated in this Agreement for all purposes.

- (b) If a term is defined as one part of speech (such as a noun), it will have a corresponding meaning when used as another part of speech (such as a verb). Unless the context of this Agreement clearly requires otherwise, words importing the masculine gender will include the feminine and neutral genders and vice versa. The words "includes" or "including" will mean "including without limitation," the words "hereof," "hereby," "herein," "hereunder" and similar terms in this Agreement will refer to this Agreement as a whole and not any particular Section or article in which such words appear. The terms "will" and "shall" have the same meaning. Any reference to a Law includes any amendment thereof or any successor thereto and any rules and regulations promulgated thereunder. Any reference to a Contract will be to that Contract as it may have been amended, modified, supplemented or restated prior to the date hereof. Currency amounts referenced in this Agreement are in U.S. Dollars.
- (c) Whenever this Agreement refers to a number of days, such number will refer to calendar days unless Business Days are specified. Whenever any action must be taken hereunder on or by a day that is not a Business Day, then such action may be validly taken on or by the next day that is a Business Day. For determining any period of time, "from" means "including and after," "to" means "to but excluding" and "through" means "through and including."
- (d) Each Party acknowledges that it and its attorneys have been given an equal opportunity to negotiate the terms and conditions of this Agreement and that any rule of construction to the effect that ambiguities are to be resolved against the drafting Party or any similar rule operating against the drafter of an agreement will not be applicable to the construction or interpretation of this Agreement.
- (e) All accounting terms used herein and not expressly defined herein will have the respective meanings given such terms under GAAP.
- (f) Whenever this Agreement states that any document has been "made available," unless otherwise expressly provided herein, that means the document was available in the Data Site prior to the date such statement is effective (or otherwise delivered to Buyer or any of its Affiliates prior to the date such statement is effective).

ARTICLE 2

PURCHASE AND SALE AND CLOSING

Section 2.1 <u>Purchase and Sale</u>. On the terms and subject to the conditions set forth in this Agreement, on the Closing Date, Buyer shall purchase from Seller, and Seller shall sell to Buyer, all of the Shares held by Seller free and clear of all Liens (other than those restrictions on transfer arising under securities laws generally).

Section 2.2 Purchase Price; Closing Payment; Assumption of Liabilities.

(a) The purchase price for the purchase and sale described in Section 2.1 shall be an amount equal to $\frac{1}{2}$ per megawatt of nameplate capacity of the Project (e.g., $\frac{1}{2}$ if the aggregate nameplate capacity is equal to

the Expected Nameplate Capacity or if the aggregate nameplate capacity is equal to the Reduced Nameplate Capacity) (the "Closing Purchase Price").

Unless Buyer has previously exercised the Option, at any time prior (i) to May 1, 2017, Seller may provide written notice (together, if necessary, with an updated Project Boundary map) to Buyer that the expected nameplate capacity of the Project exceeds the Expected Nameplate Capacity (but in no case in an amount to exceed 522 megawatts in the aggregate) pursuant to a determination mutually agreed by Seller and Buyer of such expected nameplate capacity, which in any case shall be consistent with the definition of Sufficient Project (the "Expansion"). Subject to Buyer's agreement with and, if applicable, the Parties' finalization of the new Project Boundary map submitted by Seller pursuant to the preceding sentence, Buyer may accept or reject in writing the Expansion in its reasonable discretion and, if it accepts the Expansion, shall, subject to Section 2.2(a)(ii), pay to Seller, in addition to the Closing Purchase Price, an amount equal to per megawatt of nameplate capacity for each megawatt above the Expected Nameplate Capacity, up to a maximum of megawatts. Buyer shall pay per megawatt of nameplate capacity for any megawatt (x) above the number of megawatts ultimately used as the basis for determining the Closing Purchase Price plus the Expansion purchase price and (y) that is constructed on the Real Property Interests as long as the commercial operation date of such additional megawatt occurs prior to the earlier of (A) the date that is three (3) years following the commercial operation date of the Project and (B) the date that either Buyer or any of its Affiliates ceases to own the Purchased Assets (the "Subsequent Purchase Price" and together with the Closing Purchase Price and the Expansion purchase price, the "Purchase **Price**"). Notwithstanding anything to the contrary contained herein, the Purchase Price shall not include any reimbursement from Buyer to Seller of any Interconnection Costs or unused study costs pursuant to Section 6.6(a)(i). In the event Buyer accepts the Expansion, the new map of the Project Boundary agreed to by the Parties in accordance with the foregoing (if applicable) shall be attached hereto as, and replace the then existing, Schedule 6.6(a)(iii) and shall be the Project Boundary hereunder.

(ii) Notwithstanding anything herein to the contrary, if Buyer has the right to terminate this Agreement pursuant to Section 2.7(a)(x), Buyer may, in lieu of such termination and in Buyer's sole discretion (the "Option"), reduce the nameplate capacity (including after an Expansion has been accepted by Buyer) of the Project to 298 megawatts (the "Reduced Nameplate Capacity") by providing to Seller written notice of its exercise of such Option. If Buyer exercises the Option, Seller shall demonstrate to Buyer's reasonable satisfaction that the net capacity factor of the Project with the Reduced Nameplate Capacity is at least as high as the net capacity factor of the Project would have been with the Expected Nameplate Capacity, and such demonstration shall be deemed to be a condition to the satisfaction of Section 2.6(b)(xiii). If Buyer does not exercise the Option within ten (10) Business Days after Buyer's right to terminate this Agreement pursuant to Section 2.7(a)(x), Buyer shall be deemed to have irrevocably waived its right to exercise the Option in respect of such termination event (but without prejudice to its right to exercise the Option in respect of a subsequent termination event under Section 2.7(a)(x)). In the event Buyer elects the Option, the Option Boundary shall be attached

hereto as, and replace the then existing, <u>Schedule 6.6(a)(iii)</u> and shall be the Project Boundary hereunder.

(b) Buyer shall pay to Seller by wire transfer of immediately available funds
(to such account or accounts as Seller will have notified Buyer of no later than two (2)
Business Days prior to the date of such payment) an amount equal to
(the "Initial Payment") payable as follows (i)
on the date that is five (5) Business Days after the date
hereof, and (ii) unless this Agreement has been terminated,
on September 30, 2017. If this Agreement is terminated
prior to the Closing Date pursuant to:

- (A) Section 2.7(a)(ii)(A) or Section 2.7(a)(xii), then Seller shall, within five (5) Business Days of such termination, pay to Buyer by wire transfer of immediately available funds an amount equal to the Initial Payment paid to Seller; or
- (B) Section 2.7(a)(iv), Section 2.7(a)(v), Section 2.7(a)(vi), Section 2.7(a)(vii), Section 2.7(a)(viii), Section 2.7(a)(x) or Section 2.7(a)(x), then Seller shall, within five (5) Business Days of such termination, pay to Buyer by wire transfer of immediately available funds an amount equal to the Initial Payment paid to Seller less the sum of (x) and (y) any Development Costs actually incurred by Seller following the date hereof (in no case shall such sum be less than \$0.00).

Concurrent with the signing of this Agreement, ("Seller Guarantor") has provided a guaranty to Buyer in the form attached as Exhibit E hereto guaranteeing Seller's repayment of the Initial Payment to Buyer if required pursuant to this Section 2.2(b).

- (c) At the Closing, Buyer shall pay to Seller by wire transfer of immediately available funds (to such account or accounts as Seller will have notified Buyer of no later than two (2) Business Days prior to the Closing Date) an amount equal to the Closing Purchase Price, less the Initial Payment. Buyer shall pay to Seller any Subsequent Purchase Price within five (5) Business Days of the commercial operation date of the megawatt(s) of nameplate capacity giving rise to such Subsequent Purchase Price.
- (d) Except for Assumed Liabilities and other Taxes that are not yet due and payable (without limiting Seller's indemnification obligations pursuant to Section 7.2(e)) as of the Closing Date, the Company shall not be obligated to pay, perform or otherwise discharge or be responsible or liable with respect to, (a) any Liabilities relating to the Project or any present or former developer, owner or operator of the Project incurred prior to the Closing Date (including any Liability with respect to the Prior Acquisition Agreement), whether or not associated with, or arising from, any of the Purchased Assets, and whether fixed, contingent or otherwise, known or unknown, or (b) any other Liabilities whenever incurred described in clauses (i) (iii) of the definition of Assumed Liabilities (collectively, the "Excluded Liabilities").

- Section 2.3 <u>Closing.</u> The Closing will take place at the offices of Orrick, Herrington & Sutcliffe LLP, 1301 McKinney Street, Suite 4100, Houston, Texas, or by remote electronic exchange of documents (by facsimile, .pdf, e-mail, or other form of electronic communication) on the later to occur of (a) three (3) Business Days after the date that all of the conditions to the Closing set forth in Section 2.6 (other than those conditions which, by their terms, are to be satisfied or waived at the Closing, but subject to the satisfaction or waiver of such conditions) shall have been satisfied or waived by the Party entitled to waive the same, and shall be effective at the actual time of Closing, or (b) at such other time, place and date as the Parties may agree in writing. All actions listed in Section 2.4 or 2.5 that occur on the Closing Date will be deemed to occur simultaneously at the Closing. The Closing will be deemed to be effective as of 11:59:59 p.m. Central Time on the Closing Date.
- Section 2.4 <u>Closing Deliveries by Seller to Buyer</u>. At the Closing, Seller shall deliver to Buyer:
 - (a) an executed counterpart by Seller of the Company Assignment Agreement;
- (b) a certification of non-foreign status in the form prescribed by Treasury Regulation Section 1.1445-2(b) with respect to Seller;
- (c) written resignations of all officers and members of the board of managers of the Company;
- (d) an executed counterpart by Seller of each other Ancillary Agreement to be executed and delivered at the Closing to which Seller is a party;
- (e) a copy or copies of all agreements or other documents duly executed by Seller or any of its Affiliates and the Company necessary to effect the assignment to and assumption by the Company of the Purchased Assets;
 - (f) the Closing deliverables described in Section 2.6(b) below; and
 - (g) copies of the Required Consents.
- Section 2.5 <u>Closing Deliveries by Buyer to Seller</u>. At the Closing, Buyer shall deliver to Seller the following:
 - (a) an executed counterpart by Buyer of the Company Assignment Agreement;
 - (b) the Closing deliverables described in Section 2.6(c) below; and
- (c) an executed counterpart by Buyer of each other Ancillary Agreement to be executed and delivered at the Closing to which Buyer is a party.

Section 2.6 <u>Conditions to Closing.</u>

- (a) The obligations of the Parties to effect the Closing are subject to the satisfaction prior to the Closing of the following conditions:
- (i) No Governmental Authority shall have instituted any Actions to restrain, prohibit or otherwise challenge the legality or validity of the transactions contemplated herein that has not been dismissed or otherwise resolved in a manner that does not materially adversely affect such transactions, and no Final Order shall be in effect that restrains or prohibits the consummation of such transactions.
- (ii) The State Regulatory Approval and the Closing Permits (including the Site Permit) shall have been obtained and are in full force and effect and not subject to appeal.
- (b) The obligation of Buyer to effect the Closing is subject to the satisfaction at or before Closing of all of the following conditions, any one or more of which may be waived by Buyer in writing, in Buyer's sole discretion:
- (i) each of the Designated Representations and the Tax Representations will be true and correct in all respects, and each of the other representations and warranties of Seller contained in this Agreement shall be true and correct in all material respects (other than such representations and warranties qualified by materiality or Material Adverse Effect, which shall be true and correct in all respects), in each case on and as of the Closing Date as though made on and as of the Closing Date;
- (ii) Seller shall have performed, and complied with, in all material respects all covenants and agreements required by this Agreement to be performed, and complied with, by Seller on or before the Closing Date;
- (iii) Seller shall have delivered to Buyer a certificate from a duly authorized officer of Seller, dated the Closing Date and executed by such officer, in a form reasonably acceptable to Buyer, certifying the items in Section 2.6(b)(i) and Section 2.6(b)(ii);
- (iv) Seller shall have delivered (or caused to be delivered) to Buyer, the Closing deliverables described in Section 2.4 above;
- (v) Seller shall have delivered to Buyer a current Certificate of Good Standing as to the Company;
- (vi) Seller shall have delivered to Buyer copies acceptable to Buyer of documentation releasing all Liens set forth on <u>Schedule 2.6(b)(vi)</u> from the Company and/or Project Assets other than Permitted Liens;
- (vii) Seller shall have delivered a copy, certified by the Secretary of Seller and the Company, of resolutions of Seller and the Company authorizing and approving the transactions contemplated hereby;

- (viii) no Material Adverse Effect shall have occurred since the date of this Agreement;
- (ix) Seller shall have obtained all Consents required in connection with the transactions contemplated by this Agreement that are listed on <u>Schedule 2.6(b)(ix)</u> (the "*Required Consents*");
- (x) Seller shall have decommissioned and removed all meteorological towers from the Site, in compliance in all material respects with all applicable Contracts (including Land Contracts), applicable Laws, the Site Permit and prudent wind industry practices;
- (xi) (a) the Pre-Closing Asset Transfer, if any, shall have been completed by Seller pursuant to Section 6.7, including obtaining all consents required to consummate the Pre-Closing Asset Transfer, (b) the Company shall not have sold, transferred or otherwise disposed of any Purchased Assets, except as otherwise permitted by this Agreement, and (c) the Purchased Assets shall not be subject to any Liens other than Permitted Liens;
- (xii) Seller shall have complied with the obligations set forth in Section 2.6(d) in all respects;
 - (xiii) the Project shall be Construction Ready;
- (xiv) Seller shall have delivered to Buyer a fully executed estoppel and release agreement from Highway Wind, LLC in a form reasonably acceptable to Buyer and pursuant to which the counterparty(ies) thereto (i) certify that all amounts payable to such counterparty under the Prior Acquisition Agreement have been paid in full, (ii) certify that the Company is not in breach or default of the Prior Acquisition Agreement, (iii) make representations and warranties that are standard for a document of this type, and (iv) irrevocably and unconditionally release and forever discharge Buyer, the Company and all of Buyer's Related Parties from any and liabilities, obligations, causes of action, costs and expenses arising under any theory of contract, tort, breach of duty, strict liability, contribution, unjust enrichment, or any other theory of liability of any jurisdiction, whether known or Unknown Claims (as such concept is contemplated in Section 6.15(c)) and of any nature whatsoever (including negligence or gross negligence but excluding Fraud), and regardless of when the same arose or arises under or in respect of the Prior Acquisition Agreement, the Company or the Project; and
- (xv) Seller shall have delivered to Buyer a fully executed Sufficient Lease Amendment from each Person that is party to any Project Lease for which the matters included in the forms of the amendments attached hereto as <u>Exhibit C-1</u> or <u>C-2</u>, as applicable, apply; <u>provided</u>, that notwithstanding the foregoing, no Lease Amendment shall be required under this Agreement for any of the Project Leases listed on Part 1 of <u>Schedule 2.6(b)(xv)</u> or executed Project Leases in the form of <u>Exhibit B</u>; except that that Seller agrees to use commercially reasonable efforts to attempt to obtain and deliver to Buyer a Lease Amendment (a) in the forms of the amendments attached hereto as <u>Exhibit</u>

- <u>C-1</u> or <u>C-2</u>, as applicable, containing all of the amendments included therein; and (b) in the form of the amendment attached hereto as <u>Exhibit C-3</u> for the Project Leases listed on Part 1 of <u>Schedule 2.6(b)(xv)</u> if any of such Project Leases listed on Part 1 of <u>Schedule 2.6(b)(xv)</u> require a curative amendment as described in <u>Section 2.6(d)</u> of this Agreement.
- (c) The obligation of Seller to effect the Closing is subject to the satisfaction at or before Closing of all of the following conditions, any one or more of which may be waived by Seller in writing, in Seller's sole discretion:
- (i) each of the representations and warranties of Buyer contained in this Agreement shall be true and correct in all material respects (other than such representations and warranties qualified by materiality, which shall be true and correct in all respects), in each case on and as of the Closing Date as though made on and as of the Closing Date;
- (ii) Buyer shall have performed, and complied with, in all material respects all covenants and agreements required by this Agreement to be performed, and complied with, by Buyer on or before the Closing Date;
- (iii) Buyer shall have delivered to Seller a certificate from a duly authorized officer of Buyer, dated the Closing Date and executed by such officer, in a form reasonably acceptable to Seller, certifying the items in Section 2.6(c)(i) and Section 2.6(c)(ii);
- (iv) Buyer shall have delivered (or caused to be delivered) to Seller, the Closing deliverables described in Section 2.5 above; and
- (v) Buyer shall have paid the Closing Purchase Price (less the Initial Payment) in full to Seller.

(d) <u>Title Commitment; Survey; Title Policy.</u>

As soon as reasonably possible after the date hereof, Seller shall (i) deliver, or cause to be delivered, to Buyer the Title Commitment and the Survey. The Title Commitment and Survey shall be prepared and revised from time to time in accordance with the procedures and requirements set forth on Schedule 2.6(d)(i). Seller and Buyer agree to use good faith efforts to endeavor to deliver, review, respond and take actions with respect to obtaining a final Title Commitment and Survey consistent with their respective responsibilities as set forth on the timeline and procedures set forth on Schedule 2.6(d)(i); provided, however, that failure of Seller or Buyer to perform any responsibility set forth on Schedule 2.6(d)(i) by the date provided thereon shall not result in a default by either Party under this Agreement. Upon Seller's receipt of a reasonably complete and comprehensive Title Commitment and Survey covering the Real Property Interests, Seller shall use commercially reasonable efforts to deliver to Buyer within sixty (60) days thereafter a schedule of Seller's proposed curative actions to the state of title reflected by the Title Commitment and Survey as determined by Seller would be required in accordance with prudent wind industry practices for a Construction Ready Site. Buyer shall use commercially reasonable efforts to raise matters to which Buyer objects within sixty (60) days after the date on which Seller has delivered its proposed curative actions.

- (ii) Seller shall use commercially reasonable efforts to cause completion of all proposed curative actions on Seller's schedule delivered to Buyer pursuant to Section 2.6(d)(i) above and the cure of Buyer's objections in a manner acceptable to Buyer on or before the Closing. Buyer shall have the right to raise any objection with respect to any new matters not previously reflected or referenced on or reasonably ascertainable from the Title Commitment or Survey, or other revisions thereto, including cure of objections, upon Buyer receiving each revised Title Commitment and/or revised Survey from time to time provided by Seller.
- (iii) On or before the Closing, the Title Commitment and the Survey shall be reasonably satisfactory to Buyer in form and substance, including, without limitation, addressing matters required to comply with Section 2.6(d)(iv) below. For the avoidance of doubt, any matter reflected or referenced on the Title Commitment (including any exception documents) or the Survey not constituting a Permitted Lien under clauses (a), (b), (c), (d), (e), (g), and (h) of the definition of Permitted Lien and objected to by Buyer shall be an item that is not reasonably satisfactory to Buyer and Seller shall cause the cure of the same in a manner reasonably acceptable to Buyer on or before the Closing Date, and any matter reflected or referenced on the Title Commitment (including any exception documents) or the Survey constituting a Permitted Lien under clauses (a), (b), (c), (d), (e), (g), and (h) of the definition of Permitted Lien shall be an item that is reasonably satisfactory to Buyer and Seller shall not be required to cause the cure of the same.
- (iv) At Closing, Seller shall cause the Title Company to deliver the Proforma Title Policy, and deliver to the Title Company such items as are reasonably necessary for the delivery an American Land Title Association (ALTA) 2006 Owner's Policy of Title Insurance in the form of the Proforma Title Policy, including, without limitation, affidavits necessary for the Title Company to delete any standard exceptions (including, without limitation, the so-called "gap" exception), but not including any premiums with respect to such American Land Title Association (ALTA) 2006 Owner's Policy of Title Insurance, which shall be Buyer's obligation hereunder. Seller shall pay for the Survey and the Title Commitment (and any amendments, updates and supplements thereto) and all recording charges and expenses incurred in connection with recording any Land Contract (or amendments or memoranda thereof) and any curative documents necessary to satisfy the requirements of this Section 2.6(d).

Section 2.7 Termination of Agreement.

- (a) This Agreement may be terminated before Closing as follows:
 - (i) by mutual written consent of the Parties;
- (ii) (A) by Buyer if Seller or Seller Guarantor suffers a Bankruptcy Event, and (B) by Seller if Buyer suffers a Bankruptcy Event;
- (iii) by either Seller or Buyer if the Closing shall not have occurred on or prior to June 30, 2018 for any reason whatsoever except to the extent the Closing shall

have been delayed by a material breach of this Agreement by the Party seeking to terminate the Agreement;

- (iv) by Buyer if the State Regulatory Approval has not been obtained on or prior to March 31, 2018 provided that Buyer shall not have any right to terminate this Agreement pursuant to this clause (iv) after such date;
- (v) by Buyer if the Site Permit does not contain terms and conditions reasonably satisfactory to Buyer, which termination right must be exercised by Buyer on or prior to the date that is 5 Business Days following receipt of the final Site Permit and Buyer shall not have any right to terminate this Agreement pursuant to this clause (vi) after such date:
- (vi) by Buyer, if any condition in Section 2.6(a) or Section 2.6(b) becomes incapable of fulfillment at the Closing;
- (vii) by Buyer, if a fact, matter, condition, event or circumstance first disclosed in an Update from Seller has had or could reasonably be expected to have a Material Adverse Effect; provided, that (i) Buyer has given Seller at least sixty (60) days' prior notice of the intent to terminate and Seller has not cured such Material Adverse Effect during such sixty (60) day period, and (ii) such event or occurrence was not caused by Buyer;
- (viii) by Seller, if any condition in Section 2.6(a) or Section 2.6(c) becomes incapable of fulfillment at the Closing;
- (ix) by Seller, if a fact, matter, condition, event or circumstance first disclosed in an Update from Buyer has had or could reasonably be expected to have a Material Adverse Effect; provided, that (i) Seller has given Buyer at least sixty (60) days' prior notice of the intent to terminate and Buyer has not cured such Material Adverse Effect during such sixty (60) day period, and (ii) such event or occurrence was not caused by Seller;
- (x) by Buyer, upon written notice to Seller of such termination and the lapse of the period for Seller to give a notice under clause (y) of the proviso below, if the Interconnection Costs as reflected in the aggregate in the:
 - (A) last final DISISs pertaining to the Project exceed an aggregate amount equal to a rate of kilowatt multiplied by the expected capacity for the Project as contemplated in the final DISISs or final form Generation Interconnection Agreement, as applicable; or
 - (B) the final forms of the Generator Interconnection Agreement exceed (A) an aggregate amount equal to a rate of per kilowatt multiplied by the expected capacity for the Project as contemplated in the final forms of Generation Interconnection Agreement or (B) the cost thereof as estimated in

the last final DISISs but only to the extent the per kilowatt rate in the last final DISISs exceeds per kilowatt, whichever is the greater amount;

provided, that:

- (x) any notice of termination by Buyer under this Section 2.7(a)(x) shall be given, if at all, on or before ten (10) Business Days after Buyer's receipt of the last final DISISs (for a termination under clause (A) above), or on or before ten (10) Business Days after Buyer's receipt of the final forms of the Generator Interconnection Agreement (for a termination under clause (B) above), and if the termination notice is not given by the applicable date Buyer shall be deemed to have irrevocably waived its right to terminate this Agreement under clause (A) or (B) above, as applicable; and
- (y) if Buyer gives a termination notice under clause (A) or (B) above, Seller shall have the right, but not the obligation, to notify Buyer, within ten (10) Business Days after receipt of Buyer's termination notice, that Seller agrees to bear 100% of that portion of the Interconnection Costs that are in excess of (1) an aggregate amount equal to a rate of per kilowatt multiplied by the expected capacity for the Project as contemplated in the final DSISs or final form Generation Interconnection Agreement, as applicable, in the case of a termination under clause (A) above or (2) the amount described in clause (B) above, in the case of a termination under clause (B) above, and if Seller gives such notice Buyer's termination notice shall be deemed withdrawn, Buyer's right to terminate this Agreement under clause (A) or (B), as applicable, shall be deemed irrevocably waived and this Agreement shall not terminate;

(xi) [reserved];

- (xii) by Buyer if Seller is in material breach or violation of any provision of this Agreement; provided, that Buyer (i) has given Seller at least sixty (60) days' prior notice of the violation or breach and Seller has not cured such violation or breach in all material respects during such sixty (60) day period, and (ii) has not waived such condition in writing; or
- (xiii) by Seller if Buyer is in material breach or violation of any provision of this Agreement; provided, that Seller (i) has given Buyer at least sixty (60) days' prior notice of the violation or breach and Buyer has not cured such violation or breach in all material respects during such sixty (60) day period, and (ii) has not waived such condition in writing.
- (b) Notwithstanding any term in this Section 2.7, a Party will not have the right to terminate this Agreement if the failure to satisfy any condition to the Closing or consummate the transactions contemplated in this Agreement resulted from the material breach by such Party of any of its representations, warranties, covenants or agreements herein, or if such Party is otherwise in material breach of this Agreement.

(c) In the event of the termination of this Agreement as provided in this Section 2.7, this Agreement shall be of no further force or effect and there shall be no Liability to any Party hereunder in connection with this Agreement or the transactions contemplated by this Agreement; provided, however that nothing herein, including Section 2,2(b), shall relieve any Party from liability or damages resulting from any breach of this Agreement prior to the effective date of termination; provided, further that the obligations of the parties set forth in this Section 2.7(c), Article 8 (including, in each case, the definitions of the terms set forth in Section 1.1) and the Confidentiality Agreement shall survive any such termination and shall be enforceable hereunder.

Section 2.8 Exclusivity. From and after the date of execution and until Closing or this Agreement is otherwise terminated in accordance with its terms ("Exclusivity **Period**"), Seller and Buyer shall work exclusively with each other in good faith to consummate the transactions contemplated by this Agreement. During the Exclusivity Period, Seller shall not, and will cause its Representatives and Affiliates not to, directly or indirectly, initiate, solicit or respond to the submission of, or enter into any negotiations in respect of, any indication of interest, proposal or offer from any Person relating to any (a) merger or consolidation with or into, (b) except as otherwise expressly permitted by this Agreement, acquisition or purchase of any material Asset of, or any equity or debt interest in, (c) except as otherwise expressly permitted by this Agreement, lease or disposition of any material Asset of or relating to, or (d) similar transaction, business combination or investment involving any portion of, the Company, the Business, the Project or the Shares (any of the transactions described in clauses (a) through (d), a "Third Party Acquisition"). For the avoidance of doubt, a Third Party Acquisition shall include any response to a request for proposal, bid or similar request from any Person (including Buyer and its Affiliates) involving any aspect of the Business, the Project or the Shares. Immediately upon execution of this Agreement, Seller shall, and shall cause its Representatives and Affiliates to, discontinue any and all existing discussions or negotiations with any Person other than Buyer and its Affiliates and Representatives regarding a Third Party Acquisition.

ARTICLE 3

REPRESENTATIONS AND WARRANTIES OF SELLER

Seller hereby represents and warrants to Buyer that each and all of the following representations and warranties set forth in this Article 3 (as modified by the applicable section of the Schedules, subject to Section 6.14) are true and correct as of the date of this Agreement and as of the Closing Date (except for such representations and warranties that speak as of a specific date, in which case such representations and warranties are true and correct as of such date):

Section 3.1 <u>Organization</u>. Seller is a limited liability company validly existing and in good standing under the Laws of the State of Delaware. Seller is duly qualified or licensed to do business in each other jurisdiction where the actions to be performed by it under this Agreement make such qualification or licensing necessary, except in those jurisdictions where the failure to be so qualified or licensed would not have a material adverse effect on Seller's ability to perform its obligations under this Agreement.

- Section 3.2 <u>Authority; Enforceability</u>. Seller has all requisite limited liability company power and authority to execute and deliver this Agreement and the Ancillary Agreements to which Seller is a party, to perform its obligations hereunder and thereunder and to consummate the transactions contemplated hereby and thereby. The execution and delivery by Seller of this Agreement and the Ancillary Agreements to which Seller is a party, and the performance by Seller of its obligations hereunder and thereunder, have been duly and validly authorized by all necessary limited liability company action. This Agreement has been, and each Ancillary Agreement to which Seller is a party has been, duly and validly executed and delivered by Seller and constitutes the legal, valid and binding obligation of Seller enforceable against Seller in accordance with its terms, except as the same may be limited by bankruptcy, insolvency, reorganization, fraudulent conveyance, arrangement, moratorium or other similar Laws relating to or affecting the rights of creditors generally, or by general equitable principles.
- Section 3.3 <u>No Conflicts; Consents and Approvals</u>. The execution and delivery by Seller of this Agreement and the Ancillary Agreements to which Seller is a party and the performance by Seller of its obligations under this Agreement and the Ancillary Agreements to which Seller is a party do not:
- (a) result in a violation of or a breach of any of the terms, conditions or provisions of the Organizational Documents of Seller;
- (b) result in a Default or require Consent (that is required as of any date this representation is made and has not been obtained or made as of such date) under any Contract to which Seller or the Company is a party or by which any Assets of Seller or the Company are bound;
- (c) (i) result in a violation or breach of any term or provision of any Law, Permit or order applicable to Seller or the Company, (ii) require any Consent (that is required as of any date this representation is made and has not been obtained or made as of such date) of any Governmental Authority under any applicable Law, or (iii) result in the creation or imposition of any Lien on Seller or the Company or the Assets of any of the foregoing.
- Section 3.4 <u>Legal Proceedings</u>. Seller has not been served with notice of any Claim, no Claim is pending and, to Seller's Knowledge, none is threatened in writing against Seller or the Company, which seeks a writ, judgment, order, injunction or decree restraining, enjoining or otherwise prohibiting or making illegal any of the transactions contemplated under this Agreement or any Ancillary Agreements to which Seller or the Company is a party.
- Section 3.5 <u>Compliance with Laws</u>. Seller currently is in compliance in all material respects with all Laws and orders of all Governmental Authorities applicable to it or the Purchased Assets.
- Section 3.6 <u>Brokers</u>. Seller does not have any liability or obligation to pay fees or commissions to any broker, finder or agent with respect to the transactions contemplated by this Agreement for which Buyer or the Company could become liable or obligated.

Section 3.7 Prior Acquisitions and Development Agreements.

- (a) As of the Closing Date, there are no amounts due or that may become due and owing by Seller, Buyer, or the Company in connection with any prior development or acquisition agreement or related transaction with respect to the Company's development of the Project or acquisition of the Project or the Company or with respect to Seller's acquisition of the Project of the Company; and
- (b) there are no build-out restrictions, restrictions on competition, change in control restrictions, direct or indirect equity ownership transfer restrictions, rights of first refusal, rights of first offer, or other similar rights that bind Seller in respect of the Company or the Project, the Company or any of the Company's current or future direct or indirect owners.

ARTICLE 4

REPRESENTATIONS AND WARRANTIES OF THE COMPANY AND SELLER

Seller and Company hereby, jointly and severally, represent and warrant to Buyer that each and all of the following representations and warranties set forth in this Article 4 (as modified by the applicable section of the Schedules, subject to Section 6.14) are true and correct as of the date of this Agreement and as of the Closing Date (except for such representations and warranties that speak as of a specific date, in which case such representations and warranties are true and correct as of such date):

Section 4.1 <u>Organization</u>. The Company is a limited liability company validly existing and in good standing under the Laws of the State of Delaware, and has all requisite limited liability company power and authority to conduct its business as it is now being conducted and to own, lease and operate its Assets. The Company is duly qualified or licensed to do business and is in good standing in each jurisdiction in which the ownership or operation of its Assets make such qualification or licensing necessary, except in those jurisdictions where the failure to be so duly qualified or licensed would not have a Material Adverse Effect. Seller has made available to Buyer all of the Organizational Documents of the Company as in effect on the date of this Agreement.

Section 4.2 <u>Authority; Enforceability</u>. The Company has all requisite limited liability company power and authority to execute and deliver this Agreement and the Ancillary Agreements to which the Company is a party, to perform its obligations hereunder and thereunder and to consummate the transactions contemplated hereby and thereby. The execution and delivery by the Company of this Agreement and the Ancillary Agreements to which the Company is a party, and the performance by the Company of its obligations hereunder and thereunder, have been duly and validly authorized by all necessary limited liability company action. This Agreement has been, and each Ancillary Agreement to which the Company is a party has been, duly and validly executed and delivered by the Company and constitutes the legal, valid and binding obligation of the Company enforceable against the Company in accordance with its terms, except as the same may be limited by bankruptcy, insolvency, reorganization, fraudulent conveyance,

arrangement, moratorium or other similar Laws relating to or affecting the rights of creditors generally, or by general equitable principles.

- Section 4.3 <u>No Conflicts; Consents and Approvals</u>. The execution and delivery by Seller or the Company of this Agreement and the Ancillary Agreements to which Seller or the Company is a party, the performance by Seller or the Company of its obligations hereunder and thereunder and the consummation of the transactions contemplated hereby and thereby and the taking of any action contemplated to be taken by Seller or Company hereunder or thereunder (including the Pre-Closing Asset Transfer) do not:
- (a) result in a violation or breach of any of the terms, conditions or provisions of the Organizational Documents of the Company;
- (b) (i) result in a violation or breach of any term or provision of any Law, Permit or order applicable to the Company or any of the Purchased Assets; (ii) require the Consent (that is required as of any date this representation is made and has not been obtained or made as of such date) of any Governmental Authority under any applicable Law; or (iii) cause a Default, or require the Consent (that is required as of any date this representation is made and has not been obtained or made as of such date) of any Person, under any Purchased Contract, Land Contract or Permit;
- (c) result in the imposition or creation of any Lien other than Permitted Liens, on any Asset of the Company or the Business; or
- (d) result in the imposition or creation of any Lien on the Equity Interests of the Company.

Section 4.4 Capitalization.

- (a) Seller is the direct owner, holder of record, and beneficial owner of, and has good and marketable title to, the Shares free and clear of all Liens and restrictions on transfer other than those arising pursuant to or as described in this Agreement, the Organizational Documents of the Company, or applicable securities Laws.
- (b) The Shares are duly authorized, validly issued, fully paid and non-assessable, were issued in compliance with all applicable Laws, and were not issued in violation of, and are not subject to, any preemptive rights or any other agreement, arrangement or commitment to which Seller or the Company is party.
- (c) Except for the Shares, there are no outstanding Equity Securities of the Company. The Company has not granted to any Person any agreement or option, or any right or privilege capable of becoming an agreement or option, for the purchase, subscription, allotment or issue of any unissued interests, units or other securities (including convertible securities, warrants or convertible obligations of any nature) of the Company. None of the Equity Securities of the Company are subject to any voting trust, member or partnership agreement or voting agreement or other agreement, right, instrument or understanding with respect to any purchase, sale, issuance, transfer,

repurchase, redemption or voting of any Equity Securities of the Company, other than the Organizational Documents of the Company.

Section 4.5 Business; Assets

- (a) The Business is the only business that has even been or is currently carried on by the Company.
- (b) The Company has good, valid and marketable title to, or rights by Contract or other agreement to use, all of its Assets free and clear of all Liens (except for Permitted Liens).
- (c) As of the Closing, the Company will own or have rights by Contract to use all Assets and Permits necessary to locate, interconnect, erect and construct, on the Site, a Sufficient Project (other than ministerial Permits that are not necessary prior to Closing), including the Project Leases and Land Contracts sufficient for ingress and egress to and from a public right of way to allow for such activities.
- (d) As of the Closing, Seller or its Affiliates will have assigned, conveyed and transferred to the Company all of Seller's and such Affiliates' right, title and interest in and to all of the following Assets owned by Seller or its Affiliates or in which Seller or its Affiliate has any interest whatsoever free and clear of all Liens, other than Permitted Liens (collectively, the "*Purchased Assets*"), to the extent related to the Project:
 - (i) the Wind Data;
 - (ii) the Purchased Contracts, including the Land Contracts;
- (iii) all rights of Seller and Seller's Affiliates, related in any material respect to the Company or the Project, and all rights of the Company to interconnection queue positions and interconnection studies and reports;
 - (iv) the Permit applications and Permits;
 - (v) the Intellectual Property Rights;
 - (vi) the material Books and Records:
 - (vii) the Reports;
- (viii) any material Project layouts prepared by or on behalf of Seller or its Affiliates;
 - (ix) the Survey; and
- (x) ESRI GIS shape files of the project map with leased lands, setback and exclusion boundaries, met tower locations, collection line layout, any associated

transmission line route(s) and proposed turbine, operations and maintenance building and substation locations; and

- (xi) any other Assets owned by Seller or its Affiliates or in which Seller or its Affiliates has any interest whatsoever that are material to the Project.
- (e) Except for the Prior Acquisition Agreement, the Purchased Assets are the only Assets that are owned or have ever been owned by the Company.
- Section 4.6 <u>Bank Accounts</u>. <u>Schedule 4.6</u> sets forth a list of the names and locations of banks, trust companies and other financial institutions at which the Company maintains accounts of any nature or safe deposit boxes and the names of all persons authorized to draw thereon, make withdrawals therefrom or have access thereto.
- Section 4.7 <u>Subsidiaries</u>. The Company does not have any Subsidiaries or own Equity Securities in any Person.
- Section 4.8 <u>Legal Proceedings</u>. No Claim is pending against, and to Seller's Knowledge, none has been threatened in writing (a) against the Company, (b) affecting the Company, the Purchased Assets or the Business or (c) seeking a writ, judgment, order, injunction or decree restraining, enjoining or otherwise prohibiting or making illegal any of the transactions contemplated by this Agreement.
- Section 4.9 <u>Compliance with Laws</u>. Each of the Company and, with respect to the Project, Seller currently is in compliance in all material respects with all Laws and orders of all Governmental Authorities applicable to it, the Business and the Purchased Assets, and neither Seller nor the Company has received any notification indicating any violation of such Laws and orders. The representations and warranties contained in this Section do not apply to Tax matters (which are governed exclusively by Section 4.11), regulatory matters (which are governed exclusively by Section 4.12), Permits (which are governed exclusively by Section 4.16), Intellectual Property matters (which are governed exclusively by Section 4.17), employment matters (which are governed exclusively by Section 4.19), or employee benefit matters (which are governed exclusively by Section 4.20).
- Section 4.10 <u>Assets and Liabilities; No Undisclosed Liabilities</u>. Except for (i) Liabilities set forth on <u>Schedule 4.10</u> or (ii) Assumed Liabilities and other Taxes that are not yet due and payable, the Company has no Liabilities as of the Closing Date.

Section 4.11 <u>Taxes</u>:

Except as set forth on Schedule 4.11:

(a) The Company is and has been since formation treated for federal income tax purposes as a disregarded entity.

- (b) The Company has timely filed all Tax Returns, if any, required to be filed with Tax Authorities, and all Taxes required to be paid or withheld by the Company have been timely paid or withheld as required by Law.
- (c) Seller is not currently the beneficiary of or subject to any extension of time within which to file any Tax Returns or for the assessment or collection of any Tax with respect to the Company or the Project. The Company has not waived any statute of limitations in respect of Taxes or agreed to any extension of time with respect to a Tax assessment or deficiency.
- (d) Seller has made available to Buyer true and complete copies of all Tax Returns, if any, of the Company or otherwise related to the Project, and no Tax Returns of the Company have been audited or are currently the subject of audit.
- (e) No Tax Returns with respect to the Company have been audited or examined by any Tax authority. There are no ongoing or pending or threatened in writing Tax audits, examinations, claims, assessments or proposed deficiencies against the Company.
- (f) No Tax authority in a jurisdiction where the Company does not file a Tax Return has made a claim or assertion in writing, or threatened in writing, that the Company or Project is or may be subject to Tax by such jurisdiction.
- (g) The Company is not a party to a tax allocation or tax sharing agreement or tax indemnity or similar arrangement.
- (h) The Project has not benefited from any government grants, tax-exempt financing, subsidized energy financing or other federal tax credits within the meaning of section 45(b)(3) of the Code.
- (i) The Company has not entered into a closing agreement pursuant to Section 7121 of the Code (or any similar provision of state, local or foreign law).
- (j) The Company has not engaged in any "reportable transaction" as defined in Treasury Regulation Section 1.6011-4(b) or any transaction under a similar provision of state, local or foreign Tax law.
- (k) No private letter ruling or other ruling has been requested or received from any Tax authority with respect to the Company or the Project.
- (l) The Company has no liability for the Taxes of any Person (i) under Treasury Regulation Section 1.1502-6 (or any similar provision of state, local or foreign law), (ii) as a transferee or successor, or (iii) by Contract.
- (m) No power of attorney is currently in effect on behalf of the Company with respect to any Taxes.

- (n) Neither the Seller nor the Company (or any Affiliate thereof) has taken any action that would cause any of the assets of the Company to be subject to the alternative depreciation system within the meaning of Code Section 168(g) or to be treated as tax-exempt use property within the meaning of Code Section 168(h), nor are any of the assets of the Company so considered.
- (o) Neither the Seller, the Company nor to Seller's Knowledge any Person has elected to claim the production tax credit under Section 45 of the Code or the energy investment tax credit pursuant to Section 48 of the Code with respect to the Project. Neither the Seller, the Company nor to Seller's Knowledge any Person has applied for a grant with respect to the Project, or any portion thereof, from the U.S. Treasury Department under Section 1603 of Division B of the American Recovery and Reinvestment Act of 2009, as amended, and no such grant has been received with respect to the Project.
- (p) Construction of the Project did not begin before January 1, 2016, within the meaning of the Beginning of Construction Guidance.
- (q) No power sales contract of the Company is described in Code Section 45(e)(7).

Section 4.12 <u>Regulatory Status</u>. To Seller's Knowledge, neither Seller nor the Company is subject to regulation as a "public utility" under the FPA, a "public-utility company" as defined under PUHCA, an "electric utility" as defined in Section 31.002(6) of the Texas Public Utility Regulatory Act, a "public utility" as defined in Section 62-3-39G) of the New Mexico Statutes, or any other state statutes, regulations or other legal authority defining regulated public utilities under New Mexico or Texas law, in each case, taking into account the current state of development activities by the Company and Seller as of the date of this Agreement. The Company is not a "holding company" as defined under PUHCA. Seller either is not a holding company as defined under PUHCA or is a holding company that is entitled to the exemptions and waivers set forth at 18 C.F.R. § 366.3(a). The representations and warranties in this Section 4.12 and Section 4.5(c) are Seller's sole representations and warranties regarding energy regulatory matters, except for Permits (which are governed by Section 4.15).

Section 4.13 Contracts.

- (a) Schedule 4.13(a) sets forth a list of the Contracts to which the Company is a party or by which its Assets are bound or to which Seller or any Seller Affiliate is a party to the extent related primarily to the Business (collectively, the "*Purchased Contracts*"); provided, the Prior Acquisition Agreement shall be paid in full on or before the Closing Date as reflected in the estoppel and release agreement required by Section 2.6(b)(xiv) and shall not constitute a Purchased Contract for purposes of this Agreement.
 - (b) Schedule 4.13(b) sets forth a list of the Support Obligations.
- (c) Seller has made available to Buyer true, correct and complete copies of all Purchased Contracts and Support Obligations, including all material amendments, waivers or modifications thereto.

- (d) Each of the Purchased Contracts and the Support Obligations is in full force and effect and constitutes a legal, valid and binding obligation of the Company or, prior to the Closing, Seller or any Seller Affiliate, as applicable, and, to Seller's Knowledge, of the other parties thereto.
- (e) Neither the Company nor Seller or any Seller Affiliate is in breach or default under any Purchased Contract or Support Obligation and, to Seller's Knowledge, no other party to any of the Purchased Contracts or Support Obligations is in breach or default thereunder. No event has occurred that (with or without notice, lapse of time or both) could reasonably be expected to constitute a material default by the Company or Seller or any Seller Affiliate, as applicable, under any such Purchased Contract or Support Obligation. Neither the Company nor Seller or any Seller Affiliate has received any written notice or, to Seller's Knowledge, oral notice, from any counterparties in connection with any of the Purchased Contracts or Support Obligations of (i) any material breach or default under any Purchased Contract or Support Obligation, (ii) the fact that any such party will terminate, not renew, cancel or substantially decrease its business with the Company, or (iii) any claim for damages or indemnification with respect to the products or performance of services pursuant to any Purchased Contract.
- (f) The consummation of the transactions contemplated by this Agreement will not require the consent or approval of any party to a Purchased Contract or Support Obligation except as specifically set forth on Schedule 2.6(b)(ix).
- (g) <u>Schedule 4.13(g)</u> sets forth a list of the Contracts (other than Purchased Contracts) to which Seller or an Affiliate of Seller is a party that (i) are not primarily related to the Business and (ii) are necessary to enable the Project to be located and constructed on the Site (collectively the "*Shared Contracts*").

Section 4.14 Real Property.

- (a) Schedule 4.14 sets forth a list of all Land Contracts.
- (b) Seller has made available to Buyer copies of all Land Contracts, and, as of the Closing Date, those copies are complete and accurate in all respects.
- (c) The Company does not own any real property in fee. Other than the Real Property Interests, the Company holds no other rights or interests in real property.
- (d) The Company and Seller hold, and as of the Closing Date the Company will exclusively hold, good and marketable title to the Real Property Interests free and clear of all Liens, adverse claims and other matters adversely affecting the Company's title to such Real Property Interests (other than Permitted Liens).
- (e) Each Land Contract (i) is a legal, valid and binding agreement of the Company or, prior to the Closing, Seller, as applicable, (ii) is in full force and effect and (iii) is enforceable, and will continue to be legal, valid and binding and enforceable on identical terms immediately following the consummation of the transactions contemplated hereby, against Seller or the Company, as applicable, and to Seller's Knowledge, each other

party thereto. Seller or the Company has paid, or caused to be paid, all amounts currently due and payable with respect to each Land Contract.

- (f) There exists no breach or default under any Land Contract by the Company, Seller or, to Seller's Knowledge, any other Person that is a party thereto.
- (g) (i) As of the Closing Date, there are no pending, threatened, appropriation, condemnation or like proceedings relating to any real property encumbered by the Land Contracts, the Project or any portion thereof or the sale of electricity therefrom; (ii) none of Seller, the Company or any Affiliate thereof have received any written notice from a Governmental Authority of any violation of any applicable zoning law, regulation or rule or other Law relating to or affecting any of such real property; and (iii) neither the Company nor Seller has granted any options or rights of first offer or first refusal to purchase or lease such real property, or any portion thereof or interest therein. As of the Closing Date, the zoning and any public or private land use restrictions for the real property which is the subject of the Land Contracts permits the location, interconnection, erection and construction, on the Site, of a Sufficient Project. To Seller's Knowledge, there is no action pending before any Governmental Authority to change the applicable zoning or building ordinances or any other Law affecting the Land Contracts that could reasonably be expected to have an adverse effect on the Project.
- (h) Except for the amounts payable by the Company as of and following the Closing Date as set forth in the Land Contracts, there are no other rents, royalties, fees or other amounts payable or receivable by the Company in connection with the Land Contracts.
- (i) Neither Seller nor the Company have (i) made, ordered and/or contracted for any construction, repairs, alterations or improvements to be made on or to any real property encumbered by the Land Contracts, or (ii) ordered materials or supplies for any real property encumbered by the Land Contracts, which in either case have not been paid for in full and there are no outstanding or disputed claims for any such work or item.
- (j) Neither the Company nor Seller has assigned, transferred, conveyed, mortgaged, deeded in trust or encumbered any of the Real Property Interests (except as part of the Pre-Closing Asset Transfer) and all such Real Property Interests are free and clear of all Liens other than Permitted Liens.
- (k) As of the Closing Date, the Real Property Interests will constitute all land rights necessary to locate, interconnect, erect, construct, and operate on the Site, a Sufficient Project.

Section 4.15 Permits.

(a) Schedule 4.15 sets forth all (i) Permits held by the Company or Seller in connection with the Project, (ii) applications for Permits which have been filed by the Company or Seller in connection with the Project, and (iii) to Seller's Knowledge, to the extent not listed in response to (i) or (ii), Permits that will be required for the further development and construction of the Project in accordance with the Site Permit.

- (b) The Company and Seller own or otherwise hold, and as of the Closing Date the Company will exclusively own or otherwise hold (and is in compliance in all material respects with), or, if not yet required, has applied for or will apply for, all Permits necessary to locate, interconnect, erect and construct, on the Site, a Sufficient Project (other than ministerial Permits that are not necessary prior to Closing) (each such Permit, a "Closing Permit"), and, each such Closing Permit is valid and in full force and effect, in each case, taking into account the development stage activities of the Project.
- (c) Each of the Company and Seller has performed in all material respects and is in compliance in all material respects with the Permits and applications for Permits set forth on Schedule 4.15(i) and (ii), as applicable, and to the Seller's Knowledge, all other parties to such Permits have performed in all material respects and are in compliance in all material respects with the Permits. No event has occurred that (with or without notice, lapse of time or both) could reasonably be expected to constitute a material default by the Company or Seller under any such Permit or, to Seller's Knowledge, prevent the issuance of any Permit listed on Schedule 4.15(ii) or (iii).
- (d) The consummation of the transactions contemplated by this Agreement will not affect the legality, validity, binding nature, enforceability or force and effect of any Permit listed on Schedule 4.15(i).
- (e) The representations and warranties in this Section 4.15 are Seller's sole representations and warranties regarding Permits except for those Permits set forth on Schedule 4.15(i) required by Environmental Laws, which are governed exclusively by Section 4.16.

Section 4.16 Environmental Matters.

(a) Except as set forth on <u>Schedule 4.16</u>:

- (i) the Company, and with respect to the Business, Seller, are, and since their formation have been, in compliance in all material respects with applicable Environmental Laws, and the Company and Seller have no Liabilities under Environmental Laws related to the Purchased Assets:
- (ii) the Company and Seller have obtained, maintained and complied with all Permits necessary under any applicable Environmental Law for the development and construction of the Project, each of which Permits is set forth on Schedule 4.15(i), and such Permits are in full force and effect and not subject to appeal (except pursuant to applicable Law);
- (iii) neither the Company nor, with respect to the Project, Seller has been served with written notice of any Environmental Claims that are currently outstanding, and no Environmental Claims are pending or, to Seller's Knowledge, threatened, against the Company or, with respect to the Project, Seller by any Governmental Authority under any Environmental Laws;

- (iv) to Seller's Knowledge, there are no facts, circumstances, conditions or occurrences relating to the Purchased Assets that would be expected to form the basis of a claim by any Governmental Authority under any Environmental Law against Seller or its affiliates;
- (v) to Seller's Knowledge, no portion of the Site contains or has ever contained any underground storage tank, surface impoundment or similar device used for the management of wastewater, or other waste management unit dedicated to the disposal, treatment, or long-term storage (greater than thirty (30) days) of waste materials;
- (vi) there is no site to which the Company or, with respect to the Project, Seller has transported or arranged for the transport of Hazardous Materials associated with the Company or the Project which, to Seller's Knowledge, is the subject of any environmental action that would result in an Environmental Claim: and
- (vii) there has been no Release of any Hazardous Material at or from the Project in connection with the Company's or Seller's operations at the Project that would result in an Environmental Claim.
- (b) The representations and warranties set forth in this Section are Seller's sole and exclusive representations and warranties concerning environmental matters, including Environmental Laws, Claims and Permits.

Section 4.17 <u>Intellectual Property</u>.

- (a) The Company and Seller own, or have the license or right to use for the Business all Intellectual Property currently used in the Business, and as of the Closing Date the Company will exclusively own, or have the license or right to use for the Business all Intellectual Property currently used in the Business.
- (b) Neither the Company nor Seller has received from any third party a claim in writing that it is infringing in any material respect the Intellectual Property of such third party.
- (c) To Seller's Knowledge, the utilization of the Purchased Assets does not infringe upon or violate the intellectual property rights of any other Person.
- (d) The representations and warranties set forth in this Section 4.17 are Seller's sole and exclusive representations and warranties concerning Intellectual Property matters.
- Section 4.18 <u>Brokers</u>. The Company does not have any liability or obligation to pay fees or commissions to any broker, finder or agent with respect to the transactions contemplated by this Agreement.
- Section 4.19 <u>Employees and Labor Matters</u>. The Company has never had any employees.

Section 4.20 <u>Employee Benefits</u>. The Company has never sponsored, maintained or contributed to any Benefit Plan.

Section 4.21 <u>Wind Data</u>. Seller has delivered to Buyer true, correct and complete copies of all books and records containing any Wind Data. The Wind Data were collected at the locations and during the times set forth in such documents. To Seller's Knowledge, the Wind Data is true, accurate and correct in all material respects. Seller has not omitted or failed to provide to Buyer any Wind Data measured and recorded at the Site on or before the dates specified on <u>Schedule 4.21</u> by or on behalf of Seller or any of its Affiliates, to the extent that the same are in Seller's or its Affiliates' possession or under Seller's or its Affiliates' control. To Seller's Knowledge, except for the Wind Data, there are no other wind speed data or other relevant wind characteristics data that have been prepared in respect of the Project.

Section 4.22 <u>Insurance</u>. <u>Schedule 4.22</u> sets forth all policies of fire, liability and other forms of insurance insuring the Company and the Purchased Assets. Such policies are in full force and effect, all premiums with respect thereto covering all periods up to and including the date as of which this representation is being made that are required to have been paid as of such date have been paid (other than retroactive premiums which may be payable with respect to comprehensive general liability insurance policies), and no written notice of cancellation or termination has been received by the owner or holder of any such policy with respect to any such policy which was not replaced on substantially similar terms prior to the date of such cancellation. No pending claims by or for the benefit of the Company exist under any such policies of insurance covering the Company.

Section 4.23 <u>No Other Agreements to Sell Purchased Assets</u>. Neither the Company nor Seller has any legal obligation to, or non-binding agreement in principle with, any other person to sell or effect a sale of all, or any portion of, the Company or the Purchased Assets.

Section 4.24 <u>Sufficient Funds</u>. Seller has and at all times prior to Closing will continuously have sufficient funds available or committed sources for sufficient funds to perform its obligations with respect to the Project as contemplated by this Agreement.

Section 4.25 <u>Books and Records</u>. All Books and Records of the Company have been maintained in material accordance with applicable Law.

ARTICLE 5

REPRESENTATIONS AND WARRANTIES OF BUYER

Buyer hereby represents and warrants to Seller that each and all of the following representations and warranties set forth in this Article 5 are true and correct as of the date of this Agreement and as of the Closing Date (except for such representations and warranties that speak as of a specific date, in which case such representations and warranties are true and correct as of such date):

- Section 5.1 <u>Organization</u>. Buyer is a corporation, validly existing and in good standing under the Laws of the State of New Mexico. Buyer is duly qualified or licensed to do business in each other jurisdiction where the actions to be performed by it under this Agreement makes such qualification or licensing necessary, except in those jurisdictions where the failure to be so qualified or licensed would not have a material adverse effect on its ability to perform such actions.
- Section 5.2 <u>Authority; Enforceability</u>. Buyer has all requisite corporate power and authority to enter into this Agreement and the Ancillary Agreements to which Buyer is a party, to perform its obligations hereunder and thereunder and to consummate the transactions contemplated hereby and thereby. The execution and delivery by Buyer of this Agreement and the Ancillary Agreements to which Buyer is a party and the performance by Buyer of its obligations under this Agreement and the Ancillary Agreements to which Buyer is a party have been duly and validly authorized by all necessary action on behalf of Buyer. This Agreement and each Ancillary Agreement to which Buyer is a party has been duly and validly executed and delivered by Buyer and constitutes the legal, valid and binding obligation of Buyer enforceable against Buyer in accordance with its terms except as the same may be limited by bankruptcy, insolvency, reorganization, fraudulent conveyance, arrangement, moratorium or other similar Laws relating to or affecting the rights of creditors generally or by general equitable principles.
- Section 5.3 <u>No Conflicts</u>. The execution and delivery by Buyer of this Agreement and the Ancillary Agreements to which Buyer is a party do not, and the performance by Buyer of its obligations hereunder and thereunder and the consummation of the transactions contemplated hereby and thereby will not:
- (a) result in a violation of or a breach of any of the terms, conditions or provisions of the Organizational Documents of Buyer;
- (b) result in a Default under any material Contract to which Buyer is a party, except for any such Default which would not, in the aggregate, have a material adverse effect on Buyer's ability to perform its obligations under this Agreement or any Ancillary Agreements to which Buyer is or will be a party; or
- (c) (i) violate or breach any term or provision of any Law, Permit or order applicable to Buyer or any of its Assets, except as would not have a material adverse effect on Buyer's ability to perform its obligations under this Agreement or any Ancillary Agreements to which Buyer is a party or (ii) require any material Consent of any Governmental Authority under any applicable Law, other than the State Regulatory Approval and such other Consents, which, if not made or obtained, would not have a material adverse effect on Buyer's ability to perform its obligations under this Agreement or any Ancillary Agreements to which Buyer is a party.
- Section 5.4 <u>Legal Proceedings</u>. Buyer has not been served with notice of any Claim, no Claim is pending and to Buyer's knowledge, none is threatened in writing, against Buyer which seeks a writ, judgment, order or decree restraining, enjoining or

otherwise prohibiting or making illegal any of the transactions contemplated under this Agreement or any Ancillary Agreements to which Buyer is a party.

- Section 5.5 <u>Brokers</u>. Buyer does not have any liability or obligation to pay fees or commissions to any broker, finder or agent with respect to the transactions contemplated by this Agreement.
- Section 5.6 <u>Financial Resources</u>. Buyer will have available at the Closing Date funds sufficient to pay the amounts payable by Buyer to Seller pursuant to Section 2.2.
- Section 5.7 <u>Acquisition as Investment</u>. Buyer is acquiring the Shares for its own account as an investment without the present intent to sell, transfer or otherwise distribute the same to any other Person except any transfer to, or merger of the Company with, any Affiliate of Buyer. Buyer acknowledges that the Shares are not registered pursuant to the 1933 Act and that none of the Shares may be transferred, except pursuant to an applicable exception under the 1933 Act. Buyer is an "accredited investor" as defined under Rule 501 promulgated under the 1933 Act.
- Section 5.8 <u>Compliance with Laws</u>. Buyer currently is in compliance in all material respects with all Laws and orders of all Governmental Authorities applicable to it, except as would not have a material adverse effect on Buyer's ability to perform its obligations under this Agreement or any Ancillary Agreements to which Buyer is a party.

ARTICLE 6

COVENANTS

The Parties hereby covenant and agree as follows:

Section 6.1 Books and Records.

From and after Closing, Buyer will preserve and keep the books and records (a) of the Company and the Purchased Assets that relate to the period prior to the Closing Date (including all accounting records) for a period of seven (7) years from the Closing, or for any longer periods as may be required by any Governmental Authority or ongoing litigation. If Buyer wishes to destroy such records after such time period, it will give sixty (60) days' prior written notice to Seller and Seller will have the right at its option and expense, upon prior written notice within such 60-day period, to take possession of the books and records within ninety (90) days after the date of Buyer's notice to Seller. From and after Closing, Buyer, upon reasonable prior notice from Seller, will provide to Seller and its Representatives access to or copies of books and records of the Company to the extent relating to events that occurred prior to Closing and to the extent needed for a legitimate business purpose or to enforce rights under this Agreement provided that all such books and records shall be confidential and the information therein not used or disclosed except as required by law, for a legitimate business purpose, or to enforce rights under this Agreement.

- (b) Seller will deliver the Books and Records of the Company in Seller's possession to Buyer as promptly as practicable following the Closing Date if such Books and Records are not present at the Company on the Closing Date. Seller may retain a copy of the Books and Records of the Company.
- Section 6.2 <u>Transfer Taxes</u>. Buyer shall pay any Transfer Taxes in connection with this Agreement and the transactions contemplated hereby. Buyer shall be responsible for filing any Tax Return regarding any Transfer Taxes in connection with this Agreement and the transactions contemplated hereby and will do so within the time period required by Law and provide a copy of the return to the Seller. For the avoidance of doubt, Buyer will be solely responsible for any Transfer Taxes arising from any action to dissolve, terminate or restructure the Company or to convey, distribute or transfer any assets, properties or other rights to or from the Company after Closing.
- Section 6.3 <u>Tax Matters</u>. Except as provided in Section 6.2 relating to Transfer Taxes:
- (a) In the case of any Straddle Period, (i) franchise Taxes based solely on capital, ad valorem Taxes and property Taxes shall be apportioned between the portion of such Straddle Period ending on the Closing Date and the portion of such Straddle Period beginning after the Closing Date on a daily pro-rata basis, and (ii) all other Taxes shall be apportioned between the portion of such Straddle Period ending on the Closing Date and the portion of such Straddle Period beginning after the Closing Date on a closing of the books basis.
- (b) Buyer and Seller shall furnish or cause to be furnished to each other, as promptly as practicable, such information and assistance relating to the Project and the Purchased Assets as is reasonably necessary for the preparation and filing of any Tax Return, claim for refund, or other filings relating to Tax matters, for the preparation for any Tax audit, for the preparation for any Tax protest and for the prosecution or defense of any suit or other proceeding relating to Tax matters.
- (c) The Parties agree that prior to the Closing, neither Party will negotiate with any local taxing authority regarding tax rates or structures for the Project without the prior written reasonable consent of the other Party, and that if such consent to negotiate is provided, any such agreement regarding tax rates or structures entered into prior to the Closing is also subject to the prior written reasonable consent of the other Party.
- Section 6.4 <u>Conduct of the Company Prior to Closing</u>. Except as contemplated, permitted or required by this Agreement, or as required by applicable Laws, between the date hereof and the Closing, Seller will cause the Company to conduct the Business and use commercially reasonable efforts to preserve all of its Assets in the ordinary course of business. Notwithstanding the preceding sentence, between the date hereof and the earlier to occur of the Closing and the termination of this Agreement, except as permitted or contemplated by the terms of this Agreement, without the prior written consent of Buyer (which consent shall not be unreasonably withheld, delayed or conditioned), the Company and, with respect to the Business, Seller shall not do any of the following:

- (a) take any action which would materially interfere with or prevent the consummation of the transactions contemplated by this Agreement;
 - (b) amend the Organizational Documents of the Company;
 - (c) adopt a voluntary plan of complete or partial liquidation or dissolution;
- (d) incur any obligations or Liabilities (through a Contract or otherwise) that would remain outstanding obligations or Liabilities of the Company following the Closing Date, other than with respect to any Lease Amendment or any Land Contracts executed after the date hereof which are substantially in the form of the applicable Land Contracts existing as of the date hereof and, with respect to Project Leases, which include the amendments set forth in the form of Lease Amendments attached as Exhibits C-1 and C-2, or such other form reasonably agreed by Buyer and Seller;
- (e) declare, set aside or pay any dividends on or make any other distributions (whether in cash, stock, equity securities or property) in respect of any Equity Interests of the Company or split, combine or reclassify any such Equity Interests or issue or authorize the issuance of any other securities of the Company in respect of, in lieu of or in substitution for any Equity Interests;
- (f) issue, deliver, sell, authorize, pledge or otherwise encumber any Equity Securities:
- (g) acquire or agree to acquire by merging or consolidating with, or by purchasing any material equity or voting interest in or a material portion of the assets of, or by any other manner, any business or any Person or division thereof;
- (h) sell, lease, license, encumber or otherwise dispose of any Purchased Assets (other than Permitted Liens) or enter into any written or oral agreement with a third party with respect to the distribution or sale of any Purchased Assets (other than the transfer of Purchased Assets from Seller to the Company);
- (i) settle or agree to settle any material Action with any third party, including any Governmental Authority;
- (j) make or effect any change in any accounting methods, principles or practices or any change in, or adoption of any new, tax accounting principle, method of tax accounting or tax election;
- (k) make or change any election in respect of Taxes, adopt or change any accounting method in respect of Taxes, file any federal, state, or foreign income Tax Return or any other material Tax Return without the consent of Buyer prior to filing, file any amendment to a federal, state, or foreign income Tax Return or any other material Tax Return, enter into any Tax sharing or similar agreement or closing agreement, settle any claim or assessment in respect of Taxes, or consent to any extension or waiver of the limitation period applicable to any claim or assessment in respect of Taxes, or enter into intercompany transactions giving rise to deferred gain or loss of any kind, or take any other

similar action relating to the filing of any Tax Return or the payment of any Tax, if such election, adoption or other action would have the effect of increasing the Tax liability of the Company for any period ending after the Closing Date or decreasing any Tax attribute of the Company existing on the Closing Date;

- (l) submit any rate schedules to Federal Energy Regulatory Commission or take any other actions that would result in the Company becoming a "public utility" within the meaning of Section 201(e) of the FPA or within the meaning of any applicable state statute; or
- (m) enter into any Contract or other agreement to do any of the foregoing in this Section 6.4.

Real Property Purchase Option. If requested by Buyer within 180 Section 6.5 days following the date of this Agreement, Seller shall use its commercially reasonable efforts to cause the Company to obtain from the landowner(s) of the Parcel identified by Buyer as its first priority an option to purchase such Parcel, for an operating and maintenance facility and substation, at a price and on terms and conditions acceptable to Buyer (a "Real Property Purchase Option"). If Seller approaches such landowner(s) identified by Buyer and such landowner(s) refuses to sell or to agree to a price or other terms and conditions acceptable to Buyer, Seller shall, if directed by Buyer, and may at its election (but subject to Buyer's written consent), use its commercially reasonable efforts to cause the Company to obtain a Real Property Purchase Option from the landowner(s) of the Parcel identified by Buyer as its second priority (if any). The foregoing shall correspondingly apply to any Parcel identified by Buyer as its third priority. The Parties acknowledge and agree that there may be, as a result of the foregoing, Real Property Purchase Option negotiations proceeding at one time with respect to more than one of the Parcels identified by Buyer. In no case shall the Company become party to more than one Real Property Purchase Option without the prior written consent of Buyer. If each Parcel landowner refuses to sell its Parcel or refuses to sell on terms and conditions that are acceptable to Buyer, Seller shall not be in breach of this Section 6.5.

Section 6.6 Development Work.

- (a) To the extent not completed prior to the date of this Agreement, Seller and the Company shall, at the sole cost and expense of Seller, perform the following actions related to development of the Project (collectively, the "*Critical Development Work*")
- (i) pursue completion of, and fund, all studies and costs necessary for the project to obtain a Generator Interconnection Agreement for a Sufficient Project under the SPP process; provided, that Buyer shall, within 30 calendar days following the later to occur of the Closing Date and the execution and delivery by all parties thereto of such Generator Interconnection Agreement, reimburse to Seller all Interconnection Costs that have not already been funded by Buyer or reimbursed to Seller by Buyer; *provided*, that Buyer agrees that any unused study costs that are returned under the Generator Interconnection Agreement or in connection with the DISIS (including any deposits, fees or amounts returned by SPP) and that were funded by Seller and not previously reimbursed

to Seller, shall be for the account of Seller, and if any such returned amounts are received by Buyer or the Company, Buyer shall cause such amounts to be paid over to Seller);

- (ii) implement a permitting and regulatory strategy with local, state and federal agencies;
- (iii) negotiate and complete all Land Contracts and obtain all Real Property Interests necessary to locate, interconnect, erect, construct and operate on the Site a Sufficient Project, and any Land Contract executed after the date hereof shall be, if a lease, substantially in the form of the Lease attached as Exhibit B or, if another form of Real Property Interest, in such other form reasonably agreed by Buyer and Seller and, with respect to Project Leases, shall include the

as applicable (except for the Project Leases listed in Part 1 of Schedule 2.6(b)(xv)), or such other form reasonably agreed by Buyer and Seller; provided, however, that if a Project Area Trigger Event exists or would occur based on any then proposed Project Area pursuant to the terms of Section 6.6(a)(xx), Buyer's and Seller's mutual agreement shall be required, acting reasonably and in good faith, of the Project Area that meets the requirements of Section 6.6(a)(xx);

- (iv) subject to the proviso at the end of Section 6.5, use commercially reasonable efforts to secure the Real Property Purchase Options in accordance with Section 6.5, and Seller shall remain responsible for the payments for the purchase options in the real property covered by the Real Property Purchase Options, it being understood that Buyer shall pay any amounts required to exercise the options and acquire a fee simple interest in any real property subject to the Real Property Purchase Options;
- (v) manage all pre-Closing negotiations between Seller or the Company and the landowners of the Site;
- (vi) manage zoning and other permitting matters including obtaining all discretionary Permits necessary to initiate construction of the Project and to enable the Company to locate, interconnect, erect, construct and operate on the Site a Sufficient Project;
- (vii) manage all title matters including, without limitation, identifying encumbrances in coordination with Buyer (including any federal or state holdings or easements), implementing curative measures and procurement of the Title Commitments, and obtaining the Survey, including performing such obligations set forth in Section 2.6(d);
 - (viii) prepare a critical issue analysis;
- (ix) complete and/or obtain all Reports, provide to Buyer all data utilized in the preparation of any such Report in either Seller's or any of its Affiliates' possession, and use commercially reasonable efforts to provide to Buyer all such data in the possession of any third parties;
 - (x) collect and provide Wind Data;

- (xi) complete microwave path analysis;
- (xii) complete bald eagle, raptor nest, bat activity and avian surveys of the Site;
- (xiii) complete a Lesser Prairie Chicken field survey to be conducted in the Spring of 2017 that is no less stringent than the Western Association of Fish and Wildlife Agencies Lesser Prairie Chicken Range-Wide Conservation Plan (October 2013), Appendix H and in conjunction with input from federal and state wildlife agencies;
- (xiv) cause to be completed (i) ten (10) preliminary geotechnical borings per 200 megawatts for preliminary foundation and electrical collection design and discovery in accordance with mutually agreed specifications and (ii) final geotechnical borings for all micro-sited locations (final and alternate), collection substation, O&M Building, transmission line route(s) upon final approval by Buyer of the micro-sited locations, any subsequent bores beyond those provided in clauses (i) and (ii) shall be the cost and responsibility of Buyer. Geotechnical testing shall be completed per Buyer's requirements in accordance with Exhibit D attached hereto. Reports for the preliminary and final geotechnical testing shall be provided to Buyer within twenty (20) Business Days after the last field sample was taken;
- (xv) complete cultural and historical surveys, if required by any Governmental Authority;
 - (xvi) complete a shadow flicker study, if required;
 - (xvii) complete noise studies as required by any Permit;
 - (xviii) complete a standard broadcast site review;
- (xix) complete native prairie habitat mapping and a review of United States Department of Agriculture Conservation Reserve Program with respect to those portions of the Site where the wind turbines, collection system, operations and maintenance building, project substations and roads relating to the Project are proposed to be located in each case as appearing on the preliminary site layout to be prepared and delivered by Seller no later than 270 days after the Execution Date (which preliminary site layout the Parties may mutually agree to modify based on Buyer's review, comment and constructability input (crane paths and building corridors) to the extent provided within 30 days of delivery of such preliminary site layout), and cause all affected parcels to be noted in the Survey;
- (xx) prepare, and deliver to Buyer no later than October 1, 2017, a proposed map depicting the Project Area for a Sufficient Project and the proposed turbine locations within the Project Area, which proposed map shall delineate all Real Property Interests which have presently been obtained, all Real Property Interests currently being pursued, and any land for which Real Property Interests are not expected to be required or obtained based on the current status of Development Work. If Buyer determines that the proposed Project Area would result in a Project Area Trigger Event, Buyer and Seller shall attempt to agree upon revisions to the proposed map of the Project Area in accordance with

the proviso at the end of Section 6.6(a)(iii). Seller shall prepare and deliver a revised map of the Project Area to Buyer reflecting revisions as may be mutually agreed upon in writing by Seller and Buyer to eliminate the Project Area Trigger Event and permit development of the Project in accordance therewith. Thereafter, Seller shall deliver to Buyer a revised map depicting the Project Area and the proposed turbine locations within the Project Area (including the revised status of the parcels of land within the Project Area as delineated on the initial or most recently proposed map) on the first day of each calendar month, and from time to time based on ongoing Development Work (but only after consultation with Buyer), following the delivery of the initial proposed map of the Project Area. If Buyer determines that any revised map of the Project Area delivered by Seller would result in a Project Area Trigger Event, Buyer and Seller shall attempt to agree upon revisions to the Project Area in accordance with the proviso at the end of Section 6.6(a)(iii) and Seller shall prepare and deliver a revised map of the Project Area to Buyer reflecting revisions as may be mutually agreed upon in writing by Seller and Buyer to eliminate the Project Area Trigger Event and permit development of the Project in accordance therewith. Seller shall complete, and deliver to Buyer not less than 30 days prior to Closing, a final map depicting the Project Area for a Sufficient Project and the turbine locations within the Project Area (including the revised status of the parcels of land within the Project Area as delineated on the initial or most recently proposed map) containing all revisions determined in accordance with the terms of this Section 6.6(a)(xx); provided, however if Seller is unable to deliver a Sufficient Project as a result of any matter not within the control of Seller, and such inability to perform was not due to Seller's negligence or breach of this Agreement, or Seller's failure to take commercially reasonable steps to remedy its inability to perform its obligations hereunder, Seller shall not be in breach of its obligations for a Sufficient Project under this Agreement and in such case in the event this Agreement is terminated solely as a result of such inability to deliver a Sufficient Project, Seller shall not be obligated to return to Buyer any portion of the Initial Payment other than an amount owed under Section 2.2(b)(B); provided further, however, that the terms of this Section 6.6(a)(xx) shall not be deemed a waiver of any of the conditions to the obligation of Buyer to effect the Closing pursuant to Section 2.6(b);

(xxi) complete the Project final site plan (including proposed turbine locations and geo-coordinates for all turbine locations considered and final selected sites with alternate site locations) with all proposed setbacks (occupied dwellings, roads, etc.); and

(xxii) perform the activities designated as Seller's responsibility on Schedule 6.6(b) attached hereto.

Notwithstanding anything to the contrary contained herein, Buyer shall be liable and responsible for all costs, expenses or other amounts pertaining to construction oversight and operation of the facility with respect to any development agreement, road use and repair agreement, public drainage agreement or similarly named agreement as negotiated between Seller and Roosevelt County, New Mexico and agreed to by Buyer with respect to the Project and no such costs, expenses or other amounts shall be deemed Development Costs hereunder or otherwise be the liability or responsibility of Seller; provided Seller shall be responsible for preparing, negotiating and obtaining such

agreements and for paying any upfront costs and expenses required to obtain such agreements.

- (b) To the extent not completed prior to the date of this Agreement, Seller and the Company shall, until the Closing Date and at the sole cost and expense of Seller, use their commercially reasonable efforts to perform the following to the extent such actions are relevant to the development of the Project or reasonably requested by Buyer (collectively, and together with the Critical Development Work, the "Development Work"):
- (i) support and, as requested, assist with all filings and other communications with the NMPRC and the PUCT, as applicable;
- (ii) release non-preferred landowner parcels or parcels having title complications that are incurable or at the subject landowner's request from the Project prior to initiating construction;
- (iii) support landowner relations and communications for activities such as pre-construction landowner meetings;
- (iv) manage all pre-construction negotiations between Seller or the Company and the landowners of the Site;
- (v) assist Buyer with crossing agreements with existing utilities within the Project Site;
- (vi) assist Buyer with public and turbine access roadway improvement assessments; and
- (vii) assist with site layout, site optimization and micro siting in connection with turbines, collection system, substation, operations and maintenance building, access roads and re-permitting associated with any adjustments or modifications to the aforementioned.
- (c) If the Development Work is not complete as of the Closing Date and Buyer agrees to waive the condition set forth in Section 2.6(b)(xiii) to the extent such Development Work is not complete then Buyer and Seller shall act in good faith to agree on terms for Seller and its Affiliates to act as consultants for the Development Work and the Project following the Closing Date.
- Section 6.7 <u>Asset Transfer</u>. Prior to (which may be on the same day as) the Closing, Seller shall (a) assign, convey and transfer to the Company, free and clear of all Liens other than Permitted Liens, all of Seller's right, title and interest in and to any Purchased Assets owned by Seller or in which Seller has any interest in and (b) cooperate with Buyer to allow Buyer to replicate and/or continue to receive the benefit of the Shared Contracts (the "*Pre-Closing Asset Transfer*"). All costs and expenses incurred in connection with such transfer shall be borne by Seller.

Section 6.8 Access to Information.

- (a) Subject to the terms of the Confidentiality Agreement, from the date hereof until the earlier of (a) the Closing and (b) the termination of this Agreement in accordance with Section 2.7, upon reasonable notice, Seller will, and will cause the Company, to (i) afford Buyer and its authorized representatives reasonable access to the offices, properties (including the Site), representatives, Contracts, and Books and Records of the Company and the Project; (ii) furnish to Buyer and authorized representatives of Buyer such additional financial and operating data and other information regarding the Company and the Project (or copies thereof) as Buyer may from time to time reasonably request; (iii) furnish to Buyer and authorized representatives of Buyer any other information concerning or otherwise relating to the Assets, the Company and the Project as Buyer or its representatives may reasonably request including all work papers reasonably necessary to support Development Costs; provided that, in the case of clause (ii) or (iii), Buyer shall reimburse Seller for any third party costs and expenses incurred by Seller or its Affiliates in connection with such activities.
- (b) Without limiting the generality of the foregoing, until the Closing Date, Seller agrees to furnish to Buyer the following reports and notices:
- (i) within ten (10) Business Days after the end of each month prior to the Closing Date, Seller shall deliver to Buyer a report addressing the progress being made with respect to the Development Work ("Monthly Report");
- (ii) within ten (10) Business Days after any such report is submitted, a copy of any report required to be filed by Seller (or on behalf of Seller) with any Governmental Authority other than in the ordinary course of business; and
- (iii) within ten (10) Business Days after Seller obtains Knowledge thereof, notice of any Environmental Claim by any Governmental Authority or any assertion of an Environmental Claim or material Claims by any other Person or Persons together with a copy of any correspondence relating thereto and a description of any steps Seller is taking and proposes to take with respect thereto.
- (c) Seller agrees to schedule and participate in weekly conference calls with Buyer to provide status reports to Buyer of the progress of the Development Work and issues encountered that could impact the Project or development of the Project Area. Buyer and Seller shall each cause appropriate Representatives to participate in the weekly conference calls and shall cooperate with each other and provide information reasonably requested by the other regarding the status of ongoing Development Work and as reasonably required to enable each Party to monitor matters which could have an effect on or result in a Project Area Trigger Event.

Section 6.9 Efforts; Consents; Regulatory and Required Seller Approval.

(a) Each Party will use diligent and commercially reasonable efforts to (i) take, or cause to be taken, all appropriate action, and do, or cause to be done, all things necessary, proper or advisable under applicable Laws or otherwise to promptly consummate and make

effective the transactions contemplated by this Agreement and the Ancillary Agreements; (ii) obtain all authorizations, consents, orders and approvals of, and give all notices to and make all filings with, all Governmental Authorities and other third parties that may be or become necessary for the performance of its obligations under this Agreement and the Ancillary Agreements and the consummation of the transactions contemplated by this Agreement and the Ancillary Agreements, or that may be or become necessary, proper or advisable pursuant to any Permit or Purchased Contract to which the Company is bound or by which any of the Company's assets or properties are bound and (iii) satisfy all conditions to such Party's obligations under this Agreement and the Ancillary Agreements. Notwithstanding the foregoing or anything to the contrary set forth in this Agreement, in connection with obtaining such authorizations, consents, orders and approvals from Governmental Authorities or third parties, no Party will be required to make payments, commence legal or regulatory proceedings or agree to modifications of the terms and conditions of any agreements with third parties or Permits. Nothing in this Section 6.9 shall require any Party to (x) consent to any action or omission by the other Party or its Affiliates or (y) agree to amend or waive any provision of this Agreement. Each Party shall reasonably cooperate with the other Party in performing the obligations required by this Section 6.9(a), including the negotiation, execution, and assignment of Purchased Contracts and agreements related to the Project. Notwithstanding anything to the contrary contained in this Section 6.9, if the parties are in an adversarial relationship in litigation or arbitration, the furnishing of any documents or information in accordance herewith shall be solely subject to applicable rules relating to discovery and the remainder of this Section 6.9(a) shall not apply.

(b) With respect to State Regulatory Approval, Buyer will submit following the date hereof an application or a petition to the NMPRC and the PUCT requesting State Regulatory Approval. If Buyer obtains State Regulatory Approval as requested or with modifications that are acceptable to Buyer, and all other conditions precedent are satisfied or waived by the applicable Party, Buyer shall proceed to Closing subject to the terms and conditions of this Agreement;

If State Regulatory Approval does not occur by the date described in Section 2.7(a)(iy), then Buyer shall have the right to

occur by the date described in Section 2.7(a)(iv), then Buyer shall have the right to terminate this Agreement as described in such Section.

(c) If requested by Buyer, Seller shall, at its own cost, reasonably cooperate and support Buyer's efforts to obtain such approvals from the NMPRC and the PUCT, including assisting in factual development of the filings, providing supportive testimony and written comments; provided, however, that Seller, the Company and their Affiliates will not communicate with the NMPRC staff or the PUCT staff regarding the Project or

regulatory approval process without Buyer's express consent, which consent may be withheld for any reason; provided further that such restriction shall not limit or prevent Seller, the Company or their Affiliates from communicating with the NMPRC regarding the Site Permit or any other Permit that may be issued by the NMPRC.

(d) Except as otherwise provided in this Agreement, the Parties will not take any action that is reasonably likely to have the effect of unreasonably delaying, impairing or impeding the receipt of any required authorizations, consents, orders or approvals.

Section 6.10 <u>Notification of Closing</u>. Within 60 days after the Closing Date, Buyer will provide evidence to Seller, in a format reasonably acceptable to Seller, that Buyer has provided notice to all applicable Governmental Authorities and all counterparties to the Contracts of the Company regarding the sale of the Company and the Assets of the Company to Buyer and the new addresses for notice purposes.

Section 6.11 Public Announcements. Subject to a Party's reasonable judgment that it is required by Law or by the rules of a national securities exchange to make such disclosure, neither Party shall issue any public announcement or other statement with respect to this Agreement or the transactions contemplated hereby without the prior consent of the other Party. Additionally, Seller and the Company hereby consent to the disclosure of confidential information regarding the Project and its current status in public filings and other filings with any Governmental Authority and informal communications with regulators or any Governmental Authority to be made by Buyer in connection with providing notice of or seeking approval of the transaction contemplated by this Agreement and in developing the Project; and hereby waive any confidentiality provisions relating thereto currently in effect. Notwithstanding the foregoing, following the Closing Date, Seller may list the Project, including status, location, capacity in megawatts, and commercial operation date (but not including the identity of Buyer), and may use photographs of the Project, in a manner consistent with Seller's listings of other wind projects that it has developed, on Seller's or its Affiliates' websites or Seller's or its Affiliates' other marketing materials, without the consent of Buyer.

Section 6.12 <u>Transfer of Permits</u>. Seller acknowledges that the Project is subject to various permits and requirements under New Mexico and Texas law, including permits authorizing the construction of the Project, and requirements for the recovery of costs incurred from the Project. In the event Buyer determines that it will, following the Closing, merge or consolidate Company with and into Buyer, Seller shall reasonably assist and cooperate with Buyer, at Buyer's request and Buyer's cost and expense, with respect to the transfer of all such existing Permits to Buyer and with respect to Buyer's satisfaction of its regulatory requirements in connection therewith.

Section 6.13 <u>Further Assurances</u>. Subject to the terms and conditions of this Agreement, at any time or from time to time after the Closing, at any Party's request and without further consideration, the other Party will execute and deliver to such Party such other instruments of sale, transfer, conveyance, assignment and confirmation, provide such materials and information and take such other actions as such Party may reasonably request in order to consummate the transactions contemplated by this Agreement.

Section 6.14 Schedules. Either Party may, from time to time prior to and up to the Closing Date, by written notice to the other Party, disclose any fact, matter, condition, event or circumstance that occurs following the date of this Agreement and that, individually or in the aggregate, renders such Party unable, without amending the Schedules, to satisfy its condition precedent under Section 2.6(b)(i) or Section 2.6(c)(i), as applicable (each, an "Update") provided, that, such Updates must be delivered no later than the date that is ten (10) days prior to the Closing Date, other than with respect to any fact, matter, condition, event or circumstance that occurs after such date. In the event the receiving Party does not terminate this Agreement pursuant to Section 2.7 following delivery of an Update by the other Party, the disclosing Party shall be permitted to update the applicable Schedule(s) to properly reflect the fact, matter, condition, event or circumstance disclosed to the other Party in such Update, and all of the disclosing Party's representations and warranties set forth in this Agreement made following the Update shall be subject to the Schedules attached hereto, as modified or amended by such an Update.



ARTICLE 7

INDEMNIFICATION, LIMITATIONS OF LIABILITY AND WAIVERS

- Section 7.1 <u>Survival</u>. All representations, warranties, covenants and obligations in this Agreement will survive the Closing until the date that is twenty-four (24) months after the Closing Date, except that (a) each Designated Representation and Section 6.15 (Build Out Restriction) will each survive the Closing indefinitely, (b) each Tax Representation, and Section 7.2(e) will survive the Closing until the end of the applicable statute of limitations and (c) Section 7.2(d) and Section 7.3(e) will each survive the Closing until the date that is thirty-six (36) months after the Closing Date.
- Section 7.2 <u>Indemnification by Seller</u>. Subject to Sections 7.1 and 7.4, Seller will indemnify Buyer and its Affiliates and Representatives (the "*Buyer Group*") from and against all Losses arising, directly or indirectly, from or in connection with:
- (a) any breach of any representation or warranty made in Article 3 or Article 4 of this Agreement other than Designated Representations, the Tax Representations and the representations and warranties contained in Section 4.14 (Real Property) and Section 4.24 (Sufficiency of Funds);
- (b) any breach of any Designated Representation, Tax Representation or the representations and warranties contained in Section 4.11(p), Section 4.14 (Real Property) and Section 4.24 (Sufficiency of Funds);

- (c) any breach of any covenant, agreement or other obligation of Seller contained in this Agreement;
 - (d) the retention of the Excluded Liabilities by Seller; and
- (e) Taxes of the Company to the extent attributable to any Pre-Closing Tax Period.
- Section 7.3 <u>Indemnification by Buyer</u>. Subject to Sections 7.1 and 7.4, Buyer will indemnify Seller and its Affiliates and Representatives (the "*Seller Group*") from and against all Losses arising, directly or indirectly, from or in connection with:
- (a) any breach of any representation or warranty made in Article 5 of this Agreement;
- (b) any breach of any covenant, agreement or other obligation of Buyer contained in this Agreement;
- (c) Buyer's violation of any Laws or negligence or more culpable conduct in connection with Buyer's ownership or operation of the Company on or after the Closing Date;
 - (d) any Transfer Taxes;
 - (e) any Assumed Liabilities; and
- (f) Taxes of the Company to the extent attributable to any period following the Closing.
- Section 7.4 <u>Limitations on Liability</u>. Notwithstanding any contrary provision in this Agreement:
- (a) <u>Time Bar on Claims</u>. No Indemnified Party will be entitled to any recovery (including by way of off-set) from any Indemnifying Party unless a Notice of Claim has been given on or before the expiration of time period for survival set forth in Section 7.1.
- (b) <u>Insurance Recoveries</u>. Losses for which any Indemnified Party will be reimbursed hereunder will be decreased by insurance proceeds or payments from any other responsible parties actually received by such Indemnified Party (after deducting costs and expenses incurred in connection with recovery of such proceeds) and will be increased to take account of any net tax cost incurred by the Indemnified Party in the year any indemnification payment for such Losses was received (or an earlier year) arising from the receipt of any such payment hereunder (grossed up for such increase) and will be decreased to take into account any net tax benefit realized by the Indemnified Party in the year the Losses were incurred or paid (or an earlier year) arising from the incurrence or payment of any such Losses.)

- (c) <u>Threshold</u>. An Indemnified Party will be entitled to make a Claim for indemnification under Section 7.2(a) or 7.3(a) for any and all Claims once the aggregate amount of all Claims for indemnification by such Indemnified Party exceeds an amount equal to of the final Purchase Price and such amount shall not act as a deductible (the "*Threshold*"); provided, that the Threshold will not apply to or otherwise be comprised of (i) any Losses relating to a breach by Seller of the Designated Representations, the Tax Representations or and the representations and warranties contained in Section 4.14 (Real Property) and Section 4.24 (Sufficiency of Funds) or (ii) any Losses relating to a breach by Buyer of the representations under Section 5.1 (Organization) and Section 5.2 (Authority; Enforceability).
- (d) <u>Tax Treatment</u>. Any indemnity payment made pursuant to this Agreement will be treated as an adjustment to the Purchase Price for Tax purposes, unless (i) an audit or other administrative or judicial action with respect to the Indemnified Party causes any such payment not to constitute an adjustment to the Purchase Price for U.S. federal income tax purposes, (ii) otherwise determined by agreement of the parties hereto, or if there is no agreement, by an opinion of a nationally-recognized tax counsel selected by Buyer and reasonably acceptable to Seller that such amount is "more likely than not" includable as income of the recipient for income tax purposes, or (iii) otherwise required by Law. The amount of any indemnity payment not constituting an adjustment to the Purchase Price for U.S. federal income tax purposes in accordance with the immediately preceding sentence will be grossed up and paid on an after-tax basis (assuming the highest marginal federal, state and local income tax rates then applicable to corporations).
- (e) <u>Maximum Liability</u>. Buyer and the other members of Buyer Group will not be entitled to recover from Seller for any Indemnity Claim under Section 7.2(a) of this Agreement any monetary amount in respect of Losses in excess of the Indemnity Cap in the aggregate for all Indemnity Claims. Seller and the other members of Seller Group will not be entitled to recover from Buyer for any Indemnity Claim under Section 7.3(a) of this Agreement any monetary amount in respect of Losses in excess of the Indemnity Cap in the aggregate for all Indemnity Claims. Claims with respect to a breach of Section 4.11(p) shall not be subject to the Indemnity Cap; provided, however, that in no event shall Seller be required to indemnify Buyer or any other members of the Buyer Group for Losses in connection with such breach in excess of the Purchase Price.
- (f) <u>No Contribution</u>. Seller will not have any right of contribution, right of indemnity or other right or remedy against the Company in connection with any indemnification obligation or any other Liability to which Seller may become subject under or in connection with this Agreement.
- (g) <u>Qualifications</u>. Notwithstanding anything in this Agreement to the contrary, for purposes of the indemnification obligations under this Article 7, the representations and warranties contained in this Agreement will be considered without regard to any "material," "Material Adverse Effect" or similar non-monetary qualifications (other than Knowledge qualifications) contained therein for purposes of (i) determining the amount of any Losses and (ii) determining whether or not any breaches of such representations or warranties have occurred.

(h) <u>Representations and Warranties</u>. Notwithstanding any other provision of this Agreement, Buyer shall be entitled to be indemnified by Seller pursuant to Section 7.2(a) and Section 7.2(b) regardless of: (a) any due diligence done by Buyer and its representatives prior to the date hereof and (b) any knowledge or information known or available to Buyer prior to the date hereof from Seller or any other source.

Section 7.5 Procedures for Third Party Claims.

- (a) Promptly after receipt by an Indemnified Party of notice of the commencement of any Action by a third party (a "*Third Party Claim*") with respect to any matter for which indemnification is or may be owing pursuant to Section 7.2 or 7.3 hereof, the Indemnified Party will give notice thereof to the Indemnifying Party, provided, however, that the failure of the Indemnified Party to notify the Indemnifying Party will not relieve the Indemnifying Party of any of its obligations hereunder, except to the extent that the Indemnifying Party demonstrates that the defense of such Third Party Claim has been actually prejudiced by the Indemnified Party's failure to give such notice.
- (b) If any Action referred to in Section 7.5(a) is brought against an Indemnified Party or the Company and the Indemnified Party gives notice to the Indemnifying Party of the commencement of such Action, the Indemnifying Party will be entitled to participate in such Action, and (unless (x) the Indemnifying Party is also a party to such Action and the Indemnified Party determines in good faith that joint representation would be inappropriate upon the advice of outside counsel that a conflict of interest exists between the Indemnified Party and the Indemnifying Party with respect to such Action, or (y) the Indemnifying Party fails to provide reasonable assurance to the Indemnified Party of its financial capacity to defend such Action and provide indemnification with respect to such Action) may assume the defense of such Action with counsel reasonably satisfactory to the Indemnified Party and, after notice from the Indemnifying Party to the Indemnified Party of its election to assume the defense of such Action, the Indemnifying Party will not, as long as it diligently conducts such defense, be liable to the Indemnified Party under this Section 7.5 for any fees of other counsel with respect to the defense of such Action, in each case subsequently incurred by the Indemnified Party in connection with the defense of such Action.
- (c) If the Indemnifying Party is entitled to and assumes the defense of an Action, no compromise or settlement of such claims or Action may be effected by the Indemnifying Party without the Indemnified Party's written consent unless (A) there is no effect on or grounds for the basis of any other Claims that may be made against the Indemnified Party, (B) the sole relief provided is monetary damages that are paid in full by the Indemnifying Party and/or performance that is performed in full by the Indemnifying Party, and (C) the Indemnified Party will have no Liability with respect to any compromise or settlement of such claims or Action. Notwithstanding the assumption by the Indemnifying Party of the defense of any Claim or Action, the Indemnified Party will be permitted to join in such defense and to employ counsel at its own expense. Subject to Section 7.5(d), notwithstanding anything to the contrary contained in this Agreement, the Indemnified Party shall not compromise or settle any Third Party Claim or agree to extend

any applicable statute of limitations without the prior written approval of the Indemnifying Party (which consent shall not be unreasonably withheld, delayed or conditioned).

- (d) Notwithstanding the foregoing, if there is a reasonable probability that an Action may result in the Indemnified Party or its Affiliates having to pay monetary Losses for which it would not be entitled to indemnification under this Agreement or having to perform specific performance, the Indemnified Party may, by notice to the Indemnifying Party, assume the exclusive right to defend, compromise or settle such Action, but the Indemnifying Party will not be bound by any compromise or settlement thereof effected without its written consent (which consent shall not be unreasonably withheld, delayed or conditioned) or any other result occurring after the Indemnifying Party reasonably requested a compromise or settlement that would have been fully performed by the Indemnifying Party but such request was rejected by the Indemnified Party.
- (e) The Indemnifying Party and the Indemnified Party agree to provide each other with reasonable access during regular business hours to the properties, books and records and Representatives of the other, as reasonably necessary in connection with the preparation for an existing or anticipated Action involving a Third Party Claim and its obligations with respect thereto pursuant to this Article 7.
- Section 7.6 <u>Indemnification Procedures</u>. The following procedures will apply to any claim for indemnification by Buyer Group or the Seller Group that does not involve a Third Party Claim:
- (a) <u>Notice of Claim</u>. A Notice of Claim will be given as soon as practicable, but in no event later than sixty (60) days, after the Indemnified Party determines that it is or may be entitled to indemnification pursuant to this Agreement; <u>provided</u>, <u>however</u>, that failure to provide notice will not prejudice the Indemnified Party's right to indemnity, except to the extent the Indemnifying Party prejudiced by the Indemnified Party's failure to give such notice. Notice of Claim will be made as follows:
- (i) in the case of any Indemnity Claim by any member of Buyer Group, by Buyer to Seller at the address and in the manner provided in Section 8.1 (Notices). Buyer will be the Indemnified Party with respect to Indemnity Claims pursuant to Section 7.2, and (except as provided in Section 7.5) no liability in respect of any such Indemnity Claim will be contested, settled, admitted, litigated or otherwise dealt with by or on behalf of Buyer Group for this purpose by any person other than Buyer or its designee; and
- (ii) in the case of any Indemnity Claim by any member of the Seller Group against Buyer, by Seller to Buyer at the address and in the manner provided in Section 8.1 (Notices). Seller will be the Indemnified Party with respect to Indemnity Claims pursuant to Section 7.3, and (except as provided in Section 7.5) no liability in respect of any such Indemnity Claim will be contested, settled, admitted, litigated or otherwise dealt with by or on behalf of the Seller Group for this purpose by any person other than Seller or its designee.

- (b) <u>Dispute Notice</u>. If the Indemnifying Party disputes (x) its obligation to indemnify the Indemnified Party in respect of any Indemnity Claim set forth in a Notice of Claim, or (y) the Indemnity Claim Amount set forth in a Notice of Claim, a dispute notice ("*Dispute Notice*") will be given as soon as practicable, but in no event later than thirty (30) days, after the Notice of Claim is given, as follows:
- (i) in the case of any Indemnity Claim by any member of Buyer Group against Seller, a Dispute Notice may be given only by Seller, and if given, will be sent by Seller to Buyer at the address and in the manner provided in Section 8.1 (Notices); and
- (ii) in the case of any Indemnity Claim by any member of the Seller Group against Buyer, a Dispute Notice may be given only by Buyer, and if given, will be sent by Buyer to Seller at the address and in the manner provided in Section 8.1 (Notices).
 - (A) If no Dispute Notice is given within such thirty (30) day period, the validity of the claim for indemnification and the Indemnity Claim Amount, each as set forth in the Notice of Claim, will be deemed to be agreed, effective on the first (1st) day following such thirty (30) day period, and the Indemnity Claim Amount set forth in the Notice of Claim will immediately be an Indemnity Amount Payable of the relevant Indemnifying Party.
 - (B) If a Dispute Notice is given within such thirty (30) day period, then:
 - (1) The portion, if any, of the Indemnity Claim Amount which is not disputed in the Dispute Notice will immediately be an Indemnity Amount Payable of the relevant Indemnifying Party.
 - (2) Buyer and Seller will negotiate in good faith to settle the dispute, and the portion, if any, of the Indemnity Claim Amount which Buyer and Seller agree in writing is payable will immediately be an Indemnity Amount Payable of the relevant Indemnifying Party.
 - (3) If Buyer and Seller are unable to resolve any portion of the Indemnity Claim Amount within two (2) months following the date the Dispute Notice is given, either Buyer or Seller may initiate proceedings specified in Section 8.13 (Governing Law; Venue; and Jurisdiction) of this Agreement to obtain resolution of the dispute.
 - (4) If neither Buyer nor Seller initiates legal proceedings in respect of the dispute within twelve (12) months following the date the Dispute Notice is given, the portion of the Indemnity Claim Amount which is disputed will not be an Indemnity Amount Payable, and the Indemnified Party will have no further right, under this Agreement, to seek to recover such amount from the Indemnifying Party.
 - (5) If Buyer or Seller initiates legal proceedings within the twelve (12) month period specified in Section 7.6(b)(ii)(B)(4), the amount, if any, determined in a Final Order as payable by the Indemnifying Party will be

an Indemnity Amount Payable of the relevant Indemnifying Party as of the date of such Final Order.

Section 7.7 Payments of Indemnity Amounts Payable by Buyer. Subject to the limitations in Section 7.4, Buyer will pay to each relevant Indemnified Party any Indemnity Amount Payable by Buyer, by wire transfer of immediately available dollars (or as otherwise directed pursuant to any Final Order or as otherwise agreed by the Indemnified Party and the Indemnifying Party) to an account designated by Seller, promptly and in no event later than five (5) Business Days after such Indemnity Amount Payable is established in accordance with this Agreement.

Section 7.8 Payments of Indemnity Amounts Payable by Seller. Subject to the limitations in Section 7.4, any Indemnity Amount Payable by Seller to each relevant Indemnified Party will be paid by wire transfer of immediately available dollars (or as otherwise directed pursuant to any Final Order or as otherwise agreed by the Indemnified Party and the Indemnifying Party) to an account designated by Buyer, promptly and in no event later than five (5) Business Days after such Indemnity Amount Payable is established in accordance with this Agreement.

Section 7.9 Exclusive Remedy. Subject to Section 8.14, the indemnification obligations of the Parties contained in this Agreement shall, if the Closing Date occurs, be the sole and exclusive remedy of the Parties hereto and their Affiliates, successors and assigns with respect to any and all claims for Losses sustained or incurred arising out of or relating to any breach of representation, warranty, covenant or agreement contained in this Agreement, including any claims with respect to environmental, health and safety matters, including any such matters under any Environmental Laws. Subject to Section 8.14, each Party hereby expressly waives and disclaims, and agrees that it shall not assert, any right, remedy (including the remedy of rescission) or claim in respect of any such breach or Losses based on any cause or form of action whatsoever, except as and to the extent permitted in this Article 7. This provision shall not limit any available remedy of the Party seeking indemnification for any Losses resulting from, or related to the fraud or willful misconduct of another Party. Nothing in this Section is intended to constitute a waiver or limitation of any rights that either Party (or their respective Affiliates) may have to assert claims against third parties, including contractors performing any work in connection with the Project.

ARTICLE 8

MISCELLANEOUS

Section 8.1 Notices.

(a) Unless this Agreement specifically requires otherwise, any notice, demand or request provided for in this Agreement, or served, given or made in connection with it, will be in writing and will be deemed properly served, given or made if delivered in person or sent by facsimile or email (in the case of delivery by facsimile or email, solely if receipt is confirmed) or sent by registered or certified mail, postage prepaid, or by a nationally

recognized overnight courier service that provides a receipt of delivery, in each case, to the Parties at the addresses specified below:

If to Buyer, to:

Southwestern Public Service Company

414 Nicollet Mall, 401-04 Minneapolis, MN 55401-1927

Attention: George E. Tyson II, Senior Vice President, Corporate Development

Telephone: (612) 215-4627 Facsimile: (612) 215-4575

Email: george.tyson@xcelenergy.com

With a copy to:

Southwestern Public Service Company

414 Nicollet Mall, 401-09

Minneapolis, MN 55401-1927

Attention: Scott Wilensky, Executive Vice President and General Counsel

Telephone: (612) 330-5942 Facsimile: (612) 215-9025

Email: scott.wilensky@xcelenergy.com

And a copy to (which shall not constitute notice):

Orrick, Herrington & Sutcliffe LLP

Suite 4100

1301 McKinney Street

Houston, TX 77010

Attention: Dahl Thompson Telephone: (713) 658-6611 Facsimile: (713) 658-6401

Email: Dahl.thompson@Orrick.com

If to Seller, to:

Invenergy Wind Development North America LLC

One South Wacker Drive, Suite 1800

Chicago, IL 60606

Attention: General Counsel Telephone: (312) 224-1400

Email: GeneralCounsel@invenergyllc.com

(b) Notice given by personal delivery, mail or overnight courier pursuant to this Section 8.1 will be effective upon physical receipt. Notice given by facsimile or email pursuant to this Section 8.1 will be effective as of the date of confirmed delivery if

delivered before 5:00 p.m. Central Time on any Business Day or the next succeeding Business Day if confirmed delivery is after 5:00 p.m. Central Time on any Business Day or during any non-Business Day.

Section 8.2 Entire Agreement. Except for the Confidentiality Agreement, this Agreement and the Ancillary Agreements supersede all prior discussions and agreements between the Parties with respect to the subject matter hereof, and this Agreement, the Ancillary Agreements, the Confidentiality Agreement and the other documents delivered pursuant to this Agreement contain the sole and entire agreement between the Parties hereto with respect to the subject matter hereof. The Parties hereto have voluntarily agreed to define their rights, liabilities and obligations with respect to the subject matter hereof exclusively in contract pursuant to the express terms and provisions of this Agreement, the Ancillary Agreements, the Confidentiality Agreement and the other documents delivered pursuant to this Agreement; and the Parties hereto expressly disclaim that they are owed any duties or are entitled to any remedies not expressly set forth in this Agreement. Furthermore, the Parties each hereby acknowledge that this Agreement embodies the justifiable expectations of sophisticated parties derived from arm's-length negotiations; all Parties specifically acknowledge that no Party has any special relationship with another Party that would justify any expectation beyond that of an ordinary buyer and an ordinary seller in an arm's-length transaction. The sole and exclusive remedies for any breach of the terms and provisions of this Agreement (including any representations and warranties set forth herein, made in connection herewith or as an inducement to enter into this Agreement) or any claim or cause of action otherwise arising out of or related to the subject matter hereof will be those remedies available at law or in equity for breach of contract only (as such contractual remedies have been further limited or excluded pursuant to the express terms of this Agreement); and the Parties hereby agree that neither party hereto will have any remedies or cause of action (whether in contract or in tort) for any statements, communications, disclosures, failure to disclose, representations or warranties not set forth in this Agreement, absent fraud.

Section 8.3 <u>Expenses</u>. Except as otherwise expressly provided in this Agreement, whether or not the transactions contemplated hereby are consummated, each Party will pay its own costs and expenses incurred in anticipation of, relating to and in connection with the negotiation and execution of this Agreement and the transactions contemplated hereby, including all expenses and costs incurred to obtain approvals required by such Party from Governmental Authorities.

Section 8.4 <u>Disclosure</u>. Seller may, at its option, include in the Schedules items that are not material in order to avoid any misunderstanding, and any such inclusion, or any references to dollar amounts, will not be deemed to be an acknowledgment or representation that such items are material, to establish any standard of materiality or to define further the meaning of such terms for purposes of this Agreement. Information disclosed in any Schedule will constitute a disclosure for purposes of all other Schedules notwithstanding the lack of specific cross-reference thereto, but only to the extent the applicability of such disclosure to such other Schedule is readily apparent. In no event will the inclusion of any matter in the Schedules be deemed or interpreted to broaden Seller's representations, warranties, covenants or agreements contained in this Agreement. The

mere inclusion of an item in the Schedules will not be deemed an admission by Seller that such item represents a material exception or fact, event, or circumstance or that such item is reasonably likely to result in a Material Adverse Effect. Each Party will promptly notify the other Party upon becoming aware of (a) the occurrence, or failure to occur, of any event, which occurrence or failure has caused any representation or warranty of such Party contained in this Agreement or in any exhibit, schedule, certificate, document or written instrument attached hereto to be untrue or inaccurate in any material respect, (b) any material failure of such Party to comply with, perform or satisfy, in any respect, any covenant, condition or agreement to be complied with, performed by or satisfied by it under this Agreement or any exhibit, schedule, certificate, document or written instrument attached hereto and (c) any notice or other communication from any Governmental Authority in connection with this Agreement, the Company Assignment Agreement or the transactions contemplated herein and therein; provided, that such disclosure will not be deemed to cure, or to relieve any Party of any liability or obligation with respect to, any breach of or failure to satisfy any representation, warranty, covenant or agreement or any condition hereunder, and will not affect any Party's right with respect to indemnification hereunder.

Section 8.5 <u>Waiver</u>. Any term or condition of this Agreement may be waived at any time by the Party that is entitled to the benefit thereof, but no such waiver will be effective unless set forth in a written instrument duly executed by or on behalf of the Party waiving such term or condition. No waiver by any Party of any term or condition of this Agreement, in any one or more instances, will be deemed to be or construed as a waiver of the same or any other term or condition of this Agreement on any future occasion. All remedies, either under this Agreement or by Law or otherwise afforded, will be cumulative and not alternative.

Section 8.6 <u>Amendment</u>. This Agreement may be amended, supplemented or modified only by a written instrument duly executed by or on behalf of each Party.

Section 8.7 No Third Party Beneficiary. Except for the provisions of Sections 7.2 and 7.3 (which are intended for the benefit of the Persons identified therein), the terms and provisions of this Agreement are intended solely for the benefit of the Parties and their respective successors or permitted assigns, and it is not the intention of the Parties to confer third-party beneficiary rights upon any other Person. For the avoidance of doubt, no Person who is not a Party to this Agreement, may challenge any termination of this Agreement, for any reason, or enforce or seek to enforce any provisions of this Agreement (except as set forth in the first sentence of this Section).

Section 8.8 <u>Assignment; Binding Effect</u>. Buyer may assign its rights under this Agreement to any Affiliate or to Buyer's lenders for collateral security purposes, but such assignment will not release Buyer from its obligations hereunder. Except as provided in the preceding sentence, neither this Agreement nor any right, interest or obligation hereunder may be assigned at any time (including without limitation following Closing) by any Party without the prior written consent of each of the other Party. For the avoidance of doubt, no merger or consolidation of the Company with or into the Buyer or any Affiliate

of Buyer, or any other assignment by operation of law, shall constitute a breach of this Agreement.

Section 8.9 <u>Headings</u>. The headings used in this Agreement have been inserted for convenience of reference only and do not define or limit the provisions hereof.

Section 8.10 <u>Invalid Provisions</u>. If any provision of this Agreement is held to be illegal, invalid or unenforceable under any present or future Law, and if the rights or obligations of any Party under this Agreement will not be materially and adversely affected thereby, such provision will be fully severable, this Agreement will be construed and enforced as if such illegal, invalid or unenforceable provision had never comprised a part hereof, the remaining provisions of this Agreement will remain in full force and effect and will not be affected by the illegal, invalid or unenforceable provision or by its severance herefrom and in lieu of such illegal, invalid or unenforceable provision, there will be added automatically as a part of this Agreement a legal, valid and enforceable provision as similar in terms to such illegal, invalid or unenforceable provision as may be possible.

Section 8.11 <u>Counterparts; Facsimile</u>. This Agreement may be executed in any number of counterparts, each of which will be deemed an original, but all of which together will constitute one and the same instrument. Any facsimile or portable document format (pdf) copies hereof or signature hereon will, for all purposes, be deemed originals.

Section 8.12 Governing Law; Venue; and Jurisdiction.

- (a) This Agreement, and all claims or causes of action (whether in contract or tort) that may be based upon, arise out of or relate to this Agreement, or the negotiation, execution or performance of this Agreement (including any claim or cause of action based upon, arising out of or related to any representation or warranty made in or in connection with this Agreement or as an inducement to enter into this Agreement), will be governed by the laws of the State of New Mexico without giving effect to any conflict or choice of law provision.
- THE PARTIES HEREBY IRREVOCABLY SUBMIT TO THE (b) EXCLUSIVE JURISDICTION OF ANY STATE OR FEDERAL COURT IN NEW MEXICO FOR PURPOSES OF ANY SUIT, ACTION OR OTHER PROCEEDING ARISING OUT OF THIS AGREEMENT OR ANY TRANSACTION CONTEMPLATED HEREBY AND EACH PARTY HEREBY CONSENTS TO THE JURISDICTION OF SUCH COURTS (AND OF THE APPROPRIATE APPELLATE COURTS THEREFROM) IN ANY SUCH SUIT, ACTION OR PROCEEDING AND IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY LAW, ANY OBJECTION THAT IT MAY NOW OR HEREAFTER HAVE TO THE LAYING OF THE VENUE OF ANY SUCH SUIT, ACTION OR PROCEEDING IN ANY SUCH COURT OR THAT ANY SUCH SUIT, ACTION OR PROCEEDING THAT IS BROUGHT IN ANY SUCH COURT HAS BEEN BROUGHT IN AN INCONVENIENT DURING THE PERIOD A LEGAL DISPUTE THAT IS FILED IN ACCORDANCE WITH THIS SECTION 8.12 IS PENDING BEFORE A COURT, ALL ACTIONS, SUITS OR PROCEEDINGS WITH RESPECT TO SUCH LEGAL DISPUTE

OR ANY OTHER LEGAL DISPUTE, INCLUDING ANY COUNTERCLAIM, CROSS-CLAIM OR INTERPLEADER, WILL BE SUBJECT TO THE EXCLUSIVE JURISDICTION OF SUCH COURT. EACH PARTY HEREBY WAIVES, AND WILL NOT ASSERT AS A DEFENSE IN ANY LEGAL DISPUTE, THAT (A) SUCH PARTY IS NOT SUBJECT THERETO, (B) SUCH ACTION, SUIT OR PROCEEDING MAY NOT BE BROUGHT OR IS NOT MAINTAINABLE IN SUCH COURT, (C) SUCH PARTY'S PROPERTY IS EXEMPT OR IMMUNE FROM EXECUTION, (D) SUCH ACTION, SUIT OR PROCEEDING IS BROUGHT IN AN INCONVENIENT FORUM OR (E) THE VENUE OF SUCH ACTION, SUIT OR PROCEEDING IS IMPROPER. A FINAL JUDGMENT IN ANY ACTION, SUIT OR PROCEEDING DESCRIBED IN THIS SECTION 8.12 FOLLOWING THE EXPIRATION OF ANY PERIOD PERMITTED FOR APPEAL AND SUBJECT TO ANY STAY DURING APPEAL WILL BE CONCLUSIVE AND MAY BE ENFORCED IN OTHER JURISDICTIONS BY SUIT ON THE JUDGMENT OR IN ANY OTHER MANNER PROVIDED BY APPLICABLE LAWS.

(c) EACH PARTY HEREBY WAIVES, TO THE FULLEST EXTENT PERMITTED BY LAW, ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY.

Section 8.13 Waiver of Remedies; Legal Fees.

All claims, obligations, liabilities, or causes of action (whether in contract or in tort, in law or in equity, or granted by statute) that may be based upon, in respect of, arise under, out or by reason of, be connected with, or relate in any manner to this Agreement, or the negotiation, execution, or performance of this Agreement (including any representation or warranty made in, in connection with, or as an inducement to, this Agreement), may be made only against (and are those solely of) Seller and Buyer ("Contracting Parties"). No Person who is not a Contracting Party, including without limitation any director, officer, employee, incorporator, member, partner, manager, stockholder, affiliate, agent, attorney, or Representative of, and any financial advisor or lender to, any Contracting Party, or any director, officer, employee, incorporator, member, partner, manager, stockholder, affiliate, agent, attorney, or Representative of, and any financial advisor or lender to, any of the foregoing ("Nonparty Affiliates"), will have any liability (whether in contract or in tort, in law or in equity, or granted by statute) for any claims, causes of action, obligations, or liabilities arising under, out of, in connection with, or related in any manner to this Agreement or based on, in respect of, or by reason of this Agreement or its negotiation, execution, performance, or breach; and, to the maximum extent permitted by law, each Contracting Party hereby waives and releases all such liabilities, claims, causes of action, and obligations against any such Nonparty Affiliates. Without limiting the foregoing, to the maximum extent permitted by law, (a) each Contracting Party hereby waives and releases any and all rights, claims, demands, or causes of action that may otherwise be available at law or in equity, or granted by statute, to avoid or disregard the entity form of a Contracting Party or otherwise impose liability of a Contracting Party on any Nonparty Affiliate, whether granted by statute or based on theories of equity, agency, control, instrumentality, alter ego, domination, sham, single business enterprise, piercing the veil, unfairness, undercapitalization, or otherwise; and (b) each Contracting Party disclaims any reliance upon any Nonparty Affiliates with respect to the performance of this Agreement or any representation or warranty made in, in connection with, or as an inducement to this Agreement.

(b) If a court of competent jurisdiction determines that either Party has breached this Agreement, such Party will reimburse the non-breaching Party for its costs and expenses (including, without limitation, legal fees and expenses) incurred in connection with such litigation.

Section 8.14 Specific Performance. The Parties acknowledge and agree that irreparable damage would occur in the event that any of the provisions of this Agreement were not performed in accordance with their specific terms or were otherwise breached. It is accordingly agreed that the Parties shall be entitled to an injunction or injunctions to prevent breaches or threatened breaches of this Agreement and to specifically enforce the terms and provisions of this Agreement and any other agreement or instrument executed in connection herewith or contemplated hereby, and the Parties agree that specific performance is the remedy intended by the parties for any such breaches or threatened breaches. The Parties further agree that (a) by seeking the remedies provided for in this Section 8.14, a Party shall not in any respect waive its right to seek any other form of relief that may be available to a party under this Agreement, including monetary damages and (b) the commencement of any Action pursuant to this Section 8.14 or anything contained in this Section 8.14 shall not restrict or limit any other remedies under this Agreement that may be available then or thereafter.

Section 8.15 <u>Reinstatement</u>. If and to the extent that for any reason any payment made pursuant to this Agreement is rescinded or otherwise restored to the Party that originally made such payment or any other Person, whether as a result of any proceedings in bankruptcy or reorganization or otherwise or as a result of any settlement or compromise, the obligations of such Party hereunder shall automatically be reinstated, and such Party shall pay the other Party on demand all of its reasonable costs and expenses (including reasonable fees of counsel) incurred in connection with such rescission or restoration.

[Signature pages follow]

IN WITNESS WHEREOF, this Agreement has been duly executed and delivered by the duly authorized officer of each Party as of the date first above written.

SELLER:

INVENERGY WIND DEVELOPMENT NORTH AMERICA LLC,

a Delaware limited liability company

By: Name:

Title:

COMPANY:

SAGAMORE WIND ENERGY LLC,

a Delaware limited liability company

By:____ Name:

Title:

IN WITNESS WHEREOF, this Agreement has been duly executed and delivered by the duly authorized officer of each Party as of the date first above written.

BUYER:

SOUTHWESTERN PUBLIC SERVICE COMPANY, a New Mexico corporation

Name: David T. Hudson

Title: President

Exhibit A

Form of Company Assignment Agreement

Assignment of Membership Interests Agreement

This Assignment of Membership Interests Agreement (the "Agreement") is entered int
this day of, 2017 by and between Invenergy Wind Development Nort
America LLC, a Delaware limited liability company (the "Assignor"), and Southwestern Publi
Service Company, a New Mexico corporation (the "Assignee").

RECITALS

WHEREAS, Assignor owns all of the membership interests (the "Membership Interests") in $[\bullet]$, a $[\bullet]$ (the "Company");

WHEREAS, the Assignor, the Company and Assignee entered into that certain Purchase and Sale Agreement dated March 9, 2017 (the "PSA");

WHEREAS, Assignor agreed in the PSA to assign, transfer and set over onto Assignee the Membership Interests and all of Assignor's right, title and interests therein and thereto subject to the terms and conditions of the PSA; and

WHEREAS, Assignee agreed in the PSA to assume all the Membership Interests and all of the obligations of Assignor as sole member and holder of the Membership Interests subject to the terms and conditions of the PSA.

NOW THEREFORE, in consideration of the exchange of representations, warranties and covenants set forth herein and in the PSA and for other good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, the parties hereto covenant and agree as follows:

- 1. <u>Assignment by Assignor</u>. The Assignor hereby assigns, transfers and sets over onto the Assignee all of the Membership Interests and all of Assignor's right, title and interests therein and thereto including all benefits, advantages, rights and obligations related thereto (the "<u>Assignment</u>").
- 2. <u>Assumption by Assignee</u>. The Assignee hereby accepts the Assignment and assumes all the Membership Interests and all of Assignor's right, title and interests therein and thereto including all benefits, advantages, rights and obligations related thereto.
- 3. <u>PSA</u>. This Agreement is executed and delivered pursuant to the PSA and is subject to all of the terms, conditions and obligations set forth therein. Nothing in this Agreement shall, or shall be deemed to, modify or otherwise affect any provisions of the PSA or affect the rights of the parties under the PSA. In the event of any conflict between the provisions hereof and the provisions of the PSA, the provisions of the PSA shall govern and control.

Attachment RH-4 Page 72 of 239 Case No. 17-00044-UT

- 4. <u>Counterparts</u>. This document may be executed in any number of counterparts, each of which may be executed by any one or more of the parties hereto, but all of which shall constitute one instrument.
- 5. **Governing Law**. This Agreement and the rights and obligations of the Parties and any dispute arising under or relating thereto shall be governed by the laws of the State of New Mexico, without giving effect to the conflict of law rules thereof.

[Signature Page Follows]

Attachment RH-4 Page 73 of 239 Case No. 17-00044-UT

IN WITNESS WHEREOF, Assignor and Assignee have executed this Agreement as of the date and year first set forth above.

Assignee:	Assignor:
Southwestern Public Service Company, a New Mexico corporation	Invenergy Wind Development North America LLC, a Delaware limited liability company
By: Name: Its:	By: Name: Its:

Attachment RH-4 Pages 74 through 132 of 239 Case No. 17-00044-UT

Attachment RH-4

Pages 74 through 132

Are

Confidential Protected Information

CONFIDENTIAL PROTECTED MATERIALS PROVIDED PURSUANT TO PROTECTIVE ORDER

Attachment RH-4 Page 133 of 239 Case No. 17-00044-UT

Exhibit D

Geotechnical Testing Requirements

1. Geotechnical Engineering Services SOW

a. Mobilization

- (1) Truck mounted drill or hydraulic rig(s) will be mobilized to the site to complete the subsurface field exploration. Geotechnical Engineer assumes all geotechnical field investigation locations are accessible to truck mounted equipment.
- (2) Geotechnical Engineer's drilling investigation will perform utility locate survey at each boring location in accordance with State requirements for soundings located on public property.
- (3) Seller will determine investigation site locations based on Owner input and approval, provide site coordinates of these locations, and survey and stake the locations. Seller will stake investigation locations a minimum of three days prior to the start of the investigation.
- (4) Seller will gain landowner permissions and obtain access to all investigation locations in a manner that allows Geotechnical Engineer to complete the work in one mobilization.

b. Geotechnical Borings at Proposed Turbines

- (1) The total number of geotechnical tests at the Sagamore Wind Project Site required by the Purchase and Sale Agreement to which this document is attached will be performed, including alternate locations. The tests shall consist of 100% geotechnical bores. However, pending Owner approval, the use of cone-penetrometer-tests (CPT) at 100% of the geotechnical test locations plus geotechnical bores at a minimum of 10% of the geotechnical test locations may be allowed. Each test will be extended to a depth of 50 feet except as noted. The depth of investigation may be reduced at the discretion of the geotechnical engineer if hard rock or stiff soil conditions are encountered. Geotechnical borings will be advanced using hollow stem auger or air rotary drilling techniques through soil and rock with logging based on visual identification of the boring cuttings. Samples will be collected at 2 ½-foot intervals to a depth of 15 feet and then at 5-foot intervals either by driving a split spoon sampler or pushing a Shelby tube. For the top 8 feet of soil, bulk samples may be collected from auger cuttings.
- (2) Groundwater levels in the borings, if any, will be measured during and immediately following drilling. Alternatively, temporary piezometers shall be installed at all geotechnical testing locations. Groundwater levels measured by

temporary piezometers shall be recorded twice: once after installation and again after equilibrium is achieved.

c. Geotechnical Borings at Proposed Substation(s)

- (1) Eight (8) geotechnical borings will be performed at each proposed substation location, each to a depth of 40 feet. The bores shall be located such that there is one bore at each main power transformer, one at the dead end structure, one at the control house, at least two near the high side structures and at least two near the low side structures. Geotechnical borings will be advanced using hollow stem auger or air rotary drilling techniques through soil and rock with logging based on visual identification of the boring cuttings. Samples will be collected at 2 ½-foot intervals to a depth of 15 feet and then at 5-foot intervals either by driving a split spoon sampler or pushing a Shelby tube. For the top 8 feet of soil, bulk samples may be collected from auger cuttings.
- (2) Groundwater levels in the borings, if any, will be measured during and immediately following drilling. Alternatively, temporary piezometers shall be installed at all geotechnical testing locations. Groundwater levels measured by temporary piezometers shall be recorded twice: once after installation and again after equilibrium is achieved.

d. Geotechnical Borings at Proposed O&M Building

- (1) Four (4) geotechnical borings will be performed at the proposed O&M building location, each to a depth of 30 feet. Geotechnical borings will be advanced using hollow stem auger or air rotary drilling techniques through soil and rock with logging based on visual identification of the boring cuttings. Samples will be collected at 2 ½-foot intervals to a depth of 15 feet and then at 5-foot intervals either by driving a split spoon sampler or pushing a Shelby tube. For the top 8 feet of soil, bulk samples may be collected from auger cuttings.
- (2) Groundwater levels in the borings, if any, will be measured during and immediately following drilling. Alternatively, temporary piezometers shall be installed at all geotechnical testing locations. Groundwater levels measured by temporary piezometers shall be recorded twice: once after installation and again after equilibrium is achieved.

e. Geotechnical Borings along Proposed Transmission Line

(1) Geotechnical boring will be performed per mile of overall length for the proposed transmission line alignment. Each boring will extend to a depth of 30 feet. Geotechnical borings will be advanced using hollow stem auger or air rotary drilling techniques through soil and rock with logging based on visual identification of the boring cuttings. Samples will be collected at 2 ½-foot intervals to a depth of 15 feet and then at 5-foot intervals either by driving a split spoon sampler or pushing a Shelby tube. For the top 8 feet of soil, bulk

Attachment RH-4 Page 135 of 239 Case No. 17-00044-UT

samples may be collected from auger cuttings.

(2) Groundwater levels in the borings, if any, will be measured during and immediately following drilling. Alternatively, temporary piezometers shall be installed at all geotechnical testing locations. Groundwater levels measured by temporary piezometers shall be recorded twice: once after installation and again after equilibrium is achieved.

f. Groundwater Measurements and Corrosion Testing

- (1) Immediately following completion of each borehole, groundwater levels will be measured. Groundwater levels will also be measured 24 hours after completion of the borehole and then backfilled immediately unless the information warrants further measurements. Alternatively, temporary piezometers shall be installed at all geotechnical testing locations. Groundwater levels measured by temporary piezometers shall be recorded twice: once after installation and again after equilibrium is achieved.
- (2) At each borehole or temporary piezometer location where groundwater is encountered, one sample will be collected and shipped to the laboratory for testing. Each sample will be tested for sulfate and chloride levels in the water.

g. Field Reconnaissance and Geotechnical Inspection

- (1) Geotechnical Engineer will review aerial photos to identify and map geotechnical features which could affect foundation design such as drainage courses and unstable slopes.
- (2) Geotechnical Engineer will perform site reconnaissance at proposed turbine locations for field identification of geotechnical risks.
- (3) Geotechnical Engineer will include the findings of the field reconnaissance in the project geotechnical report.
- (4) Seller will gain landowner permissions and obtain access to all investigation locations in a manner that allows Geotechnical Engineer to complete field reconnaissance in one mobilization.

h. Geophysical Investigation

- (1) One geophysical testing crew will be mobilized to the site to perform geophysical testing to determine the dynamic shear modulus parameters for foundation design.
- (2) Multi-Channel Analysis of Surface Waves (MASW) and Seismic Refraction (SR) testing will be completed at approximately 10 percent of the turbine locations at locations selected by Geotechnical Engineer.

Attachment RH-4 Page 136 of 239 Case No. 17-00044-UT

- (3) Results including graphical sonic data, dynamic shear modulus, Poisson's ratio and Young's modulus in graphical and tabular form will be combined into an attachment to the geotechnical report.
- (4) Seller will determine location of investigation sites, provide site coordinates of these locations, and survey and stake the locations. Seller will stake investigation locations a minimum of three days prior to the start of the investigation.
- (5) Seller will gain landowner permissions and obtain access to all investigation locations in a manner that allows Geotechnical Engineer to complete geophysical work in one mobilization. Stops in work to wait for permissions or access, or additional site mobilizations to complete the work, will require a change to this work order for stand-by time.

i. Laboratory Testing

- (1) Bulk samples, split spoon samples, and Shelby tube samples will be tested in the laboratory with some or all of the following tests performed:
 - a. Moisture Content.
 - b. Grain Size Analysis.
 - c. Atterberg Limits.
 - d. Chemical Analysis.
 - e. Standard Proctor.
 - f. Shrink-swell testing.
 - g. Soil strength testing as appropriate (unconfined compression, direct shear, and/or triaxial compression).
 - h. Soil density testing.
 - i. Specific gravity tests, as appropriate.
 - j. Consolidation.

j. Electrical and Thermal Resistivity Testing

(1) Geotechnical Engineer will perform field electrical resistivity testing at a total of 28 locations. Tests will be performed at approximately 10% proposed turbine locations and (2) tests will be completed at each proposed substation location. Locations will be designated by Seller. Tests will be performed using a 4-pin Wenner array at five different "A" spacings (2, 5, 10, 20, and 40 feet). Geotechnical Engineer will perform test using the "four point method" in accordance with ASTM Standard Test Method G57. Geotechnical Engineer will record ambient air temperatures during the test. Geotechnical Engineer will present the results in a letter report. The letter report will be issued only in

final form and electronically.

- (2) Sampling and testing shall be completed in accordance with current ASTM standards, following procedures and practices per ASTM D3740. Testing and reporting shall be in accordance with requirements of ASTM D5334-08.
- (3) The general location of sites where soil samples are to be taken will be provided to Seller. Unless otherwise indicated, Seller may exercise reasonable latitude in the actual location of sampling to allow for equipment access and maneuvering. All areas are to be restored to essentially original condition after samples are taken.
- (4) Two samples are to be collected from each test site. One sample shall be a loose mixture of soils taken between 18" and 48" below grade. The second sample shall be a thin wall tube sample of undisturbed soil at approximately 48" below grade. If rock or other conditions are encountered that prevent sampling at the depths specified, one thin wall tube sample shall be taken at the maximum possible depth with the loose sample of soils above that depth.
- (5) The loose sample shall be remolded to approximately 85% of the Standard Proctor Density before testing. The thin wall tube sample shall be tested at the "as-found" density.
- (6) All samples shall be tested at the as-found moisture content and at a minimum of three additional points as the sample is dried, including a final test at 0% moisture content. Intermediate test points shall be spaced approximately equally between 0% moisture and the as-found moisture content.
- (7) Geotechnical Engineer will present the results in a letter report. The letter report will be issued only in final form and electronically.

k. Road Subgrade Testing

- (1) Geotechnical Engineer will collect bulk samples of the subgrade at various locations selected by Geotechnical Engineer. The samples will be sent to a laboratory for California Bearing Ratio (CBR) testing in accordance with ASTM Standard Test Method D1883.
- (2) Geotechnical Engineer will evaluate the test results and provide recommendations in the geotechnical engineering report pertaining to roadway subgrade preparation and aggregate thickness.

1. Geotechnical Analysis, Engineering and Reporting

- (1) Field and laboratory data will be processed and analyzed by Geotechnical Engineer's geotechnical and foundation engineers.
- (2) Borings and geophysical results will be processed and analyzed to infer soil

- lithology, shear strength, groundwater conditions, shear and compression wave velocities, compaction, compressibility, and subgrade strength.
- (3) Laboratory tests will be processed and analyzed to infer properties related to density, compressibility, and strength.
- (4) Geotechnical Engineer will provide a general assessment of relevant site geotechnical and geological hazards and risks.
- (5) Geotechnical Engineer will provide recommendations for wind turbine foundations, including foundation type, bearing capacity, foundation stiffness, sliding friction, foundation settlement, backfill density, and cement type.
- (6) Geotechnical Engineer will provide recommendations for substation design aspects such as grading design, slab and spread footing design, and pier design.
- (7) Geotechnical Engineer will provide recommendations for main erection crane pad bearing pressures.
- (8) Geotechnical Engineer will provide recommendations for cement stabilization use and road section design for the project based on the results of laboratory testing.
- (9) Geotechnical Engineer will provide a summary of geotechnical parameters for foundation design of site ancillary structures, including the substation, met towers, transmission line, switchyard, and O&M building.
- (10) Geotechnical Engineer will present the investigation, analysis, and engineering in a geotechnical engineering report. Geotechnical Engineer will provide data and analysis in report discussion, tables, figures, and appendices. Appendices will include turbine site coordinates, boring logs, geophysical results, and laboratory test results.
- (11) Geotechnical Engineer will provide the geotechnical engineering report in draft for review and comment by Design-Builder. Geotechnical Engineer will incorporate any comments or revisions as are deemed necessary. Geotechnical Engineer will sign and stamp the report in accordance with requirements of the State of New Mexico.

m. Support of Independent Third Party Review

- (1) The engineering completed for the project will be reviewed by independent third parties on behalf of developer, investors, and lenders.
- (2) Geotechnical Engineer will assist Seller with facilitating the review process, by responding to information requests concerning Geotechnical Engineer's investigation, testing, analysis, and engineering.

(3) Geotechnical Engineer will provide copies of all Geotechnical Engineer reports, drawings, calculations, and specifications to Seller for review by third parties. Geotechnical Engineer will provide clarifications and responses with respect to information contained in these documents.

n. Geotechnical Engineer Project Administration and Coordination

(1) This task is included in all items listed above and involves coordination of information and tasks with the project team, printing and issuing of documents and reports, general project management, participation in meetings and conference calls, and administrative tasks and expenses including budget, schedule and scope monitoring and review.

2. Seller Responsibilities

- **a.** Seller will provide the documents to third parties.
- **b.** Seller will obtain necessary approvals to access the site.
- **c.** Seller will stake the locations for utility locates.

3. Deliverables

- **a.** Geotechnical Engineer will provide the following deliverables:
 - (1) Field electrical resistivity tests letter report.
 - (2) Thermal resistivity tests letter report.
 - (3) Geotechnical engineering report for use in wind turbine foundation design. This report shall include recommendations for all analyzed activities requested in this document such as: Access roads, ancillary structure foundations, and main erection crane pads.
- **b.** Documents will be provided in draft and final form in electronic form only.
- **c.** All final documents will be stamped by a professional engineer registered in the applicable project State.
- **4. Geotechnical Engineer**. Notwithstanding anything to the contrary contained in this Exhibit D, all requirements of this Exhibit D (including methodologies and amounts described herein) shall be subject to, and may be superseded by, the recommendation of the geotechnical engineer to the extent such superseding recommendations are mutually agreeable to Buyer and Seller. It is hereby agreed that compliance with such superseding recommendations shall be deemed compliance for purposes of this Exhibit D.

Exhibit E

Form of Parent Guaranty PARENT GUARANTY

This Parent Guaranty, dated as of March 9, 2017 (this "Guaranty") is made by Invenergy Wind Global LLC, a Delaware limited liability company (the "Guarantor"), in favor of Southwestern Public Service Company, a New Mexico corporation (the "Beneficiary").

RECITALS

Invenergy Wind Development LLC, a Delaware limited liability company (the "Guaranteed Party"), Sagamore Wind Energy LLC, a Delaware limited liability company, and the Beneficiary have entered into a Purchase and Sale Agreement dated as of the date hereof (the "Guaranteed Agreement").

The Guaranteed Party is an affiliate of the Guarantor, and the Guarantor has agreed to guarantee certain obligations of the Guaranteed Party under the Guaranteed Agreement as more fully set forth herein.

NOW, THEREFORE, in consideration of the premises set forth herein and other good and valuable consideration, receipt of which is acknowledged, the Guarantor hereby agrees as follows:

1. Definitions, Etc.

All capitalized terms, unless otherwise defined herein, shall have the meanings ascribed to them in the Guaranteed Agreement. The following terms when used in this Guaranty shall have the following meanings:

"Bankruptcy Event" shall be deemed to occur, with respect to any Person, if (a) that Person shall commence any case, proceeding or other voluntary action seeking to have an order for relief entered with respect to it, or seeking to adjudicate it bankrupt or insolvent, or seeking liquidation, arrangement, adjustment, winding-up, reorganization, dissolution, composition under the Bankruptcy Law or other relief with respect to it or its debts; (b) such Person shall apply for, or consent or acquiesce to, the appointment of, a receiver, administrator, administrative receiver, liquidator, sequestrator, trustee or other official with similar powers for itself or any substantial part of its assets; (c) such Person shall make a general assignment for the benefit of its creditors; (d) an involuntary case shall be commenced seeking liquidation or reorganization of such Person under the Bankruptcy Law, or seeking issuance of a warrant of attachment, execution or distraint, or any similar proceedings shall be commenced against such Person under any other applicable law and (i) such Person consents to the institution of the involuntary case against it, (ii) the petition commencing the involuntary case is not timely controverted, (iii) the petition commencing the involuntary case is not dismissed within 45 days of its filing, (iv) an interim trustee is appointed to take possession of all or a portion of the property, and/or to operate all or any

part of the business of such Person and such appointment is not vacated within 45 days, or (v) an order for relief shall have been issued or entered therein; or (e) a decree or order of a court having jurisdiction in the premises for the appointment of a receiver, administrator, administrative receiver, liquidator, sequestrator, trustee or other official having similar powers, over such Person or all or a part of its property shall have been entered; or (f) any other similar relief shall be granted against such Person under any applicable Bankruptcy Law, or such Person shall file a petition or consent or shall otherwise institute any similar proceeding under any other applicable law, or shall take any action in furtherance of, or indicating its consent to, approval of, or acquiescence in any of the acts set forth above in this definition; or (g) such Person shall generally not, or shall be unable to, or shall admit in writing its inability to, pay its debts as they become due.

"Bankruptcy Law" means Title 11, United States Code, and any other existing or future law (or any successor law or statute) of any jurisdiction, domestic (including state and federal) or foreign, relating to bankruptcy, insolvency, reorganization, conservatorship, moratorium or similar law for the relief of debtors.

"Guaranteed Obligations" means the obligations of the Guaranteed Party pursuant to Section 2.2(b) of the Guaranteed Agreement to, in the event that the Guaranteed Agreement is terminated prior to the Closing Date, pay to the Beneficiary by wire transfer of immediately available funds an amount equal to the Initial Payment then received by the Guaranteed Party, less any amounts permitted to be retained by the Guaranteed Party pursuant to Section 2.2(b), which Guaranteed Obligations shall in no event exceed (i) prior to September 30, 2017 and (ii) on or after September 30, 2017, plus all reasonable legal fees, costs and expenses incurred by Beneficiary in enforcing the obligations under this Guaranty.

"**Person**" means any individual, corporation, partnership, joint venture, association, trust, government or political subdivision or an agency or instrumentality thereof, or other entity or organization.

"Solvent" means, with respect to any Person, that as of the date of determination both (i) (a) the sum of such Person's debt (including contingent liabilities) does not exceed all of its property, at a fair valuation; (b) the Person is able to pay the probable liabilities on such Person's then existing debts as they become absolute and matured (taking into account the timing and amounts of cash to be received by such Person and the amounts to be payable on or in respect of obligations of such Person); (c) such Person's capital is not unreasonably small in relation to its business or any contemplated or undertaken transaction; and (d) such Person does not intend to incur, or believe (nor should it reasonably believe) that it will incur, debts beyond its ability to pay such debts as they become due (taking into account the timing and amounts of cash to be received by such Person and the amounts to be payable on or in respect of obligations of such Person); and (ii) such Person is "solvent" within the meaning given that term and similar terms under applicable laws relating to fraudulent transfers and conveyances. For purposes of this definition, the amount of any contingent liability at any time shall be computed as the amount that, in light of all of the facts and circumstances existing at such time, represents the amount that can reasonably be expected to become an

actual or matured liability (discounted to present value at rates believed to be reasonable by such Person acting in good faith).

2. Guaranty.

The Guarantor hereby irrevocably and unconditionally guarantees to the Beneficiary (i) the due, punctual and full payment of the Guaranteed Obligations in accordance with the terms thereof, by acceleration or otherwise, without, offset or deduction; and (ii) the due and punctual performance of, and compliance with, the Guaranteed Obligations.

3. Unconditional Nature of Obligations; Waiver.

3.1 Unconditional Nature of Obligations.

- The obligations of the Guarantor contained in Section 2 hereof are direct, (a) independent and primary obligations of the Guarantor and are absolute, present, unconditional and continuing obligations and are not conditioned in any way upon the institution of suit or the taking of any other action or any attempt to enforce performance of or compliance with the Guaranteed Obligations. Such obligations shall, without limitation, constitute a guaranty of payment and performance and not of collection, and be binding upon the Guarantor and its successors and assigns and be irrevocable without regard to (i) the genuineness, validity, legality or enforceability of the Guaranteed Agreement, (ii) the lack of power or authority of the Guaranteed Party to enter into the Guaranteed Agreement, (iii) any substitution, release or exchange of any other guaranty or any other security for any of the Guaranteed Obligations or any of the obligations under the Guaranteed Agreement, or (iv) any other circumstance whatsoever (other than full payment and performance) that might otherwise constitute a legal or equitable discharge of a surety or guarantor. Such obligations shall not be subject to any right of set-off, recoupment or counterclaim and are in no way conditioned or contingent upon (x) any attempt to collect from the Guaranteed Party or any other entity, (y) any attempt to perfect or enforce any security, or (z) any other condition or contingency or any other action, occurrence, or circumstance whatsoever.
- (b) Without limiting the generality of the foregoing, the Guarantor shall have no right to terminate this Guaranty, or to be released, relieved or discharged from its obligations hereunder, and such obligations shall be neither affected or diminished for any reason whatsoever, including, without limitation, (i) any amendment or supplement to or modification of the Guaranteed Agreement or any extension or renewal of a party's obligations under the Guaranteed Agreement, (ii) any bankruptcy, insolvency, readjustment, composition, liquidation or similar proceeding with respect to the Guaranteed Party, (iii) any furnishing or acceptance of additional security or any exchange, surrender, substitution or release of any security, (iv) any waiver, consent or other action or inaction or any exercise or non-exercise of any right, remedy or power with respect to the Guaranteed Obligations or the Guaranteed Agreement, or (v) any merger or consolidation of the Guaranteed Party or the Guaranter into or with any other Person, or any change in the structure of the Guaranteed Party or in the ownership of the Guaranteed Party by the Guarantor.

3.2 Waiver.

The Guarantor unconditionally waives, to the fullest extent permitted by applicable law, any right it may have to (i) the notice of any amendment, waiver or extension granted by or to the Guaranteed Party, (ii) all notices which may be required by applicable statute, rule of law or otherwise to preserve any of the rights of the Beneficiary against the Guaranteed Party, the Guarantor or any other person, (iii) require the Beneficiary to proceed against the Guaranteed Party or any other person or pursue any collateral or remedy within the Beneficiary's power, (iv) require acceptance of this Guaranty, diligence, presentment, demand for payment, protest and all other notices, including notice of the creation, renewal, extension or accrual of any of the Guaranteed Obligations, (v) require any election of remedies, (vi) require the marshalling of assets or the resort to any other security, (vii) except as otherwise expressly provided herein, claim any other defense, contingency, circumstance or matter which might constitute a legal or equitable discharge of a surety or guarantor, (viii) any defense based on or arising out of the voluntary or involuntary bankruptcy, insolvency, liquidation, dissolution, receivership, or other similar proceeding affecting the Guaranteed Party, or (ix) any other circumstance that might otherwise constitute a defense available to, or a legal or equitable discharge of, the Guaranteed Party, the Guarantor or any other guarantor (other than the defense of full payment and performance), subject to Section 4.2.

3.3 Subrogation.

Unless and until the obligations of the Guarantor under this Guaranty shall be discharged and released in accordance with Section 4 hereof, the Guarantor hereby waives any claim, right or remedy, direct or indirect, that the Guarantor now has or may hereafter have against the Guaranteed Party in connection with this Guaranty or the performance by the Guarantor of its obligations hereunder, in each case whether such claim, right or remedy arises in equity, under contract, by statute, under common law or otherwise.

4. Term of the Obligations of the Guarantor; Reinstatement.

- 4.1 <u>Term of the Obligations of the Guarantor</u>. Subject to Section 4.2, the obligations of the Guarantor under this Guaranty shall be discharged and released upon the earlier of (i) the date on which the Guaranteed Party has indefeasibly paid and performed in full all of the Guaranteed Obligations, and (ii) the Closing Date.
- 4.2 Reinstatement. This Guaranty and the obligations of the Guarantor hereunder shall automatically be reinstated if and to the extent that for any reason any payment made pursuant to this Guaranty or the Guaranteed Agreement is rescinded or otherwise restored to the Guarantor or the Guaranteed Party whether as a result of any proceedings in bankruptcy or reorganization or otherwise with respect to the Guaranteed Party or any other person or entity or as a result of any settlement or compromise with any person or entity in respect of such payment, and the Guarantor shall pay the Beneficiary on demand all of its reasonable costs and expenses (including reasonable fees of counsel) incurred in connection with such rescission or restoration.

5. Representations and Warranties.

The Guarantor represents and warrants to the Beneficiary as follows:

- 5.1 <u>Organization</u>. The Guarantor (i) is a corporation duly organized, validly existing and in good standing under the laws of the State of Delaware, (ii) has full power and authority to own its property, and (iii) is qualified or licensed to do business in every jurisdiction where such qualification is required, except where the failure to be so duly qualified or licensed would not result in a material adverse effect.
- 5.2 <u>Authority</u>; <u>No Conflicts</u>. The execution, delivery and performance by the Guarantor of this Guaranty are within its corporate powers and have been duly authorized by all necessary corporate, limited liability company or other action. Neither the execution and delivery of this Guaranty nor the consummation of the transactions herein contemplated nor the fulfillment of, or compliance with, the terms and provisions hereof will (1) conflict with, violate, or result in a breach of any of the terms, conditions or provisions of (i) any applicable material law, or (ii) the certificate of incorporation, bylaws or other organizational document of the Guarantor, or (iii) any material bond, debenture, note, mortgage, indenture, agreement, lease or other instrument to which the Guarantor is a party or (2) constitute, with the giving of notice or the passage of time or both, a default under any such agreement or instrument to which the Guarantor or any of its affiliates is a party.
- 5.3 <u>Enforceability</u>. This Guaranty constitutes the legal, valid and binding agreement of the Guarantor, enforceable against the Guarantor in accordance with its terms, except to the extent that the enforcement of remedies herein provided may be limited under applicable bankruptcy and insolvency and similar laws, public policy and equitable principles (regardless of whether enforcement is considered in a proceeding in equity or at law).
- 5.4 <u>Governmental Authority</u>. No governmental approvals are required for the due execution, delivery and performance by the Guarantor of this Guaranty.
- 5.5 <u>Guaranteed Agreement</u>. The Guarantor has reviewed and is familiar with the terms of the Guaranteed Agreement and has been provided with a copy of the Guaranteed Agreement.

5.6 Solvency Matters.

(a) <u>Financial Information</u>. The Guarantor has established adequate means of obtaining financial and other information pertaining to the businesses, operations and condition (financial and otherwise) of the Guaranteed Party and its properties on a continuing basis, and the Guarantor now is and hereafter will be familiar with the businesses, operations and condition (financial and otherwise) of the Guaranteed Party and its properties.

(b) <u>Insolvency</u>.

(i) After giving effect to the transactions contemplated by this Guaranty and the Guaranteed Agreement, including the contingent obligations evidenced hereby, the Guarantor is, on either an unconsolidated basis or a consolidated basis, Solvent, and the Guarantor has and will have assets which, fairly valued, exceed its indebtedness, liabilities or obligations.

- (ii) The Guarantor is not executing this Guaranty with any intention to hinder, delay or defraud any of its present or future creditor or creditors.
- (iii) The Guarantor is not engaged in any business or transaction which, after giving effect to the transactions contemplated by this Guaranty, will leave it with unreasonably small capital or assets which are unreasonably small in relation to the business or transactions engaged in by it, and the Guarantor does not intend to engage in any such business or transaction.

6. Covenants.

The Guarantor hereby covenants and agrees for the benefit of the Beneficiary that:

- 6.1 <u>Maintenance of Existence</u>. The Guarantor shall at all times do, or cause to be done, all things necessary to preserve and maintain its limited partnership or limited corporate existence, as applicable, franchises, rights and privileges in each jurisdiction in which the conduct of its business so requires, except where loss of any such franchises, rights or privileges could not reasonably be expected to have a material adverse effect on the business or financial condition of the Guarantor.
- 6.2 <u>Compliance with Laws</u>. The Guarantor shall comply, or cause compliance, in all material respects, with all requirements of law relating to it, except where such non-compliance could not reasonably be expected to have a material adverse effect on the business or financial condition of the Guarantor.
- 6.3 <u>No Bankruptcy Events</u>. The Guarantor shall not permit a Bankruptcy Event to occur with respect to the Guaranteed Party.
- 6.4 <u>Further Assurances</u>. The Guarantor shall promptly provide the Beneficiary with such information and other documents that it may reasonably request in furtherance of the intent of this Guaranty.

7. Miscellaneous.

- 7.1 <u>Amendments and Waivers</u>. No term, covenant, agreement or condition of this Guaranty may be terminated, amended or compliance therewith waived (either generally or in a particular instance, retroactively or prospectively) except by an instrument or instruments in writing executed by the Guarantor and the Beneficiary.
- 7.2 <u>Notices</u>. All notices, requests, demands and other communications under this Guaranty must be in writing and must be delivered in person or sent by overnight delivery using a nationally recognized delivery service, and properly addressed as follows:

If to Guarantor:

Invenergy Wind Development LLC One South Wacker Drive, Suite 1800 Chicago, IL 60606 Attention: General Counsel Telephone: (312) 224-1400

Email: GeneralCounsel@invenergyllc.com

If to Beneficiary:

Southwestern Public Service Company 414 Nicollet Mall, 401-04 Minneapolis, MN 55401-1927

Attention: George E. Tyson II, Senior Vice President, Corporate Development

Telephone: (612) 215-4627 Facsimile: (612) 215-4575

Email: george.tyson@xcelenergy.com

With a copy to:

Southwestern Public Service Company 414 Nicollet Mall, 401-09 Minneapolis, MN 55401-1927

Attention: Scott Wilensky, Executive Vice President and General Counsel

Telephone: (612) 330-5942 Facsimile: (612) 215-9025

Email: scott.wilensky@xcelenergy.com

And a copy to (which shall not constitute notice):

Orrick, Herrington & Sutcliffe LLP Suite 4100 1301 McKinney Street Houston, TX 77010 Attention: Dahl Thompson

Telephone: (713) 658-6611 Facsimile: (713) 658-6401

Email: Dahl.thompson@Orrick.com

Any of the foregoing Persons may from time to time change its address for the purpose of notices to that Person by a similar notice specifying a new address, but no such change is effective until it is actually received by the Person sought to be charged with its contents.

All notices and other communications required or permitted under this Guaranty which are addressed as provided in this Section 7.2 are effective upon delivery.

7.3 No Waiver. No failure on the part of the Beneficiary to exercise, and no course of dealing with respect to, and no delay in exercising, any right, power or remedy hereunder shall operate as a waiver thereof, nor shall any single or partial exercise by the Beneficiary

of any right, power or remedy hereunder preclude any other or further exercise thereof or the exercise of any other right, power or remedy. The remedies herein are cumulative and are not exclusive of any remedies provided by applicable law.

- 7.4 <u>Successors and Assigns</u>. This Guaranty shall be binding upon and shall inure to the benefit of, and shall be enforceable by, the Guarantor and the Beneficiary and their respective successors and assigns. This Guaranty may not be assigned or delegated by the Guarantor without the consent of the Beneficiary (in its sole discretion), and any such purported assignment shall be void and of no force or effect.
- 7.5 <u>Collateral Assignment to Financing Parties</u>. The Guarantor agrees and acknowledges that the Beneficiary shall be permitted to assign all of its right, title and interest in, to and under this Guaranty to Persons providing financing for the benefit of the Beneficiary. The Guarantor agrees execute and deliver a consent to such assignment and such other documents as may be reasonably requested by the financing parties, including customary legal opinions and certificates.
- 7.6 <u>Governing Law.</u> THIS GUARANTY SHALL BE CONSTRUED IN ACCORDANCE WITH AND GOVERNED BY THE LAWS OF THE STATE OF MINNESOTA.

7.7 SUBMISSION TO JURISDICTION; WAIVERS. EACH PARTY HERETO HEREBY IRREVOCABLY AND UNCONDITIONALLY:

- (a) SUBMITS FOR ITSELF AND ITS PROPERTY IN ANY LEGAL ACTION OR PROCEEDING RELATING TO THIS GUARANTY, OR FOR RECOGNITION AND ENFORCEMENT OF ANY JUDGMENT IN RESPECT THEREOF, TO THE NON-EXCLUSIVE GENERAL JURISDICTION OF ANY COURT MINNEAPOLIS, MINNESOTA, OR IN THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF MINNESOTA;
- (b) CONSENTS THAT ANY SUCH ACTION OR PROCEEDING MAY BE BROUGHT IN SUCH COURTS AND, TO THE EXTENT PERMITTED BY LAW, WAIVES ANY OBJECTION THAT IT MAY NOW OR HEREAFTER HAVE TO THE VENUE OF ANY SUCH ACTION OR PROCEEDING IN ANY SUCH COURT OR THAT SUCH ACTION OR PROCEEDING WAS BROUGHT IN AN INCONVENIENT COURT AND AGREES NOT TO PLEAD OR CLAIM THE SAME;
- (c) AGREES THAT SERVICE OF PROCESS IN ANY SUCH ACTION OR PROCEEDING MAY BE EFFECTED BY MAILING A COPY THEREOF BY REGISTERED OR CERTIFIED MAIL (OR ANY SUBSTANTIALLY SIMILAR FORM OF MAIL), POSTAGE PREPAID, TO ITS ADDRESS SET FORTH IN SECTION 7.2 OR AT SUCH OTHER ADDRESS OF WHICH THE OTHER PARTIES SHALL HAVE BEEN NOTIFIED; AND
- (d) AGREES THAT NOTHING HEREIN SHALL AFFECT THE RIGHT TO EFFECT SERVICE OF PROCESS IN ANY OTHER MANNER

PERMITTED BY LAW OR SHALL LIMIT THE RIGHT TO SUE IN ANY OTHER JURISDICTION.

- 7.8 <u>WAIVER OF JURY TRIAL</u>. EACH PARTY HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING ARISING OUT OF OR RELATING TO THIS GUARANTY OR THE TRANSACTIONS CONTEMPLATED HEREBY.
- 7.9 <u>Severability</u>. Whenever possible, each provision of this Guaranty shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Guaranty shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provision or the remaining provisions of this Guaranty.
- 7.10 <u>Headings</u>. The headings of the Sections of this Guaranty are inserted for purposes of convenience only and shall not be construed to affect the meaning or construction of any of the provisions hereof.

[Remainder of page left intentionally blank; signature page follows]

IN WITNESS WHEREOF, THIS GUARANTY HAS BEEN DULY EXECUTED AND DELIVERED AS OF THE DAY AND YEAR FIRST ABOVE WRITTEN.

Invenergy Wind Global LLC

By:______

Name: Title:

James T. Murphy

Vice President

ACCEPTED AND AGREED:

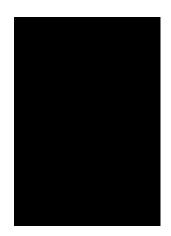
Southwestern Public Service Company, a New Mexico corporation

Title: President

Attachment RH-4 Page 151 of 239 Case No. 17-00044-UT

Execution Version

SCHEDULE 1.1-K KNOWLEDGE



SCHEDULE 1.1–PL PERMITTED LIENS

SCHEDULE 2.6(b)(vi) LIENS TO BE RELEASED

SCHEDULE 2.6(b)(ix) REQUIRED CONSENTS

Attachment RH-4 Pages 155 through 165 of 239 Case No. 17-00044-UT

Attachment RH-4 Pages 155 through 165 Are Confidential Protected Information

CONFIDENTIAL PROTECTED MATERIALS PROVIDED PURSUANT TO PROTECTIVE ORDER

SCHEDULE 2.6(d)(i) TITLE COMMITMENT AND SURVEY REQUIREMENTS

The terms of this Schedule 2.6(d)(i) are subject to the terms of <u>Section 2.6(d)(i)</u> of the Agreement and the Title Commitment and Survey shall be prepared, reviewed and finalized in accordance with the terms of this Schedule 2.6(d)(i) and the terms of <u>Section 2.6(d)(i)</u> of the Agreement:

- 1. General Title Commitment Requirements. Seller shall be responsible for ordering the Title Commitment from the Title Company and requesting all revisions and updates to the Title Commitment from the Title Company as may be required from time to time pursuant to Section 2.6(d) of the Agreement. The effective date of the Title Commitment and each revised and updated Title Commitment shall be through the most recent date available in the real property records at the time of search. The Title Commitment may initially use legal descriptions for each parcel of real property from the Land Contracts, but shall be revised once the Survey is available to conform to the legal descriptions from the Survey. The Title Commitment shall include all matters required by, and conform to, the definition thereof in Section 1.1 of the Agreement.
- 2. General Survey Requirements. The Survey shall list every recorded exception appearing in the Title Commitment, with a note stating whether the exception affects the property, and if so whether the exception is plottable. If the exception is plottable, it must be plotted on the Survey and include a reference to the exception number from the Title Commitment to identify it on the Survey. If the exception is not plottable, state "not plottable" and the reason (i.e. blanket in nature, does not affect property; illegible legal description; affects property but not a survey matter). Any appurtenant easement which is plottable must also be plotted on the survey. The Survey shall include all matters required by, and conform to, the definition thereof in Section 1.1 of the Agreement.
- 3. <u>General Procedures and Timelines</u>. The following procedures and timelines will be applicable with respect to making documents and information available, preparation and review of the Title Commitments and Survey and performance of title curative requirements:
 - (a) Seller will make available to Buyer all Land Contracts for the land in the Project Area via a data site approved by the Parties.
 - (b) To the greatest extent possible, the Parties will have the Site/Project Area defined at the onset of the transaction and any changes that need to be made to it will be made subject to Section 6.6(a)(iii) of the Agreement.
 - (c) Seller will provide a complete spreadsheet of all Title Commitments ordered and will update and make the spreadsheet available to Buyer periodically, not less frequently than once every thirty (30) days, or upon request by Buyer from time to time.
 - (d) Seller will provide Title Commitments to Buyer for a first batch of the Land Contracts along with a Global Title Checklist ("GTC") which outlines the curative action Seller reasonably determines should be taken with respect to those Title Commitments. The Survey for the first batch should follow shortly thereafter. It is anticipated that the batches will comprises 25% to 30% of the total Land Contracts, but this may be adjusted by the Parties as appropriate. Seller will provide non-

- binding timelines for each of the batches of Title Commitments based on feedback from the Title Company of its expected dates for delivery to Seller.
- (e) Individual and combined Title Commitments will be organized by Lease (not by individual parcels). For example, if Wind Energy Ranch Company owns 5 separately described parcels, individual title commitments will define the lease agreement with Wind Energy Ranch Company as the insured parcel, and will include each tract owned by the Wind Energy Ranch Company as a separate tract within the title commitment, as part of one insured parcel. This same procedure will be followed in a subsequent combined Title Commitment and pro forma. A single Wind Energy Ranch Company lease agreement will not appear in multiple individual commitments; nor will the various parcels owned by Wind Energy Ranch Company be shown as separate parcels on the combined commitment and pro forma.
- (f) The Title Company shall list the relevant tax assessor parcel identification numbers (PINS) at the bottom of each legal description.
- (g) The Title Company shall ensure that each combined Title Commitment and proforma policy should be numbered in one (1) continuous sequence (as opposed to restarting the numbering for each agreement). Neither the combined Title Commitment nor the proforma policy shall be renumbered without explicit direction from Seller and Buyer. Revised combined commitments or proforma policy drafts will contain comparisons (i.e. redlines) of the revised drafts against the last circulated drafts of the same.
- (h) Seller will provide a draft of the template for each title curative document Seller will be obtaining.
- (i) Buyer will provide comments to the GTC, survey and the curative templates within the GTC document and relevant template.
- (j) Seller will then draft all title curative documents that the parties agree to on the GTC and will submit to the landowners for signatures.
- (k) Seller will provide the final batch (unless the searches fall into 3 batches) of Title Commitments, an updated GTC to include the second batch and the rest of the Survey. This can overlap with the work on the initial batch(es) to the extent the additional batches are ready or time concerns require this approach.
- (l) Buyer will provide comments on the second GTC and survey.
- (m)Seller will provide a combined Title Commitment/proforma from the Title Company.
- (n) Buyer will provide their comments to the title policy at this time.
- (o) Title Company will update the proforma upon receipt of comments from Buyer and any title curative documents received from Seller.
- (p) Seller will handle recording of all title curative documents and provide those to the Title Company.
- (q) We will continue this process of updating the proforma and Survey while we are completing title curative requirements.

Once complete with title curative requirements the Title Company and surveyor will circulate a final proforma and Survey for Buyer to sign-off on.

SCHEDULE 4.5(d) REPORTS

Α.	REPORTS
	Phase I Environmental Site Assessment Hiway Wind Farm by Enercon Services, Inc. completed February 12, 2009
	Licensed Microwave Search by Comsearch completed December 16, 2008
	Desktop NEPA Site Screening Proposed Hiway Wind Farm by Enercon Services, Inc. completed February 2009
	Letter of No Concern from NTIA by Comsearch completed March 10, 2009
	Letter of No Roosevelt County Zoning Permit by Chermac Energy Corporation completed February 4, 2010
	Feasibility Cluster Study for Generator Interconnection Requests (FCS-2016-003) by Southwest Power Pool completed October 2016
	Lesser Prairie-Chicken by Western EcoSystems Technology, Inc. completed November 11, 2016
	Feasibility Report by Aviation Systems, Inc. completed October 27, 2016
	Updated Licensed Microwave Search Study by Comsearch completed November 21, 2016
	Site Characterization Study, Highway Wind Energy Project, Roosevelt, New Mexico – Critical Issues Analysis/Tier 1 and Tier 2 Environmental Report by Western EcoSystems Technology, Inc. completed December 9, 2016

Attachment RH-4 Page 169 of 239 Case No. 17-00044-UT

SCHEDULE 4.6 BANK ACCOUNTS

None.

SCHEDULE 4.10 UNDISCLOSED LIABILITIES

Attachment RH-4 Page 171 of 239 Case No. 17-00044-UT

SCHEDULE 4.11 TAXES

None.

SCHEDULE 4.13(a) PURCHASED CONTRACTS

Those items listed on Schedule 4.14.

Attachment RH-4 Page 173 of 239 Case No. 17-00044-UT

SCHEDULE 4.13(b) SUPPORT OBLIGATIONS

None.

SCHEDULE 4.13(g) SHARED CONTRACTS

- 1. Service Order dated November 15, 2016 between Invenergy Wind Development LLC and Western EcoSystems Technology, Inc., which Service Order was issued pursuant to that certain Consulting Contract dated as of August 14, 2012 between Invenergy Wind Development LLC and Western EcoSystems Technology, Inc., as amended, restated, reinstated, supplemented or otherwise modified from time to time.
- 2. Service Order dated January 18, 2016 between Invenergy Wind Development LLC and Western EcoSystems Technology, Inc., which Service Order was issued pursuant to that certain Consulting Contract dated as of August 14, 2012 between Invenergy Wind Development LLC and Western EcoSystems Technology, Inc., as amended, restated, reinstated, supplemented or otherwise modified from time to time.
- 3. Amended and Restated Service Order dated February 27, 2017 between Invenergy Wind Development LLC and Western EcoSystems Technology, Inc., which Service Order was issued pursuant to that certain Consulting Contract dated as of August 14, 2012 between Invenergy Wind Development LLC and Western EcoSystems Technology, Inc., as amended, restated, reinstated, supplemented or otherwise modified from time to time.
- 4. Service Order dated February 10, 2017 between Invenergy Wind Development LLC and Western EcoSystems Technology, Inc., which Service Order was issued pursuant to that certain Consulting Contract dated as of August 14, 2012 between Invenergy Wind Development LLC and Western EcoSystems Technology, Inc., as amended, restated, reinstated, supplemented or otherwise modified from time to time.
- 5. Service Order dated February 23, 2017 between Invenergy Wind Development LLC and Western EcoSystems Technology, Inc., which Service Order was issued pursuant to that certain Consulting Contract dated as of August 14, 2012 between Invenergy Wind Development LLC and Western EcoSystems Technology, Inc., as amended, restated, reinstated, supplemented or otherwise modified from time to time.
- 6. Service Order dated January 12, 2017 between Invenergy Wind Development LLC and J. Scott Osborn, which Service Order was issued pursuant to that certain Consulting Contract dated as of January 12, 2017 between Invenergy Wind Development LLC and J. Scott Osborn, as amended, restated, reinstated, supplemented or otherwise modified from time to time.
- 7. Service Order dated January 17, 2017 between Invenergy Wind Development LLC and MAS Field Services, LLC, which Service Order was issued pursuant to that certain Consulting Contract dated as of January 16, 2015 between Invenergy Wind Development LLC and MAS Field Services, LLC, as amended, restated, reinstated, supplemented or otherwise modified from time to time.
- 8. Service Order dated February 6, 2017 between Invenergy Wind Development LLC and Blanton & Associates, Inc., which Service Order was issued pursuant to that certain Consulting Contract dated as of March 10, 2016 between Invenergy Wind Development LLC and Blanton & Associates, Inc., as amended, restated, reinstated, supplemented or otherwise modified from time to time.

Attachment RH-4 Pages 175 through 214 of 239 Case No. 17-00044-UT

Attachment RH-4

Pages 175 through 214

Are

Confidential Protected Information

CONFIDENTIAL PROTECTED MATERIALS PROVIDED PURSUANT TO PROTECTIVE ORDER

Attachment RH-4 Page 215 of 239 Case No. 17-00044-UT

SCHEDULE 4.15 PERMITS

- (i) None.
- (ii) None.
- (iii) (a) Site Permit,
 - (b) State Regulatory Approval, and
 - (c) those Permits listed on Schedule 6.6(b) to the extent required for the further development and construction of the Project.

Attachment RH-4 Page 216 of 239 Case No. 17-00044-UT

SCHEDULE 4.16 ENVIRONMENTAL MATTERS

None.

SCHEDULE 4.21 WIND DATA

Energy Estimate Summary as provided October 20, 2016 in the data room Met Tower Commissioning Forms as provided October 20, 2016 in the data room MET Tower locations as provided October 20, 2016 in the data room Raw Data for Met towers as provided October 20, 2016 in the data room Met Tower logger data and pictures as provided October 28, 2016 in the data room Validated Data for Met towers as provided October 27, 2016 in the data room Energy Estimate Summaries as provided January 31, 2017 in the data room

SCHEDULE 4.22 INSURANCE



CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY) 12/19/2016

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PPOD	UCER				CONTAC	T					
	Risk Services Central, Inc.				NAME: PHONE	(966)	283-7122	FAX (A/C. No.):	(900)	363-010) [
	ago IL Office East Randolph				(A/C. No. E-MAIL	Ext): (800) 2	203-7122	(A/C. No.):	(800)	303-010	,,
	ago IL 60601 USA				ADDRES	SS:				ī	
						INS	URER(S) AFFO	RDING COVERAGE			NAIC#
INSUF	ED				INSURE	RA: Feder	ral Insuran	nce Company			20281
	energy Wind Development Th America LLC				INSURE	RB:					
One	South Wacker Drive, Suite 1900				INSURE	R C:					
Cnic	ago IL 60606 USA				INSURE	R D:					
					INSURE	R E:					
					INSURE	RF:					
				NUMBER: 5700647826				EVISION NUMBER			
INI CE	IS IS TO CERTIFY THAT THE POLICIES (DICATED. NOTWITHSTANDING ANY REC RTIFICATE MAY BE ISSUED OR MAY PI CLUSIONS AND CONDITIONS OF SUCH	UIRE ERTA	EMEN AIN, T	T, TERM OR CONDITION THE INSURANCE AFFORD	OF ANY ED BY 1	CONTRACT THE POLICIES	OR OTHER DESCRIBE	DOCUMENT WITH R D HEREIN IS SUBJI	RESPE ECT T	CT TO \ O ALL T	WHICH THIS
INSR LTR	TYPE OF INSURANCE	ADDL	SUBR WVD	POLICY NUMBER		POLICY EFF	POLICY EXP (MM/DD/YYYY)		LIMIT		201042000
A	X COMMERCIAL GENERAL LIABILITY		****	35848841			06/01/2017	EACH OCCURRENCE			\$1,000,000
	CLAIMS-MADE X OCCUR							DAMAGE TO RENTED PREMISES (Ea occurren	ice)		\$1,000,000
								MED EXP (Any one pers			\$25,000
								PERSONAL & ADV INJU	JRY		\$1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:							GENERAL AGGREGATE			\$2,000,000
	POLICY PRO- JECT X LOC							PRODUCTS - COMP/OP	AGG		Included
	OTHER:										
	AUTOMOBILE LIABILITY							COMBINED SINGLE LIM (Ea accident)	1IT		
	ANY AUTO							BODILY INJURY (Per pe	erson)		
	OWNED SCHEDULED AUTOS							BODILY INJURY (Per acc	cident)		
	HIRED AUTOS NON-OWNED							PROPERTY DAMAGE (Per accident)			
	ONLY AUTOS ONLY							(Fer accident)			
Α	X UMBRELLA LIAB X OCCUR			79851261		06/01/2016	06/01/2017	EACH OCCURRENCE			\$10,000,000
	EXCESS LIAB CLAIMS-MADE							AGGREGATE			\$10,000,000
	DED RETENTION										
	WORKERS COMPENSATION AND							PER STATUTE	OTH- ER		
	EMPLOYERS' LIABILITY ANY PROPRIETOR / PARTNER / EXECUTIVE							E.L. EACH ACCIDENT	ILIX		
	(Mandatory in NH)	N/A						E.L. DISEASE-EA EMPLO	OYEE		
	If yes, describe under DESCRIPTION OF OPERATIONS below							E.L. DISEASE-POLICY L	IMIT		=
									Ţ		
											100
DESC	I RIPTION OF OPERATIONS / LOCATIONS / VEHICLE	ES (AC	ORD 1	01, Additional Remarks Schedul	e, may be a	attached if more	space is require	d)			
Re:	Sagamore Wind Project: Evidence	of	Cove	rage.							1
											3
											<u> </u>
CEB	TIFICATE HOLDER			CAL	NCELLA	TION					
CER	IIFICALE HOLDER										
				E		N DATE THERE		IBED POLICIES BE C ILL BE DELIVERED IN			WITH THE
	Southwestern Public Service	Comp	any	AUTH	IORIZED R	EPRESENTATIVE					
	414 Nicollet Mall, 401-04 Minneapolis MN 55401-1927 US	Α				, ~		<i>C</i> 2			
					Q	lon Si	isk Ser	vices Centr	al.	Ino.	
									-	•	

SCHEDULE 6.6(b) CERTAIN DEVELOPMENT WORK

1.0 FEDER	RAL				Sagai
Federal Emergency Management Agency (FEMA)	Federal Communications Commission (FCC)		Environmental Protection Agency (EPA) in coordination with the State Regulatory Authority	Agency	Sagamore Wind Energy Center
1.6	1.4	1.2	1.1	Item	nter
Flood Plain Designations	Microwave Study National Telecommunications and Information Administration (NTIA) Filing	Spill Prevention Control and Countermeasure Plan (SPCC) National Pollutant Discharge Elimination System Stormwater Permit	Phase I Environmental Site Assessment (which shall not be dated earlier than 180 days prior to the Closing Date)	Permit/Needed Action	
Determine areas within 100 year flood plain for financing; no submittal required to FEMA	Determine if needed Determine if needed	Develop and implement SPCC Plans Obtain NPDES construction stormwater permit and SWPPP	A report prepared for a real estate holding that identifies potential or existing environmental contamination liabilities. No submittal required to EPA	Requirement	
×	× ×		X	Seller	
		XX		Buyer	
				Notes	

National Historic Preservation Act	Federal Land Manager (BLM, USBR, Forest Service)		(FERC)	Federal Energy Regulatory	
1.12	1.11	1.10	1.9	1.8	1.7
Federal Section 106, Class I Literature Review / Class II Architectural Survey/ Class III Cultural Field Survey	Right-of-Way Crossing, if applicable	Market-Based Rate Authorization (MBA)	Qualifying Facilities (QF) Certification	Exempt Wholesale Generator Certificate (EWG)	Floodplain Development Permitting
Section 106 of the National Historic Preservation Act (NHPA) may be invoked by a Federal Agency if the Project requires federal land, funding, or permits. Seller to complete preliminary Class I literature review of National and State registered sites, and Class II or Class III field survey for preliminary turbine, collection line, and access road layout. Submit all data and reports to Buyer in a timely manner. No submittal to National	Right-of-Way grant over Federal lands	Determine if MBA is needed	Self Certification	Self Certification	Develop and submit Floodplain Development Permit, if required
×					
	X	X	×	X	X
	N/A				

	U.S. Department of Agriculture				
1.20	1.19	1.18	1.17	1.16	
FSA Mortgage Subordinations & Site- Specific Environmental Assessments	Farm Service Agency (FSA) Conservation / Grassland / Wetland Easement and Reserve Program (CRP) Releases and Consents	Conservation / Grassland / Wetland Easement and Reserve Program Filing	Federal Clean Water Act Section 404 and Section 10 Permit(s)	Preconstruction Notice (PCN)	
If FSA mortgage is in place on parcels. Mortgage subordinations to be addressed in the title	Obtain all CRP land location and contract data, to include CRP-1, and Conservation Plan. Make preliminary determinationwith landowner regarding whether land can remain in CRP and commence process as appropriate.	Coordinate filings and notifications, as required. Approvals shall not be needed.	Required for the discharge of dredged or fill material into waters of U.S. Minimal levels of fill may be covered under existing General Permits/Letters of Permission	Submit PCN for wind farm which includes facility construction, expansion or modification, if required.	based on limited wetland impacts.
×	×	×			
			X	X	

	Case No. 17-00044-U
1.25	1.24
Land-Based Wind Energy Guidelines Tier 2: Site characterization (Eagle Conservation Plan Guidance Stage 1)	Land-Based Wind Energy Guidelines Tier 1 Preliminary site evaluation (Eagle Conservation Plan Guidance Stage 1)
 Assess potential presence of species of concern, including species of habitat fragmentation concern Assess potential presence of plant communities present on site that may provide habitat for species of concern Assess potential presence of critical congregation areas for species of concern One or more reconnaissance level site visit by biologist 	 Landscape level assessment of habitat for species of concern Request data sources for existing information and literature Communicate results of surveys, including reports, or other associated data (if requested) to Service field office and Buyer in a timely manner Draft applicable section(s) of BBCS for Tier 1
×	×

												Cas	se N	0. 1	/-0	004	+4-l
1.27																	
Bald and Golden Eagle and/or Threatened and Endangered Species Incidental Take Permit, based on results found in Tier 3 Study																	
A general conditional authorization for incidental take by certain hazards of wind farms to birds	• Draft applicable section(s) of BBCS for Tier 3	project No approval required from the USFWS	indirect impacts of building and operating the	• Identify ways to mitigate potential direct and	of concern from project construction and operation	• Evaluate risk to species	office in a timely manner	or other associated data (if	surveys, including reports	required • Communicate results of	recommendations, if	USFWS, NMDGF	based on preliminary	and species of concern	threatened, endangered,	biological studies for	Conduct additional
X																	
IF APPLICABLE																	

	Case No. 17-00044-U
Federal Aviation Administration (FAA)	
Aviation tration	
1.30	1.29
Notice of Proposed Construction or Alteration	s and
Determination of No Hazard to Air Navigation needed for each structure over 200 feet tall via form 7460-1.	Service about the need for and design of other studies and research to conduct with the Service, when appropriate, particularly when impacts exceed predicted levels Communicate with the Service about ways to evaluate cumulative impacts on species of concern, particularly species of habitat fragmentation concern Conduct appropriate studies as needed Communicate results of studies with the Service Identify potential mitigation strategies to reduce impacts and discuss them with the Service Draft applicable section(s) of BBCS for Tier 5
×	

		State	Ca	SC 100. 1	/-00044-U
NM Public Regulation Commission	NM Department of Transportation		of Transportation	U.S. Department of Defense	
2.2	2.1		1.33	1.32	1.31
Site Location Permit/Transmission Line Approval/CCN/Right-of-way in excess of 100' without land owner approval	Highway Crossings/turning lanes/traffic control installations		Uninty Line Crossing License	Federal airways and airspace review near military bases	Notice of Actual Construction (Form 7460-2
Approval only required for construction of any plant designed for or capable of operation at a capacity of 300 MW or more for the generation of electricity for sale to the public within or without NM, and construction of transmission lines, designed for or capable of operations at a nominal voltage of 230 kV or more, to be constructed in connection with and to transmit electricity from	Required for facilities crossing over or under highways, turning lanes, traffic control devices and highway entrances		transmission/collection crosses federal highway	If the proposed facilities are near military bases	File 7460-2 within 5 days after the structure reaches its greatest height.
×				X	
	X		>	1	X

]		_			_	
<u> 144-C</u>	New Mexico State Engineer	2.3	Ground Water and Surface Water Diversion Permit	If water for the site will be provided by a new ground	×	
<u>'-00</u>				water well or surface		
. 17				water diversion, a permit		
No.				will be required.		
ase	New Mexico	2.4	Air Quality Source	Depending on the	×	
Ca	Environment		Registration or Permit	anticipated hours of		
	Department			operation, types of tanks,		
				and emission levels of		
				those generators, either a		
				source registration or a		
				permit could be required,		
				Title V or PSD could also		
				be implicated. Any		
				contractor who would be		
				mixing and pouring		
				concrete foundations		
				would need to have its		
				own air quality permit for		
				its concrete batch plant		
				and any related equipment		
				that would be used on site.		
		2.5	Hazardous Waste Generator	The federal resource	X	
			Identification Number	Conservation and		
				Recovery Act requires all		
				persons who generate,		
				transport, recycle, treat,		
				store, or dispose of		
				hazardous waste to notify		
				EPA or the authorized		
				state program of the waste		
				activities.		

		1	Co	ise No. 17-00044-U
	Review Committee	New Mexico State Historic Preservation Office and Cultural Properties		
	ее	ico toric tion d		
2.10	2.9	2.8	2.7	2.6
Submittal of Findings	Cultural Properties Review Committee	Cultural and Historic Resources Review of State and National Register of Historic Sites and Archeological Survey	Septic Tank Permit/Liquid Waste Disposal Permit	Solid Waste Permit
Provide results of preliminary Class I literature review and Class II or Class III cultural field survey to SHPO and Buyer for notification purposes and confirmation of knowledge of all state	May be implicated if there are cultural resources that will be impacted, or unmarked burials encountered during construction.	Complete Class I literature review and Class II or Class III field survey for preliminary turbine, collection system, and access road layout	If there will be toilet facilities on site that use a septic system, rather than being connected to municipal sewer, a septic permit is required.	If waste will be disposed of in a permitted landfill, no permit required. If waste is to be disposed of on-site, a permit may be required.
X		×		
	X		X	X

	Case r	NO. 17-0	0044-U
New Mexico Energy, Minerals and Natural Resources Department	Game and Fish	New Mexico Department of	
cico Minerals Iral Is ent	d Fish	cico ent of	
2.13	2.12	2.11	
Communication and Data	Communication and Data	Salvage Permit	
Submit preliminary turbine, collection line, and access road layout for review and comments; include Buyer on all communication	•Provide results of all preconstruction wildlife surveys, including reports, or other associated data to NMDGF when requested from the agency; include Buyer on all communication • Provide preliminary turbine, collection line, and access road layout for review and comments; include Buyer on all communication •Communicate with NMDGF during all project stages, as per USFWS' Land-Based Wind Energy Guidelines •Gain input NMDGF on state threatened, endangered, and species of concern		registered sites in a timely manner.
X	X		
		X	
		If applicable	

	for development within FEMA-designated flood	for development within FEMA-designated flood hazard areas.	for development within FEMA-designated flood hazard areas. Roosevelt County	,	for development within FEMA-designated flood hazard areas. Roosevelt County Subdivision Regulation	for development within FEMA-designated flood hazard areas. Roosevelt County Subdivision Regulation contains a series of	for development within FEMA-designated flood hazard areas. Roosevelt County Subdivision Regulation contains a series of exemptions, including one hased on parcels being at	for development within FEMA-designated flood hazard areas. Roosevelt County Subdivision Regulation contains a series of exemptions, including one based on parcels being at least 140 acres and	for development within FEMA-designated flood hazard areas. Roosevelt County Subdivision Regulation contains a series of exemptions, including one based on parcels being at least 140 acres and another that allows	for development within FEMA-designated flood hazard areas. Roosevelt County Subdivision Regulation contains a series of exemptions, including one based on parcels being at least 140 acres and another that allows division into 2 parcels	for development within FEMA-designated flood hazard areas. Roosevelt County Subdivision Regulation contains a series of exemptions, including one based on parcels being at least 140 acres and another that allows division into 2 parcels every 5 years without	for development within FEMA-designated flood hazard areas. Roosevelt County Subdivision Regulation contains a series of exemptions, including one based on parcels being at least 140 acres and another that allows division into 2 parcels every 5 years without subdivision approval. The	for development within FEMA-designated flood hazard areas. Roosevelt County Subdivision Regulation contains a series of exemptions, including one based on parcels being at least 140 acres and another that allows division into 2 parcels every 5 years without subdivision approval. The exemptions must be filed	for development within FEMA-designated flood hazard areas. Roosevelt County Subdivision Regulation contains a series of exemptions, including one based on parcels being at least 140 acres and another that allows division into 2 parcels every 5 years without subdivision approval. The exemptions must be filed for by filing a claim of	for development within FEMA-designated flood hazard areas. Roosevelt County Subdivision Regulation contains a series of exemptions, including one based on parcels being at least 140 acres and another that allows division into 2 parcels every 5 years without subdivision approval. The exemptions must be filed for by filing a claim of exemption with the	for development within FEMA-designated flood hazard areas. Roosevelt County Subdivision Regulation contains a series of exemptions, including one based on parcels being at least 140 acres and another that allows division into 2 parcels every 5 years without subdivision approval. The exemptions must be filed for by filing a claim of exemption with the County Manager ahead of	N.
-	15-01 Flood	od od otto	1 Flood X n s flood permits rithin flood	od X nits 1	od X	od X iits X	od X d d iits iits iits	od X d iits X I interpolation of the content o	od X d d nits 1 1	od X d d iits X I I I I I I I I I I I I	ood X ood ood ood ood ood ood ood ood ood oo	×		×	× ×	× ×	× ×
	Ordinance requires flood plain development permits for development within FEMA-designated flood	Ordinance requires flood blain development permits or development within TEMA-designated flood azard areas.	s flood : permits /ithin ! flood	its X	d its	d nits	its its X	d iits 1	nits X J at	d its its	ood	×	×	×	×	×	×
Flood	for development within FEMA-designated flood	for development within FEMA-designated flood hazard areas.	/ithin I flood	X	X	Y J	nne X	1 X I	I X J	i X I	od od X	×	×	×	×	×	×
	FEMA-designated flood	FEMA-designated flood hazard areas.	flood	X	X	X	M X I	I X I	X I	x 1	od X J	×	×	X	×	×	×
od d d		hazard areas.	X	X	X	X	ine X	me X]	X]	me X 1	y one y at	×	×	×	×	×	×

Attachment RH-4 Page 235 of 239 Case No. 17-00044-UT

Case No. 17-00044-U
10 business days after receipt of the claim of exemption and all required supporting information or the claim is deemed approved.

SCHEDULE 6.6(a)(iii) PROJECT BOUNDARY

																									Ca	ISC I	10. 1	7-00	044	-0.	Ĺ
ate Saved:	Tuesda 24	y, March	7, 2017 7 20	:41:07 A/ 21	22	Prepare 23	-	MChang 24	19	dinate Sy	stem: NA	D 1983 UT	M Zone 13	BN Po	oth: \\Arc	:gis-db\d	_MXDs\l	S R	ghway\sc osevel	gamore_s t Roa <mark>d</mark>	itesummo	ary_lett.m:			-			4	_		Bailey
_	25	30	29	28	27	20	6	25	30	29_	28	27	26	-25	30	29	28	27	26	25	30	29	²⁸ S	Ne 27 Roose	w Mex 26 velt Ro	kico 88 25 ad 11	30	29	28	27	Count ⊄
-+	36	31	32	33	34	3:	5	36 96	31	32 og W	33	34	35	36	31	32	33	34	35	36	31	32	33	34	35	36	31	32	33	34	Road
2	1	6	5	4	3	2	2	S Roos	6	sevelt F	4	3	2 5	Roose\ 1	elt Ro	ad 12 5	4	3	2	1	6	5	4	3	2	1	6	5	4	3	sevelt
	12	7/1	8	9	10	1	11	12	7	S Roos	9	10	11	12	7	8	9	(69 KV	11	12	7	8	9	10	11	12	7 S Roos	8 sevelt F	9 Rd 14	10	S Roc
_	13 1	18	17	16	 -	1	14	13	18	17	¹⁶ 3	s	14	13	18	17	16	op Inc	14	13	18	17	¹⁶ 3	s	14	13	18	35	16	15	
_/	24	19	20		3 <u>5</u> 3E	2	23	24	19	20	2	15	S Roo 23 Road	sevelt 16	Rd 15 19	20	21	tric Co	23	24	19	20	36	E	23	24	19	37	21	22	
	25	30	29	28	27	, 2	26	25	30	29	28	27	26	25	30	29	28	ty Elec	26	-25-	30	29	28	27	26	25	30	29	28	27	
		velt R	oad 1	33	34 S R	ı 3	35 /elt F	36 Road 1	31 8	32	33	34	35	36	31	32 Road	33	Coun It Road	35	36	31	32	33	34	35	36	31	32	33	34	
2	1	6	5	4	3		2	1	6	5	4	3 pg	2	1	6	sevelt	4	sevel	2	1	6	5	4	3 ტ	2	1	6	5	4	3	
11	12	7	8	9	10	,	11	12	t Rd	8	9	sevelt l	11	12	7	S Roo		S Ro	11	12	7	8	9	t Road	11	12	7	S Roos	9 sevelt	10 Road	20
14	13	18	S 17	Roose 16	evelt I	Road ≻	20 14	13	1800	17	16	S S	14	13	18	17	¹⁶ 4	ıs	14	13	18	17		S sevelt	14	13	18	45		15	
23	24	19	20			Ö	23	24	19	20	3	4E E Ave	S Ro	sevel 24	Road -19	21 20	3.	5 E	23	24	19	20	36	်E မို့		24 Roos	19 Sevelt F	37 Road 2		-22-	
26	25	30	29	28	2	δI	26	25	30	29	28	27	26	25	30	29	28	27	26 OZ	25 peo	30	29	28	27	26	25	30	29 <u>O</u>	28	27	
35	36	310	32	33	3	-8 o	35	36	31	32	33	34	35	36	31	32	38	34	35 as	36 96	31	32	33	34	35	36	31	32 page		34	S
2	1	6 9 5 1 6 9		4	1	3	2	1	6	5	4	3	2	1	6	5	3	3	2 0	1 Koos	6	5	4	3	2 Lie	1	6	5 Sevel		3	еха
11	12	700	8	Roos	sevel	t Roa	id 25	12	7	S Roc	9 osevel	Road	26 11	12	7	8	(345	10	11	12	7 \$ Roo	sevelt	9 Road :	10 26	11	-12 °	7	88 88	_	10	Τ
14	13	18	17	16	5S		14	13	18	17	16	5S	s 14 S Ro	13 osevel	18 t Road	27 ¹⁷	vice C	 5 <u>S</u>	14	13	18	17	16		14	13	18	Ave A	S "	15	
23 S Roos	24	19 IP02d	20		33E		23	24	19	20 S Ro	3	4E t Road	28 23	24	19	20	Ser.	5E	23	24	19	20	3	6E	23	S Ro	19 osevel	t Road	E 28 ²¹	22	
26	-25	30	29	28	3 2	27	26	25	30	29	28	27	26 S Ro	25 osevel	30 t Road	1 29 8	28	27	26	25	30	29	28	27	26	S Ro	30 osevel	29 t Road	28 29	27	
35	36	31	32	33	3 :	34	35	36	31	32/	33	34	35	36	31	III est	33 S Ro		35 t Road	30 36	31	32	33	34	35	36	31	32 S Roc		34 Road 4	30
3 10	11	12	6 7	5 8	9		3 10	2 11	1 12	6 7	5 8	4 9	3 10	2 11 S Roo	<u>60</u>	6 7 Road	5	4 9	10	11	12	7	8	9	10	11	12	7	8	9	
15	14	13	F	17	16	6	15	14	13	18 sevelt	17 Road '	16	15	3 K00	13	18	17	16	15	14	13 S Roos	18 sevelt F	17 Road 3	2 ¹⁶	15	14	13	18	17	16	
s—	23	+	-	20	2	6s ¹ 341		23	24	19	20	e	S 5E	23	24	19	20		S SE	Ť		₁₉ Road 3		6 ₁ 37		23	24	19	6S 38E	21	
3E	26	25	_	╁	2	+		26 sevelt	25	30	29	28	27	26	25	30	29	28	27	26	25	30	29	28	27	26	25	30	29	28	
34	0.5	00	31	32	3:		Roo 34	sevelt 35	Road 3	34 31	32	33	34	35	36 S	31 Roose	32	33	34	35	36	31	32	33	34	Ш	36	31	32	33	Cochi
	S Roo	osevel	t Road	135			3 /	0 140	1	6	5	4	3.L	2	1	6	Roa FRoa	d 435	Ŭ	2	1	6	5	4	3	velt Rd	1	6	5	4	Coun
10	Roose 11			1 1			10 (6	9 <i>kV)</i> 11	12	7	8	9	Dora Main St	11	12	7	8	R-o	10	e v 11 1 v	e - l-t	7	8	9	10	Hoose/	12	7	8	9	
-	14	_	-	₽	+	6 7S	-	14	13	18	17	16	7S	14	13	18	17	16		14	13	18	17	¹⁶ 7		14	13		7S	16	
7 <u>S</u> 3E	23	+	╬	+-	_	341		23	24	19 5	20	21	5E —	23	24	19	20	21	6E	23	24	19	20	21	7 E	23	24	19	38E	21	
27	26	+	5 30	+-	, 2	28	27	26	25	30	29 29	evelt-F 28	27 27	26	25	30	29	28	27	26	25	30	29	28	27	26-	25	30	29	28	
<u> </u>	120	+	-	+		4		1	-	+	+	\vdash					\top	1							34	35	36	31	32	33	l



<u>Legend</u>

Crossroads Substation Road Classification

Project Area

US/State Route

<u>Transmission Line</u>

Under 100 kV

345 - 500 kV

— Local Road



Project Area - Expected Nameplat Capacity

Rev. 01







SCHEDULE 6.6(a)(iii)(2) OPTION BOUNDARY

Date Saved	l: Friday,	March 0	3, 2017 6:			ared By: ki			dinate Sys	tem: NAE	1983 UTA	1 Zone 13	N Po	ith: \\Arc	gis-db\D\	_MXDs\		lighway\sc				d .		Ca.	se iv	0. 1	/-00	044-	-01	
23	24	19	20	21	22	23	24	19	\dashv		-	_	-	\vdash				oseve	It Road	30	29	28	27 N	ew Me 26 velt Ro	xico 88	30	29	28		Bailey County
26	25	30	29	28	27	26	25 PA	30	29 ⊃	28	27	26	-25	30	29	28	27	26 35	36	31	32	²j s 33	Roose 34	velt Ro	ad 11 36	31	32	33	$-\mathbf{k}$	Road A
35	36	31	32	33	34	35	36 AS	31	32 Pog	33	34	35	36	31 Velt Ro	32 ad 12	33	34	_				-			1	6	5	4	3	elt Ro
2	1	6	5	4	3	2	1 S	6	5 Seve	4	3	2	1	velt Ro	5	4	3	2	1	6	5	4	3	2		7	8	9		Roosev
11	12	7	8	9	10	11	12	7	S _R	9	10	11	12	7	8	9	lnc (69	11	12	7	8	9	10	11	12		evelt F	Rd 14		S
14	13	18	17	¹⁶ 3	 S	14	13	18	17	_	s	14	13	18	17	16	<u>8</u>	14	13	18	17		S SE	14	13	18	35 37	16 F	15	
23	24	19	20		3E	23	24	19	20	34 S Roo	IE sevelt	S Roo Road	sevelt 16 ²⁴	19 19	20	21	o ctric	23	24	19	20	30	,,,	23	24	19			22	
26	25	30	29	28	27	26	25	30	29	28	27	26	25	30	29 O	28	nty Ele		— 25 —	30	29	28	27	26	25	30	29	28	27	
35	Roose 36	velt R	oad 1 32	33	34 \$ Roo	35 sevelt	36 Road 1	31 8	32	33	34	35	36	31	32 PB 22 PB 24 PB	33	It Count		36	31	32	83	34	35	36	31	32	33	34	
2	1	6	5	4	3	2	1	6	5	4	Rd S	2	1	6	2 sevelt	4	osevelt		1	6	5	4	3 	2	1	6	5	4	3	
11	12	7	8	9	10	11	12	7 PZ	8	9	sevelt	11	12	7	S Roo	9	S O	n 11	12	7	8	9	Road		12	7	8 S Roos	9 sevelt l	10 Road	20
14	13	18	S 17	Roose ¹⁶	velt Ro	ad 20	13	1880 1880	17	16	S S	14	13	18	17	16	4S	14	13	18	17	_	Sever S	14	13	18	45		15	
23	24	19	20		3E 2	23	24	19	20		4E E Ave	S Ro	osevel 24	t Road	21 20	4	35 E	23	24	19	20	3	6E မှို	23	24 S Roos	19 evelt F	37 Road 2	E 22	22	
26	25	30	29	28	270	26	25	30	29	28	27	26	25	30	29	28	27	26 0	25 8	30	29	28	27	26	25	30	29 ()	28	27	
35	36	310	<u> </u>	33	34	4	36	31	32	33	34	35	36	31	32	33	34	35	36	31	32	33	34	35	36	31	32 OX	 33	34	s
2	1	6	-	4	3	2	1	6	5	4	3	2	1	6	5	3	3	20	1 0	6	5	4	3	2	1	6	5 5 Sevel		3	ха
11	12	70	3	Roos	evelt F	Road 2	12	7	S Boo	9	Road	26 11	12	7	8	(345 K	10	11	12	y 7 S Roo	osevelt	9 Road	10 26	11	-12	7	S Ros	9	10	Те
14	13	18		16	<u> </u>	14	13	18	17	16	5S	14	13	18 It Road	127 17	ice Co	5S	14	13	18	17	16	5S	14	13	18	Ave A 5 .	S 16	15	
14	24	19	20		<u>5S</u> 33E	23	24	19-	20	3	14E t Road	T	24	19	20	Servi	35E	23	24	19	20		86E	23	24 S Ro	19 osevel	37 t Road	E 21	22	
S Roo	sevel	t Road	29	28	27	26	25	30	29	28	27	26	25	30 It Road	129 6	28	27	26	25	30	29	28	27	26	25 S Ro	30 osevel	₂₉ t Road	29 28	27	
35	36	31	32	33	34	35	36	31	32	33	34	35	36	31	Na Separation	33 S R	34 00 Se V	35 elt Road	36	31	32	33	34	35	36	31	32 S Roc	sevelt		á⊪30====
3	2	1 1	6	5	4	3	2	1	6	5	4	3	2 11	50	6	5 8	9	10	211	12	6 7	5 8	9	3 10	11	12	7	5 8	<u>4</u> 9	
10	11	12	7	8	9	10	11	12	7	8	9	10	S Roc	sevelt	Road 18	31 °	16	15	14	13	18	17	. 16	15	14	13	18	17	16	
15 -6S	14	13	18	17	16	15 6S	14	13 S Roo	18 sevelt l			15 S	14	13	-	<u> </u>	\vdash	န့်s—	-	S Roo	sevelt	Road 3	6	s 7E	23	24	19	6S 38E	21	
33E	23	24	19	20	21 ;	34E	23	24	19	20		5E	23	24	19	20	-	36E	S Roo 26	sevelt 25	Road 3	29	28	27	26	25	30	29	28	
27	26	25	30	29	28	S Roo	26 osevelt			29	28	27	26	25	30	29	28	27	-	36	31	32	33	34		36	31	32	33	
34	35 S Ro	oseve	t Road	35 ³²	33	34	35	36	31	32	33	34	35		Roose	32 ≥V 0 7 RC	33 ad 3	34 5	35	30		5	4	3	Ш 2±		6	5	4	Cochran County
3	Roos	evelt (6 County	Electr	ic C00	p Inc (69 kV)	1	6	5	4	Main St	2	1	6	-5-	R-c	0 S	e v	e <u>l</u> 1	6	-	9	10	Roosevelt		7	8	9	
10	11	12	2 7	8	9	10	11	12	7	8	9	1000	11	12	7	8)-u-n		12	7	8	_	├	S		18		16	
7S	14	13	18	17		7S	14	13	18	17	16 7	ŻS 5E—	14	13	18	17	+-;	7S 36E—	14	13	18	17	16 7	7 S 7E - 1 22	14	13		7S 38E	21	
7S 33E	23	3 24	1 19	20	21	34E	23	24	19 S	20 Roos	24	22 oad-3	23	24	19	20	21	22	23	24	19	20	+-	-	23	24	19	20	\vdash	
27	26	3 25	5 30	29	28	27	26	25	30	29	28	27	26	25	30	29	28	27	26	25	30	29	28	27	26-	25	30	29	28	
	иау		Curr		Parm	ler	1	1	0	1	1	ı		I	П	I	ı	I	I	I	<u>u</u>	I	1	34	35	36	31	32	33	
Q			.011	У	60		<u> </u>	.ege	end																					
De Baca	6084				ell 84	1		\$	Cro	ssrc	ado	s Sul	hstr	ntior	n Re	add	l Cla	assifi	cati	ion										
2000			Port	ales						٠. د	J. J.															- 1	/	1		



Muleshoe

Project Area

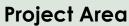
— US/State Route

<u>Transmission Line</u>

Under 100 kV

■ 345 - 500 kV

— Local Road











Attachment RH-5 Page 1 of 216 Case No. 17-00044-UT

Execution Version

PURCHASE AND SALE AGREEMENT

between

ESI ENERGY, LLC,

a Delaware limited liability company

as Seller

and

SOUTHWESTERN PUBLIC SERVICE COMPANY,

a New Mexico corporation

as Buyer

dated as of March 6, 2017

Hale Wind Energy Project

Table of Contents

		Page
Article I DEFINITIO	ONS AND CONSTRUCTION	1
Section 1.1	Definitions	
Section 1.2	Rules of Construction	
Autiala II DUDCII A C	SE AND SALE AND CLOSING	10
Section 2.1	Purchase and Sale	
Section 2.1 Section 2.2		
Section 2.3	Purchase Price; Initial Payment and Closing Payment	
Section 2.3	Closing Deliveries by Seller to Buyer	
Section 2.4 Section 2.5	Closing Deliveries by Buyer to Seller	
Section 2.5	· · ·	
Section 2.7	[Reserved]	
Section 2.7 Section 2.8	Conditions to Closing	
	Termination of Agreement	
Section 2.9	Exclusivity	
Article III REPRESE	ENTATIONS AND WARRANTIES OF SELLER	27
Section 3.1	Organization	27
Section 3.2	Authority; Enforceability	28
Section 3.3	No Conflicts; Consents and Approvals	28
Section 3.4	Legal Proceedings	28
Section 3.5	Compliance with Laws	28
Section 3.6	Brokers	
Section 3.7	Prior Acquisitions and Development Agreements	29
Article IV PEPPESI	ENTATIONS AND WARRANTIES OF SELLER REGARDING	
	MPANY AND THE PROJECT	20
Section 4.1	Organization	
Section 4.1	Reserved	
Section 4.2 Section 4.3	No Conflicts; Consents and Approvals	
Section 4.3		
Section 4.4 Section 4.5	Capitalization Business; Purchased Assets	
Section 4.5		
Section 4.6 Section 4.7	Bank Accounts	
Section 4.8	Legal Proceedings	
Section 4.9	Compliance with Laws	
Section 4.10	Assets and Liabilities; No Undisclosed Liabilities	
Section 4.11	Taxes	
Section 4.12	Regulatory Status	
Section 4.13	Contracts	
Section 4.14	Real Property	
Section 4.15	Permits	
Section 4.16	Environmental Matters	
Section 4.17	Intellectual Property	
Section 4.18	Brokers	39

Table of Contents (continued)

		Page
Section 4.19	Employees and Labor Matters	30
Section 4.19	Employee Benefits	
Section 4.21	Wind Data	
Section 4.22	Insurance	
Section 4.23	No Other Agreements to Sell the Purchased Assets	
Section 4.24	Books and Records	
Section 4.25	Studies and Reports	
Section 4.26	Affiliate Transactions.	
Section 4.27	Certain Disclaimers	
	NTATIONS AND WARRANTIES OF BUYER	
Section 5.1	Organization	
Section 5.2	Authority; Enforceability	
Section 5.2	No Conflicts	
Section 5.4	Legal Proceedings	
Section 5.5	Purchase for Investment	
Section 5.6	Brokers	
Section 5.7	Financial Resources	
Section 5.8	Certain Disclaimers	
Article VI COVENA	NTS	43
Section 6.1	Books and Records	43
Section 6.2	Transfer Taxes	43
Section 6.3	Tax Matters	44
Section 6.4	Conduct of the Company Prior to Closing	45
Section 6.5	Purchased Property	47
Section 6.6	Development Work	47
Section 6.7	Purchased Asset Transfer	50
Section 6.8	Access to Information	50
Section 6.9	Efforts; Consents; Regulatory and Required Seller Approval	51
Section 6.10	Notification of Closing	53
Section 6.11	Public Announcements	
Section 6.12	Transfer of Permits	53
Section 6.13	Further Assurances.	53
Section 6.14	Schedules	
Section 6.15	Release	55
Section 6.16	Build Out Restrictions	
Section 6.17	Support Obligations	
Section 6.18	Wind Data	58
Article VII INDEMN	IFICATION, LIMITATIONS OF LIABILITY AND WAIVERS	
Section 7.1	Survival	
Section 7.2	Indemnification by Seller	
Section 7.3	Indemnification by Buyer	
Section 7.4	Limitations on Liability	59

Table of Contents (continued)

		Page
Section 7.5	Procedures for Third Party Claims	61
Section 7.6	Indemnification Procedures	
Section 7.7	Payments of Indemnity Amounts Payable by Buyer	
Section 7.8	Payments of Indemnity Amounts Payable by Seller	
Section 7.9	Mitigation; Exclusive Remedy	
Article VIII MISCEI	LLANEOUS	65
Section 8.1	Notices	
Section 8.2	Entire Agreement	
Section 8.3	Expenses	
Section 8.4	Disclosure	
Section 8.5	Waiver	68
Section 8.6	Amendment	68
Section 8.7	No Third Party Beneficiary	68
Section 8.8	Assignment; Binding Effect	68
Section 8.9	Headings	68
Section 8.10	Invalid Provisions	68
Section 8.11	Counterparts; Facsimile	68
Section 8.12	Governing Law; Venue; and Jurisdiction	69
Section 8.13	Waiver of Remedies; Legal Fees	
Section 8.14	Specific Performance	71
Section 8.15	Reinstatement	71
Section 8.16	Set Off	71
Section 8.17	Confidentiality.	71

EXHIBITS

Exhibit A	Form of Company Assignment Agreement
Exhibit B-1	Form of Secretary's Certificate
Exhibit B-2	Form of Incumbency Certificate
Exhibit C	Wind Data License
Exhibit D	Form of Estoppel Agreement
Exhibit E	Lease Amendment
Exhibit F	Form of Resignation

SCHEDULES

1.1–DP	Design Package
1.1–K	Knowledge
1.1–PL	Permitted Liens
1.1–RE	Required Estoppels
2.7(b)(vi)	Liens to be Released
2.7(b)(ix)	Required Consents
3.3(b)	Seller Conflicts
3.3(c)	Seller Conflicts
3.7	Development Agreements
4.3(b)	Company Conflicts
4.5(c)	Purchased Assets
4.5(f)	Meteorological Towers and Equipment
4.6	Bank Accounts
4.8	Legal Proceedings
4.10	Unaudited Balance Sheet
4.11	Taxes
4.13(a)	Purchased Contracts
4.13(b)	Support Obligations
4.13(g)	Shared Contracts
4.14(a)	Land Contracts
4.14(d)	Exceptions to Section 4.14(d)
4.14(e)	Exceptions to Section 4.14(e)
4.14(g)	Zoning
4.14(1)	Sufficiency of Land Contracts
4.15	Permits
4.15(d)	Notice or Consent with respect to Permits
4.16	Environmental Matters
4.17	Intellectual Property
4.21	Wind Data
4.22	Insurance
4.25(a)	Reports
4.25(b)	Material Reports

Attachment RH-5 Page 6 of 216 Case No. 17-00044-UT

4.26	Affiliate Transactions
6.4	Buyer's Consent Individuals
6.6	Uncompleted Development Work
PND	Primavera Network Diagram

PURCHASE AND SALE AGREEMENT

This Purchase and Sale Agreement, dated as of March 6, 2017 (this "Agreement"), is between ESI Energy, LLC, a Delaware limited liability company ("Seller"), and Southwestern Public Service Company, a New Mexico corporation ("Buyer").

WITNESSETH:

WHEREAS, Hale Petersburg Wind, LLC, a Delaware limited liability company (the "*Company*"), is developing the approximately 478 megawatt target nameplate capacity wind farm known as the Hale Wind Energy Project located in Hale County, Texas (the "*Project*");

WHEREAS, the Company is a direct, wholly-owned subsidiary of Seller; and

WHEREAS, Seller desires to sell to Buyer, and Buyer desires to purchase from Seller, the Shares (as defined below) on the Closing Date (as defined below) on the terms and subject to the conditions set forth in this Agreement.

NOW, THEREFORE, in consideration of the premises and the mutual representations, warranties, covenants and agreements in this Agreement, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby agree as follows:

ARTICLE I

DEFINITIONS AND CONSTRUCTION

Section 1.1 <u>Definitions</u>. As used in this Agreement, the following capitalized terms have the meanings set forth below:

"1933 Act" means the Securities Act of 1933, as amended.

"Action" means any legal, administrative, arbitral, mediation or other alternative dispute resolution procedure or other action, proceeding, claim, assessment, audit, inquiry or similar investigation before any court, arbitrator or other Governmental Authority, in all cases whether in law or in equity.

"Affiliate" means, with respect to any Person, any other Person that directly or indirectly through one or more intermediaries, controls, is controlled by or is under common control with such Person. For purposes of this definition, "control" of a Person means the power, direct or indirect, to direct or cause the direction of the management and policies of such Person whether through ownership of voting securities or ownership interests, by Contract or otherwise.

"Agreement" is defined in the introduction to this Agreement.

"ALTA" means the American Land Title Association.

"Assets" of any Person means all assets and properties of every kind, nature, character and description (whether real, personal or mixed, whether tangible or intangible and wherever situated), including the related goodwill, which assets and properties are operated, owned or leased by such Person.

"Bankruptcy Event" shall be deemed to occur, with respect to any Person, if (a) that Person shall commence any case, proceeding or other voluntary action seeking to have an order for relief entered with respect to it, or seeking to adjudicate it bankrupt or insolvent, or seeking liquidation, arrangement, adjustment, winding-up, reorganization, dissolution, composition under the Bankruptcy Law or other relief with respect to it or its debts, (b) such Person shall apply for, or consent or acquiesce to, the appointment of, a receiver, administrator, administrative receiver, liquidator, sequestrator, trustee or other official with similar powers for itself or any substantial part of its assets, (c) such Person shall make a general assignment for the benefit of its creditors, (d) an involuntary case shall be commenced seeking liquidation or reorganization of such Person under the Bankruptcy Law, or seeking issuance of a warrant of attachment, execution or distraint, or any similar proceedings shall be commenced against such Person under any other applicable law and (i) such Person consents to the institution of the involuntary case against it, (ii) the petition commencing the involuntary case is not timely controverted, (iii) the petition commencing the involuntary case is not dismissed within 45 days of its filing, (iv) an interim trustee is appointed to take possession of all or a portion of the property, and/or to operate all or any part of the business of such Person and such appointment is not vacated within 45 days, or (v) an order for relief shall have been issued or entered therein, (e) a decree or order of a court having jurisdiction in the premises for the appointment of a receiver, administrator, administrative receiver, liquidator, sequestrator, trustee or other official having similar powers, over such Person or all or a part of its property shall have been entered, (f) any other similar relief shall be granted against such Person under any applicable Bankruptcy Law, or such Person shall file a petition or consent or shall otherwise institute any similar proceeding under any other applicable law, or shall take any action in furtherance of, or indicating its consent to, approval of, or acquiescence in any of the acts set forth above in this definition, or (g) such Person shall generally not, or shall be unable to, or shall admit in writing its inability to, pay its debts as they become due.

"Bankruptcy Law" means Title 11, United States Code, and any other existing or future law (or any successor law or statute) of any jurisdiction, domestic (including state and federal) or foreign, relating to bankruptcy, insolvency, reorganization, conservatorship, moratorium or similar law for the relief of debtors.

"Benefit Plan" means (a) "employee benefit plan," as such term is defined in Section 3(3) of ERISA, (b) each plan that would be an employee benefit plan if it was subject to ERISA, such as plans for directors, (c) each bonus, deferred compensation, equity or incentive compensation plan, (d) each employment, consulting, severance pay, change in control or other

plan, arrangement, policy or commitment and (e) any holiday, vacation or personal time-off practice or workers compensation plan or program.

"Bonita Approval" means the situation where "Company" has either obtained "State Regulatory Approval" or otherwise waived its rights, or is deemed to have waived its rights, to terminate the Bonita PPA in accordance with section 6.1 of the Bonita PPA. For purposes of this definition, the terms "Company" and "State Regulatory Approval" will have the meanings given to such terms in the Bonita PPA on the date hereof.

"Bonita Elective Termination Waiver" means the "Company" has waived, or is deemed to have waived, its rights to terminate the Bonita PPA pursuant to section 6.2 of the Bonita PPA. For purposes of this definition, the term "Company" will have the meaning given to such term in the Bonita PPA on the date hereof.

"Bonita PPA" means that certain Wind Energy Purchase Agreement, dated March 6, 2017, between Southwestern Public Service Company and Bonita Wind Energy, LLC.

"Bonita Regulatory Termination" means the termination of the Bonita PPA pursuant to section 6.1 of the Bonita PPA.

"Books and Records" means any and all documents, reports, studies, external, material correspondence, maps, surveys, and other business records necessary or useful to the Business that are generated or obtained by Seller or the Company.

"Business" means the development of the Project by the Company, including the Development Work.

"Business Day" means a day other than Saturday, Sunday or any day on which banks located in the State of New York are authorized or obligated to close.

"Buyer" is defined in the introduction to this Agreement.

"Buyer Group" is defined in Section 7.2.

"Buyer's Regulatory Approval" means the following approvals, if requested by Buyer pursuant to this Agreement, from the following Governmental Authorities on the same terms and conditions requested by Buyer (including in each case subject to any supplement or other modifications to any such request as contemplated by Section 6.9(b)) and any additional terms and conditions reasonably satisfactory to Buyer: (a) the written approval of the NMPRC and the PUCT for Buyer, or Affiliate of Buyer, to acquire (e.g., purchase), own, construct, operate, and maintain the Project, and for Buyer or its Affiliate to recover the costs of the Project for the period between the date the Project begins commercial operation and the date the costs of the Project are included in Buyer's rates; and (b) the NMPRC's and the PUCT's approval of any affiliated transaction approvals requested by Buyer.

"Buyer Released Parties" is defined in Section 6.15(a).

"Buyer Releasing Parties" is defined in Section 6.15(b).

"Claim" means any demand, claim or Action.

"Closing" means the closing of the transactions contemplated by this Agreement, as provided for in Section 2.3.

"Closing Date" means the date on which Closing occurs.

"Code" means the Internal Revenue Code of 1986, as amended.

"Commercially Reasonable Efforts" means efforts that are designed to enable a Party to satisfy a matter relating to, or condition contemplated by, this Agreement and which do not require the performing Party to expend any funds or assume liabilities other than expenditures and liabilities which are customary and reasonable in nature and amount in the context of such matter or condition.

"Company" is defined in the recitals to this Agreement.

"Company Assignment Agreement" means an assignment and transfer of the Shares, substantially in the form annexed as **Exhibit A**.

"Confidentiality Agreement" means the mutual confidentiality agreement, dated January 30, 2017, among NextEra Energy Resources Acquisitions, LLC, a Delaware limited liability company, Buyer and Vestas – American Wind Technology, Inc., a California corporation.

"Consent" means a consent, approval, authorization, waiver, filing, notice, registration, declaration or similar action of, with or by any Person.

"Construction Ready" means that (a) the Development Work shall have been completed by Seller pursuant to Section 6.6 (except as set forth in Schedule 6.6 and any other aspects of the Development Work that Buyer has, in each case in its sole discretion, waived in writing or agreed with Seller in writing would be performed by Seller or Buyer, in either case at Seller's cost, after Closing), (b) the representations and warranties set forth in Section 4.5(c) shall be true and correct in all respects and (c) except as set forth in Schedule 6.6, the Company has ownership of, or the right to use, all Assets and Permits necessary to enable a Sufficient Project to be acquired, located, developed, constructed, installed, interconnected, completed, operated and maintained on the Site (other than non-discretionary ministerial Permits that are not necessary prior to Closing).

"Continuing Support Instrument" is defined in Section 6.171.01(c)(i).

"Continuing Support Obligation" is defined in Section 6.171.01(c).

"Contract" means any legally binding contract, agreement, lease, license, evidence of Indebtedness, mortgage, indenture, purchase order, binding bid, letter of credit, security agreement or other legally binding commitments, arrangements, undertakings or understandings, whether oral or written, but excludes Governmental Approvals.

"Contracting Parties" is defined in Section 8.13.

"Data Site" means the electronic documentation site established in connection with the transactions contemplated by this Agreement.

"Default" means, with respect to any Person, any circumstance, event or condition that would constitute, with or without notice or the passage of time or both, a violation, breach, default, or give rise to any right of termination, cancellation, prepayment, suspension, limitation, revocation, purchase, re-purchase or acceleration.

"Designated Representations" means the representations and warranties contained in Section 3.1 (Organization), Section 3.2 (Authority; Enforceability), Section 3.3(a) (No Conflicts with Organizational Documents), Section 3.6 (Brokers), Section 4.1 (Organization), Section 4.3(a) (No Conflicts with Organizational Documents), Section 4.4 (Capitalization), Section 4.7 (Subsidiaries), Section 4.11 (Taxes), Section 4.18 (Brokers), Section 4.20 (Employee Benefits), Section 5.1 (Organization), Section 5.2 (Authority; Enforceability), Section 5.3(a) (No Conflicts with Organizational Documents), and Section 5.6 (Brokers).

"Design Package" is set forth in Schedule 1.1-DP.

"Development Work" is defined in Section 6.6.

"Dispute Notice" is defined in Section 7.6(b).

"Environmental Claim" means any Claim or Loss arising out of or related to Hazardous Materials, environmental or workplace contamination or pollution, or any violation or alleged violation of Environmental Law.

"Environmental Law" means the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. § 9601 et seq.; the Resource Conservation and Recovery Act, 42 U.S.C. § 6901 et seq.; the Federal Water Pollution Control Act, 33 U.S.C. § 1251 et seq.; the Clean Air Act, 42 U.S.C. § 7401 et seq.; the Toxic Substances Control Act, 15 U.S.C. §§ 2601 through 2629; the Oil Pollution Act, 33 U.S.C. § 2701 et seq.; the Emergency Planning and Community Right-to-Know Act, 42 U.S.C. § 11001 et seq.; the Bald and Golden Eagle Protection Act (16 U.S.C. §§ 668–668d); the Migratory Bird Treaty Act (16 U.S.C. §§ 703–712); the Safe Drinking Water Act, 42 U.S.C. §§ 300f through 300j; the Occupational Safety and Health Act, 29 U.S.C. § 651 et seq.; the Hazardous Materials Transportation Act, 49 U.S.C. § 5101 et seq.; and all other Laws (including implementing regulations promulgated pursuant thereto) of any Governmental Authority having jurisdiction over the assets in question addressing pollution control or protection of Protected Species, the environment, wildlife, plants, natural resources, or human health, each as amended from time to time.

"EPC Permits" is defined in Section 6.6(a).

"Equity Interests" means capital stock, partnership, membership or trust interests, shares or units (whether general or limited), and any other interest or participation that confers on a Person the right to receive a share of the profits and losses of, or distribution of assets of, the issuing entity.

"Equity Securities" means (a) Equity Interests, (b) subscriptions, calls, warrants, options or commitments of any kind or character relating to, or entitling any Person to acquire, any Equity Interests, and (c) securities convertible into or exercisable or exchangeable for Equity Interests.

"ERISA" means the Employee Retirement Income Security Act of 1974.

"Excluded Liabilities" means (a) any Liabilities relating to the Project or any present or former developer, owner or operator of the Project incurred prior to the Closing Date whether fixed, contingent or otherwise, known or unknown, (b) any Liability for Taxes of the Company or Seller to the extent attributable to any Pre-Closing Tax Period, (c) any Liability of the Company or Seller for costs and expenses incurred for the purpose of executing and performing this Agreement and the transactions contemplated hereby, and (d) any Liability under the Land Contracts, Permits, Permit applications or Contracts to which the Company is a party at Closing to the extent, with respect to each of (a) and (d), such Liability, but for Default by Seller or the Company or a waiver or extension given to or by Seller or the Company, would or should have been paid, performed or otherwise discharged on or prior to the Closing Date or to the extent such Liability arises out of any such Default, waiver or extension given to or by Seller or the Company.

"Exclusivity Period" is defined in Section 2.9.

"Final Order" means a final order of a court of competent jurisdiction, (a) from which there is no right of appeal to a higher court or (b) all applicable time periods during which an appeal may be made have expired.

"Final Site Plan" is defined in Section 6.6(1).

"FPA" means the Federal Power Act, as amended.

"Fraud" means a willful and intentional misrepresentation of material facts which constitutes common law fraud under the Laws of the State of New York.

"GAAP" means generally accepted accounting principles in the United States of America.

"Generator Interconnection Agreement" means that certain Interconnection Agreement (GEN-2012-020), dated May 29, 2014, among Hale Wind Energy, LLC, SPP, and Southwestern Public Service Company.

"Governmental Approval" means licenses, permits, certificates of authority, authorizations, approvals, registrations, franchises and similar consents and orders issued or granted by a Governmental Authority.

"Governmental Authority" means any court, tribunal, arbitrator, authority, agency, commission, official or other instrumentality of the United States or any state, county, city or other political subdivision or similar governing entity, and including any governmental, quasi-

governmental or non-governmental body administering, regulating or having general oversight over natural gas, electricity, power or other markets.

"Hazardous Material" means any substance, pollutant, contaminant, chemical, material or waste that is regulated under any Environmental Law, or which is deemed or may be deemed hazardous, dangerous, damaging or toxic to living things or the environment, and shall include, without limitation, any flammable, explosive, or radioactive materials, hazardous materials, radioactive wastes, hazardous wastes, hazardous or toxic substances or related materials, polychlorinated biphenyls, petroleum products, fractions and by-products thereof, radon; asbestos and asbestos-containing materials, medical waste, solid waste, and any excavated soil, debris, or groundwater that is contaminated with such materials.

"IE Threshold" is defined in Section 6.14.

"Implement" or "Implemented" means to own, develop, construct, finance, operate and/or maintain.

"Indebtedness" means any of the following: (a) any indebtedness for borrowed money, (b) any obligations evidenced by bonds, debentures, notes or other similar instruments, (c) any obligations to pay the deferred purchase price of property or services, except trade accounts payable and other current liabilities arising in the Ordinary Course of Business, (d) any obligations as lessee under capitalized Leases, (e) any obligations, contingent or otherwise, under acceptance, letters of credit or similar facilities, and (f) any guaranty of any of the foregoing.

"Indemnified Party" means a Person entitled to be indemnified by another Person pursuant to the terms of this Agreement.

"Indemnifying Party" means a Person required to indemnify another Person pursuant to the terms of this Agreement.

"Indemnity Amount Payable" means any Indemnity Claim Amount which has become an Indemnity Amount Payable in accordance with Article VII, plus interest on such Indemnity Claim Amount at the Interest Rate from the date that is thirty (30) days after it becomes an Indemnity Amount Payable.

"Indemnity Cap" means an amount equal to

"Indemnity Claim" means any claim made for indemnification in accordance with Article VII.

"Indemnity Claim Amount" means the amount of Losses claimed in any Notice of Claim, which amount, if not finally determined, may be a good faith estimate of the Losses that may be subject to indemnification pursuant to this Agreement.

"Indemnity Exception" is defined in Section 6.14.

"Initial Payment" is defined in Section 2.2(b).

"Intellectual Property" means the following intellectual property rights, both statutory and common law rights, if applicable, to the extent relating to the Project: (a) copyrights, registrations and applications for registration thereof, (b) trademarks, service marks, trade names, slogans, domain names, logos, trade dress, and registrations and applications for registrations thereof, (c) patents, as well as any reissued and reexamined patents and extensions corresponding to the patents, and any patent applications, as well as any related continuation, continuation in part and divisional applications and patents issuing therefrom, and (d) trade secrets and confidential information, including ideas, designs, concepts, compilations of information, methods, techniques, procedures, processes and other know-how, whether or not patentable.

"Interest Rate" means the higher of (a) a rate of interest per annum equal to the prime rate (as published in the Wall Street Journal) as in effect from time to time plus fifty (50) basis points and (b) a rate of interest per annum equal to eight percent (8%).

"Knowledge" means, when used in a particular representation in this Agreement with respect to Seller, the actual knowledge of the individuals listed on <u>Schedule 1.1–K</u> together with such knowledge as such individuals should reasonably have obtained in the ordinary course of their duties.

"Land Contracts" means the Project Leases and all separate options, easements and licenses (other than the Project Leases) executed for purposes of providing the Company or, with respect to the Purchased Assets, an Affiliate of Seller with rights in the nature of an option, easement or license in real property, as amended, modified and/or supplemented to date, individually or collectively as the context requires.

"Laws" means all laws, statutes, rules, regulations, ordinances, orders, decrees, court decisions, and other pronouncements having the effect of law of any Governmental Authority.

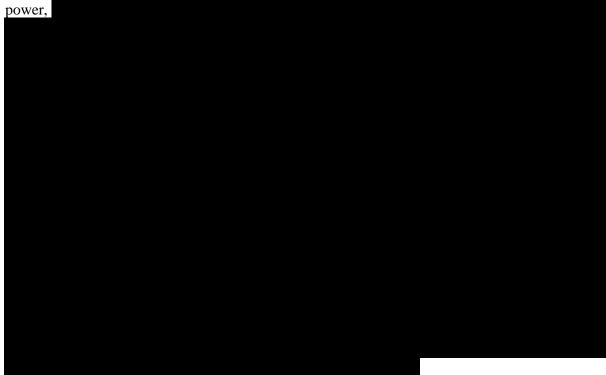
"Leases" means all leases, subleases, easements, rights to occupy or use and other arrangements with respect to real property, including, in each case, all amendments, modifications and supplements thereto and waivers and Consents thereunder.

"Liability" means all debts, liabilities, obligations, Contracts and commitments, whether known or unknown, asserted or unasserted, fixed, absolute or contingent, matured or unmatured, accrued or unaccrued, liquidated or unliquidated, due or to become due, whenever or however arising (including, whether arising out of any Contract or tort based on negligence, strict liability or otherwise).

"Lien" means, with respect to any property or other assets of a Person, any lien, charge, claim, community property interest, pledge, mortgage, hypothecation, condition, equitable interest, option, security agreement, deed of trust, encumbrance, easement, encroachment, license, sublicense, right of first refusal, right of first offer, or other restriction of any kind, including any restrictions on use, voting, transfer receipt of income or exercise of any other attribute of ownership.

"Loss" means any and all actual losses, Liabilities, amounts paid in settlement, damages, fines, penalties, costs, charges, Taxes, obligations, demands, fees, interest, and expenses (including court costs and reasonable fees of attorneys, accountants and other experts in connection with any Claim).

"Material Adverse Effect" means an event, change, occurrence, circumstance, condition, development or effect, which, individually or when taken together with the effect of all other events, changes, occurrences, circumstances, conditions, developments or effects has had or would reasonably be expected to have a material adverse effect on the business, assets, properties, liabilities, condition (financial or otherwise) of the Project or the Company; provided, however, that the following will not be considered when determining whether a Material Adverse Effect has occurred: any event, change, occurrence, circumstance, condition, development or effect (or events, changes, occurrences, circumstances, conditions, developments or effects taken together) resulting from (a) any change generally affecting the international, national or regional electric generating, transmission or distribution industry, (b) any change generally affecting the international, national or regional wholesale or retail markets for electric



"Material Portion" means, in the case of a portion of the Project, either (1) a project equal to or greater than 150 MW or (2) a project that, when combined with all other portions of the Project in respect of which a notice to proceed has been issued under a balance of plant contract, engineering procurement and construction contract or similar agreement, equals or exceeds 200 MW.

"Material Reports" means the reports listed on Schedule 4.25(b).

"Mineral Rights" means all mineral or subsurface rights or interests affecting or encumbering the Real Property Interests or any portion thereof.

"NMPRC" means the New Mexico Public Regulation Commission or any successor agency thereto.

"Nonparty Affiliates" is defined in Section 8.13.

"Notice of Claim" means a notice by one Party to the other of a claim for indemnification in accordance with Article VII.

"Objection" is defined in Section 2.7(d)(i).

"Ordinary Course of Business" means, with respect to any Person, its ordinary course of business consistent with its past practice to the extent such practices are consistent with Prudent Wind Industry Practices.

"Organizational Documents" means, with respect to any Person, the articles or certificate of incorporation or organization and by-laws, the limited partnership agreement, the partnership agreement or the limited liability company agreement, member control agreement, trust agreement, or other organizational documents of such Person, including (a) any shareholder, voting trust or similar Contract and (b) any that are required to be registered or kept in the place of incorporation, organization or formation of such Person and which establish the legal personality or governance of such Person and all authorizing consents, minutes, resolutions, powers of attorney and other similar organizational records of such Person in connection with any of the foregoing.

"Other Seller Entity" or "Other Seller Entities" means, with respect to Seller each Person that is (a) a direct or indirect Affiliate of Seller or (b) directly or indirectly twenty percent (20%) or more owned by Seller, an Affiliate of Seller, or any combination of Seller or Affiliates of Seller, assuming for purposes of this test that any and all options, warrants and other rights held directly or indirectly by Seller or any Affiliate of Seller and convertible or potentially convertible into an equity interest in such Person have been exercised or converted, as applicable.

"Parties" means collectively, Buyer and Seller.

"Permits" means those Governmental Approvals set forth on Schedule 4.15.

"Permitted Lien" means (a) any Lien for Taxes not yet due and payable, (b) any Lien that, individually or in the aggregate, (i) is of a nature commonly existing with respect to properties of a similar character and (ii) does not interfere in any material respect with the Company's ability to locate, interconnect, erect, construct, operate and maintain, on the Site, a Sufficient Project, (c) the terms and conditions of the Purchased Contracts and the Permits listed on Part I of Schedule 4.15, (d) any Lien that is (or will be) released on or prior to Closing, (e) restrictions on transfer of the Equity Interests of the Company under any applicable securities Law or the Organizational Documents of the Company, (f) (i) as of any date prior to the Closing Date, any Lien identified in any Title Commitment delivered to Buyer, and (ii) as of the Closing

Date and any date thereafter, any Lien identified in any Title Commitment reasonably satisfactory to Buyer in accordance with Section 2.7(d), (g) subject to Section 2.8(a)(v), any Mineral Rights (i) that individually or in the aggregate would not reasonably be expected to currently interfere in any material respect with the Company's ability to locate, interconnect, erect, construct, operate and maintain, on the Site, a Sufficient Project, provided that if Buyer has not exercised its termination right in accordance with Section 2.8(a)(v) such Mineral Rights shall be deemed *not* to currently interfere in any material respect with the Company's ability to locate, interconnect, erect, construct, operate and maintain, on the Site, a Sufficient Project and (ii) with respect to which the Title Company is willing to issue all endorsements related thereto required for the Proforma Title Policy, (h) any other Lien created or permitted with the written consent of Buyer in its sole discretion, (i) the matters identified on Schedule 1.1–PL, and (j) any exception to title appearing on the Title Commitment or Survey which is not identified by Buyer as an Objection in the manner and in the timeframe described in Section 2.7(d)(i).

"*Person*" means any natural person, corporation, general partnership, limited partnership, limited liability company, proprietorship, other business organization, trust, union, association or Governmental Authority.

"Pre-Closing Asset Transfer" is defined in Section 6.7.

"Pre-Closing Tax Period" means (a) all Tax periods ending on or before the Closing Date and (b) the portion of any Straddle Period ending on the Closing Date.

"Production Tax Credits" has the meaning set forth in Section 45 of the Code.

"Proforma Title Policy" means a pro forma Texas Form T-1 Owner's Policy of Title Insurance, committing to insure the Real Property Interests in the amount of the fair market value of the Project or other amount specified by Buyer and issued by the Title Company, subject only to the Permitted Liens and otherwise in form and substance satisfactory to Buyer and providing for full extended coverage over all general title exceptions contained in such policy and the following special endorsements: owner's comprehensive, zoning, survey, access, contiguity, non-imputation, tax parcel, subdivision, deletion of mandatory arbitration, location, environmental, utility facility, development of minerals, successor-in-interest and Sears endorsement and all applicable ALTA 36 Series energy project-specific endorsements and any other endorsements reasonably requested by Buyer and such additional affirmative coverage as Buyer may reasonably request, in each case, that is available in the State of Texas.

"Project" is defined in the recitals to this Agreement.

"Project Leases" means all Leases of real property with respect to the Project, including but not limited to (a) wind Leases or easements executed in favor of the Company or an Affiliate of Seller for purposes of creating a leasehold and/or easement interest in such real property, (b) easements for collection cable, crane path and access road routes executed in favor of the Company or Seller, and (c) electrical transmission line easement or access easement or right-of-way in favor of the Company or an Affiliate of Seller.

"Property Tax Agreements" means (i) the Tax Abatement Agreement between the County of Hale, Texas and Hale Wind Energy, LLC dated May 23, 2016, and (ii) the Agreement

for Limitation on Appraised Value of Property for School District Maintenance and Operations Taxes between Petersburg Independent School District and Hale Wind Energy, LLC dated November 17, 2016, in each case, as made available on the Data Site as of the date hereof.

"Protected Species" means all species and their associated habitat protected by the Endangered Species Act, 16 U.S.C. § 1531 et seq., the Migratory Bird Treaty Act 16 U.S.C. § 703 et seq., the Bald and Golden Eagle Protection Act 16 U.S.C. § 668 et seq., and applicable state and local counterparts, and their implementing regulations and guidance documents, each as amended from time to time.

"Prudent Wind Industry Practices" means the practices, methods and acts engaged in or approved by a significant portion of the wind power industry in the United States in respect of the design, development, construction, commissioning, maintenance, financing, and operation of wind power energy generation facilities of comparable type and complexity to the Project that, at a particular time, in the exercise of reasonable judgment in light of the facts known or that should reasonably have been known at the time a decision was made, would have been expected to accomplish the desired result in a manner consistent with applicable Laws, regulations, codes, standards, equipment manufacturer's recommendations, reliability, safety, environmental protection, economy and expedition. "Prudent Wind Industry Practices" does not necessarily mean the best practice, method, or standard of care, skill, safety and diligence in all cases, but is instead intended to encompass a range of acceptable practices, methods and standards.

"PUCT" means the Public Utility Commission of Texas or any successor agency thereto.

"PUHCA" means the Public Utility Holding Company Act of 2005, as amended.

"Punchlist Holdback" is defined in Section 2.2(c).

"Punchlist Items" is defined in Section 2.7(b)(ii).

"Punchlist Items Terms and Conditions" is defined in Section 2.7(b)(ii).

"Purchased Assets" is defined in Section 4.5(d).

"Purchase Price" is defined in Section 2.2(a).

"Purchased Contracts" is defined in Section 4.13(a).

"Purchased Property" is defined in Section 6.5.

"Real Property Interests" means the real property interests created under the Land Contracts and, if applicable, the Purchased Property.

"Related Parties" is defined in Section 6.15(c)(ii).

"Release" means any release, spill, emission, leaking, pumping, injection, deposit, pouring, emptying, leaching, dumping, disposal or discharge of any Hazardous Materials into the environment or workplace, and otherwise as defined in any Environmental Law.

"Released Claims" is defined in Section 6.15(c)(i).

"*Reports*" is defined in Section 4.25.

"Representatives" means, as to any Person, its officers, directors, shareholders, partners, members, owners, employees, counsel, accountants, financial advisors, consultants, agents and other representatives.

"Required Consents" is defined in Section 2.7(b)(ix).

"Required Estoppels" is defined in Section 2.7(b)(xiii).

"Required Update Schedules" means each of Schedule 2.7(b)(ix) (Required Consents), Schedule 4.5(f) (Meteorological Towers and Equipment), Schedule 4.10 (Unaudited Balance Sheet), Schedule 4.13(a) (Purchased Contracts), Schedule 4.13(b) (Support Obligations), Schedule 4.14(a) (Land Contracts), Schedule 4.14(g) (Zoning), Schedule 4.15 (Permits), Schedule 4.16 (Environmental Matters), Schedule 4.21 (Wind Data), Schedule 4.25(a) (Reports), Schedule 1.1–DP (Design Package), and Schedule PND (Primavera Network Diagram).

"Schedules" means the disclosure schedules for this Agreement delivered pursuant to Section 6.14.

"Scope of Work" means the work described in, or that would in the Ordinary Course of Business be expected to be completed to achieve the work described in (a) Schedule 1.1–DP, as the same is updated from time to time in accordance with Section 6.14, (b) Schedule PND, as the same is updated from time to time in accordance with Section 6.14 and (c) Section 6.6.

"Seller" is defined in the introduction to this Agreement.

"Seller Group" is defined in Section 7.3.

"Seller Released Parties" is defined in Section 6.15(b).

"Seller Releasing Parties" is defined in Section 6.15(a).

"Shared Contracts" is defined in Section 4.13(g).

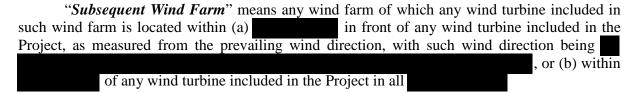
"Shares" means one hundred percent (100%) of the Equity Interests in the Company.

"Site" means the site on which the Project will be constructed in Hale County, Texas and Floyd County, Texas with a targeted nameplate capacity of at least 478 megawatts, which Site, as of the Closing Date, consists of the Real Property Interests.

"Special Damages" is defined in Section 8.12(c).

"SPP" means the Southwest Power Pool, Inc., or its successors.

"Straddle Period" means a taxable period beginning before and ending after the Closing Date.



"Sufficient Project" means a Construction Ready Project (that shall have incorporated the Scope of Work) and includes a total of approximately two hundred thirty nine (239) two (2) megawatt wind turbines with an aggregate nameplate capacity of not less than 478 megawatts such wind turbines to be sited in a reasonably contiguous manner on the Real Property Interests, fifteen (15) alternate sites on the Real Property Interests for wind turbines that are reasonably contiguous to such planned turbine sites, in each case, consistent with and in accordance with all Laws, the Buyer's Regulatory Approval and Prudent Wind Industry Practices, and the ability to locate each of the following on the Real Property Interests in no particular manner: substations, collection circuits, an operations and maintenance building, transmission lines (that can service the Project), and other windpower-related facilities, in each case, consistent with and in accordance with all Laws, the Buyer's Regulatory Approval and Prudent Wind Industry Practices, and reasonably sufficient legal and physical access to and among the Real Property Interests, in each case, consistent with and in accordance with all Laws, the Buyer's Regulatory Approval and Prudent Wind Industry Practices.

"Support Obligations" means, collectively, each guaranty, letter of credit, indemnity, escrow, performance or surety bond or similar credit support arrangement issued by or for the account of Seller or any of its respective Affiliates, in relation to the Company or the Project.

"Support Obligor" is defined in Section 6.171.01(a).

"Survey" means a survey of the real property covered by the Land Contracts certified to Buyer and the Title Company, in form and substance reasonably acceptable to Buyer, sufficient for the Title Company to provide survey coverage in any title policy issued in accordance with the Proforma Title Policy, and in compliance with the "2016 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys" jointly established and adopted by ALTA and the National Society of Professional Surveyors effective February 23, 2016 showing and including optional items 1, 3, 4, 7(a), 7(c), 8, 11, 13, 14, 16, 17, 18, 19 and 20 and disclosing the location of all improvements, plottable easements, encroachments, roadways, utility lines, set back lines and other matters shown customarily on such windpark surveys, and showing access affirmatively to public streets and roads, and certified by a surveyor licensed in the State of Texas reasonably satisfactory to the Title Company and Buyer.

"Tax" or "Taxes" means any federal, state, local or foreign income, gross receipts, ad valorem, sales and use, employment, social security, disability, occupation, property, severance, value added, transfer, capital stock, excise, withholding, premium, occupation or other taxes, levies or other like assessments, customs, duties, imposts, charges surcharges or fees imposed by or on behalf of any Governmental Authority, including any interest, penalty thereon or addition thereto.

"Tax Authority" means, with respect to any Tax, the governmental entity or political subdivision thereof that imposes such Tax, and the agency (if any) charged with the collection of such Tax for such entity or subdivision.



"Tax Return" means any report, form, claim for refund, return, statement or other information (including any amendments) required to be supplied to any Tax Authority with respect to Taxes, including information returns, any amendments thereof or schedule or attachment thereto.

"Third Party Acquisition" is defined in Section 2.9.

"Third Party Claim" is defined in Section 7.5(a).

"*Threshold*" is defined in Section 7.4(c).

"Title Commitment" means a Texas Form T-7 Commitment for Title Insurance to be prepared by the Title Company and issued to the Company for each parcel of real property covered by the Land Contracts and, if applicable, the Purchased Property, committing to insure the Real Property Interests and showing all Liens disclosed in the official records of Hale County, Texas and Floyd County Texas and that sets out the real estate legal description and the record title holder and also describes all mortgages, judgments, tax liens and other liens, Taxes, estates, life estates and other reservations by will or conveyance, all Liens of record as disclosed in the official records of Hale County, Texas and Floyd County Texas (including easements and government regulations), and other proceedings affecting title (together with a legible copy of all such underlying documents, including all maps and plats).



"Transfer Taxes" means all transfer, sales, use, goods and services, value added, documentary, stamp duty, gross receipts, excise, transfer and conveyance Taxes and other similar Taxes, duties, fees or charges.

"Unknown Claims" is defined in Section 6.15(c)(iii).

"Update" is defined in Section 6.14.

"USFWS" means the United States Fish and Wildlife Service or any successor agency thereto.

"WEG" is defined in Section 6.6(m)(v).

"Wind Data" means any and all wind speed data and other relevant wind characteristics data included, or included by reference, on Schedule 4.21 of this Agreement, or in the possession or control of Seller or any of its Affiliates or Representatives in respect to the Project, along with all supporting documentation.

Section 1.2 Rules of Construction.

- (a) All article, section, subsection, schedule and exhibit references used in this Agreement are to articles, sections, subsections, Schedules and exhibits to this Agreement unless otherwise specified. The exhibits and Schedules attached to this Agreement constitute a part of this Agreement and are incorporated in this Agreement for all purposes.
- (b) If a term is defined as one part of speech (such as a noun), it will have a corresponding meaning when used as another part of speech (such as a verb). Unless the

context of this Agreement clearly requires otherwise, words importing the masculine gender will include the feminine and neutral genders and vice versa. The words "includes" or "including" will mean "including without limitation," the words "hereof," "hereby," "herein," "hereunder" and similar terms in this Agreement will refer to this Agreement as a whole and not any particular section or article in which such words appear. The term "will" and "shall" have the same meaning. Any reference to a Law includes any amendment thereof or any successor thereto and any rules and regulations promulgated thereunder. Any reference to a Contract will be to that Contract as it may have been amended, modified, supplemented or restated prior to the date hereof. Currency amounts referenced in this Agreement are in U.S. dollars.

- (c) Whenever this Agreement refers to a number of days, such number will refer to calendar days unless Business Days are specified. Whenever any action must be taken hereunder on or by a day that is not a Business Day, then such action may be validly taken on or by the next day that is a Business Day. For determining any period of time, "from" means "including and after," "to" means "to but excluding" and "through" means "through and including."
- (d) Any representation or warranty contained herein as to the enforceability of a Contract shall be subject to the effect of any bankruptcy, insolvency, reorganization, moratorium or other similar law affecting the enforcement of creditors' rights generally and to general equitable principles (regardless of whether such enforceability is considered in a proceeding in equity or at law).
- (e) Each Party acknowledges that it and its attorneys have been given an equal opportunity to negotiate the terms and conditions of this Agreement and that any rule of construction to the effect that ambiguities are to be resolved against the drafting Party or any similar rule operating against the drafter of an agreement will not be applicable to the construction or interpretation of this Agreement.
- (f) The Parties shall act reasonably and in accordance with the principles of good faith and fair dealing in the performance of this Agreement. Unless expressly provided otherwise in this Agreement, where this Agreement requires the consent, approval, or similar action by a Party, such consent, approval or similar action shall not be unreasonably withheld, conditioned or delayed.
- (g) All accounting terms used herein and not expressly defined herein will have the respective meanings given such terms under GAAP.
- (h) Whenever this Agreement states that any document has been "made available," unless otherwise expressly provided herein, that means the document was available in the Data Site prior to the date such statement is effective (or otherwise delivered to Buyer or any of its Affiliates prior to the date such statement is effective).

ARTICLE II

PURCHASE AND SALE AND CLOSING

Section 2.1 <u>Purchase and Sale</u>. On the terms and subject to the conditions set forth in this Agreement, on the Closing Date, Buyer shall purchase from Seller, and Seller shall sell to Buyer, all of the Shares free and clear of all Liens (other than those restrictions on transfer arising under securities Laws generally or the Organizational Documents of the Company).

Section 2.2 Purchase Price; Initial Payment and Closing Payment.

- (a) The purchase price for the purchase and sale described in Section 2.1 shall be an amount equal to (the "*Purchase Price*").
 - (b) Initial Payment.
- (i) Unless this Agreement has previously been terminated pursuant to Section 2.8(a)(xiii), Buyer shall pay to Seller by wire transfer of immediately available funds (to such account or accounts as Seller will have notified Buyer of no later than two (2) Business Days prior to the date of such payment) an amount equal to (the "Initial Payment"), payable as follows: (i) on the date that is five (5) Business Days after the last date on which this Agreement may be terminated pursuant to Section 2.8(a)(xiii) (the "Initial Tranche") and (ii) on September 30, 2017 (the "Final Tranche"); provided the Final Tranche will not be payable on such date (or any other date) if this Agreement has been terminated pursuant to any of the provisions provided in Section 2.2(b)(ii) below that obligate Seller to reimburse the Initial Payment.
 - (ii) The Initial Payment shall be non-refundable except that if:
 - (A) this Agreement has been terminated pursuant to any of (A) Section 2.8(a)(iv), (B) Section 2.8(a)(vi), (C) Section 2.8(a)(vii) (solely if the condition incapable of being fulfilled is Section 2.7(a)(ii)), or (D) Section 2.8(a)(viii) (solely if the condition incapable of being fulfilled is Section 2.7(a)(ii)) and in any such case of (A)-(D) (x) a Bonita Approval has occurred, and (y) a Bonita Elective Termination Waiver has occurred;
 - (B) (1) this Agreement is terminated prior to the Closing Date pursuant to Section 2.8(a)(iv), Section 2.8(a)(vi), Section 2.8(a)(vii) (solely if the condition incapable of being fulfilled in Section 2.7(a)(ii)), or Section 2.8(a)(viii) (solely if the condition incapable of being fulfilled in Section 2.7(a)(ii)), (2) a Bonita Regulatory Termination has occurred, and (3) $\underline{(x)}$ prior to January 1, 2021 either (i) Seller consummates the direct or indirect sale, transfer or other disposition of the Company to a third party, (ii) the Company consummates a sale, transfer or other disposition of all or any portion of the Assets comprising the Project (excluding sales, transfers or other dispositions of immaterial portions

of such Assets in the ordinary course of business) to a third party, or (iii) any notice to proceed has been issued under a balance of plant contract, engineering procurement and construction contract, or similar agreement with respect to the Project or any Material Portion thereof, and $\underline{(y)}$ the underlying agreement(s) or other arrangement(s) pertaining to the applicable event described in the immediately preceding items (3)(x)(i), (ii) or (iii) contemplate initial delivery of energy under the interconnection agreement for the Project (or the Material Portion thereof, as applicable) prior to January 1, 2021; or

(C) This Agreement has been terminated pursuant to any of Section 2.8(a)(ii)(A), Section 2.8(a)(ix), Section 2.8(a)(xvi), or Section 2.8(a)(xvii);

then Seller shall, within five (5) Business Days of termination (with respect to clause (A) or clause (C)), or consummation of such sale, transfer or other disposition, or issuance of such notice to proceed, as applicable (with respect to Clause (B)), reimburse Buyer by wire transfer of immediately available funds an amount equal to the full amount of the Initial Payment actually paid to Seller; provided, however, that if, with respect to clause (B), the subject underlying agreements or other arrangement do not contemplate initial delivery of energy under the interconnection agreement for the Project (or the Material Portion thereof, as applicable) prior to January 1, 2021 but initial delivery of energy under the interconnection agreement for the Project (or the Material Portion thereof, as applicable) nonetheless occurs prior to January 1, 2021, then Seller shall within five (5) Business Days of such initial delivery of energy reimburse Buyer by wire transfer of immediately available funds an amount equal to the full amount of the Initial Payment actually paid to Seller.

Closing Payment. At the Closing, Buyer shall pay to Seller by wire transfer of immediately available funds (to such account or accounts as Seller will have notified Buyer of no later than two (2) Business Days prior to the Closing Date) an amount equal to the Purchase Price less (i) the Initial Payment, and (ii) any Purchase Price holdback amount expressly described in Section 2.7(b)(ii) (the "Punchlist Holdback"), which Punchlist Holdback shall secure Seller's completion of all Punchlist Items in accordance with the Punchlist Items Terms and Conditions, and Buyer shall be entitled to set off against the Punchlist Holdback all Losses (but no Losses that would constitute Special Damages) Buyer suffers as a result of Seller's failure to complete the Punchlist Items in accordance with the Punchlist Items Terms and Conditions, including costs Buyer reasonably incurs completing, or engaging a third party to complete, any Punchlist Items (provided that, unless the Punchlist Items Terms and Conditions provide otherwise, Buyer has provided Seller with written notice of its intention to complete or engage a third party to complete such items and Seller continues to fail to take action to complete such items for a period of seven (7) Business Days thereafter). Unless the Punchlist Items Terms and Conditions provide otherwise, within ten (10) Business Days following the satisfaction in accordance herewith of all Punchlist Items, Buyer shall pay to Seller the Punchlist Holdback (less any amounts set off against such amount as provided above) by wire transfer of immediately available funds to such account or accounts as Seller will have notified Buyer of no later than two (2) Business Days prior to such date. If there is any conflict between this Agreement and the Punchlist Items Terms and Conditions, the Punchlist Items Terms and Conditions shall control.

- (d) Notwithstanding anything herein to the contrary, Seller will retain, and neither Buyer nor the Company shall be obligated to pay, perform or otherwise discharge or be responsible or liable with respect to, Excluded Liabilities.
- Section 2.3 <u>Closing</u>. The Closing will take place at the offices of Orrick, Herrington & Sutcliffe LLP, 1301 McKinney Street, Suite 4100, Houston, Texas, or by remote electronic exchange of documents (by facsimile, .pdf, e-mail, or other form of electronic communication) on the later to occur of (a) three (3) Business Days after the date that all of the conditions to the Closing set forth in Section 2.7 (other than those conditions which, by their terms, are to be satisfied or waived at the Closing, but subject to the satisfaction or waiver of such conditions) shall have been satisfied or waived by the Party entitled to waive the same, and shall be effective at the actual time of Closing, or (b) at such other time, place and date as the Parties may agree in writing. All actions listed in Section 2.4 or 2.5 that occur on the Closing Date will be deemed to occur simultaneously at the Closing. The Closing will be deemed to be effective as of 11:59:59 p.m. Central Time on the Closing Date.
- Section 2.4 <u>Closing Deliveries by Seller to Buyer</u>. At the Closing, Seller shall deliver to Buyer the following:
 - (a) an executed counterpart by Seller of the Company Assignment Agreement and each other ancillary agreement to be executed and delivered at the Closing to which Seller is a party;
 - (b) a certification of non-foreign status in the form prescribed by Treasury Regulation Section 1.1445-2(b) with respect to Seller;
 - (c) written resignations of all officers and members of the board of managers of the Company substantially in the form attached as Exhibit F;
 - (d) the Closing deliverables described in Section 2.7(b) below; and
 - (e) copies of the Required Consents.
- Section 2.5 <u>Closing Deliveries by Buyer to Seller</u>. At the Closing, Buyer shall deliver to Seller the following:
 - (a) the Purchase Price in accordance with Section 2.2(c);
 - (b) an executed counterpart by Buyer of the Company Assignment Agreement and each other ancillary agreement to be executed and delivered at the Closing to which Buyer is a party; and
 - (c) the Closing deliverables described in Section 2.7(c) below.

Section 2.6 [Reserved].

Section 2.7 <u>Conditions to Closing.</u>

- (a) The obligations of the Parties to effect the Closing are subject to the satisfaction or written waiver prior to the Closing of the following conditions:
- (i) no Person shall have instituted any Actions to impair, restrain, prohibit or otherwise challenge the legality or validity of any of the transactions contemplated herein that has not been dismissed or otherwise resolved in a manner that does not, to the satisfaction of Seller and Buyer, materially adversely affect such transactions, and no Final Order shall be in effect that impairs, restrains, enjoins or otherwise prohibits or makes illegal the consummation of any such transactions;
 - (ii) the Buyer's Regulatory Approval shall have been obtained; and
- (iii) the Permits (other than the Permits disclosed on <u>Schedule 4.15</u> Part IV and non-discretionary ministerial Permits that are not necessary prior to Closing) in form and substance satisfactory to Seller and Buyer (excluding the Buyer's Regulatory Approval), shall have been obtained and shall be validly issued, in full force and effect, final, and non-appealable.
- (b) The obligation of Buyer to effect the Closing is subject to the satisfaction at or before Closing of all of the following conditions, any one or more of which may be waived by Buyer in writing, in Buyer's sole discretion:
- (i) subject to Section 6.14, each of the Designated Representations of Seller will be true and correct in all respects, and each of the other representations and warranties of Seller contained in this Agreement shall be true and correct in all material respects (other than such representations and warranties qualified by materiality or Material Adverse Effect, which shall be true and correct in all respects), in each case on and as of the Closing Date as though made on and as of the Closing Date;
- (ii) Seller shall have performed and complied with, in all material respects, all covenants and agreements required by this Agreement to be performed, and complied with by Seller on or before the Closing Date; provided, that, to the extent items in Section 6.6 expressly permit the completion thereof after Closing, and so long as a holdback of a portion of the Purchase Price in respect of all such uncompleted items (which holdback amount shall be equal to the approximate cost to complete all such items as determined by the Parties in good faith), and the terms and conditions under which such amounts held back will be paid by Buyer to Seller, including the time within which the relevant Punchlist Item shall be completed after the Closing Date, have each been agreed to, in good faith, in writing by the Parties (such writing, the "Punchlist Items Terms and Conditions"), Seller shall be entitled to list outstanding and uncompleted items on Schedule 6.6 (such items, the "Punchlist Items") and complete such items after Closing;

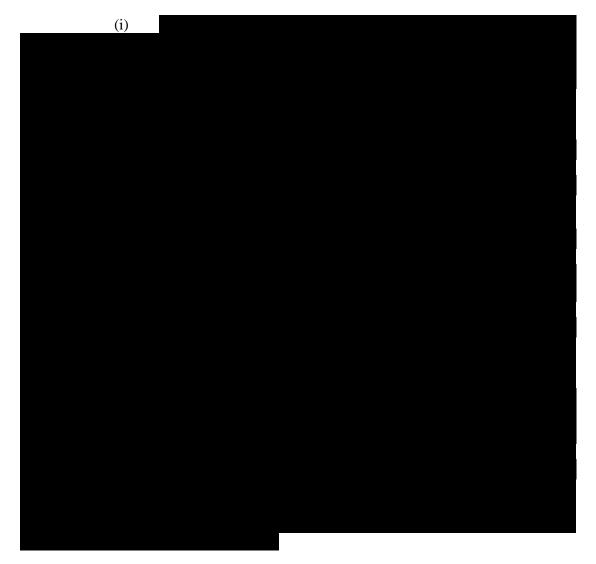
- (iii) Seller shall have delivered to Buyer a certificate from a duly authorized officer of Seller, dated the Closing Date and executed by such officer, in a form acceptable to Buyer, certifying the items in Section 2.7(b)(i), Section 2.7(b)(ii), and Section 2.7(b)(viii);
- (iv) Seller shall have delivered (or caused to be delivered) to Buyer, the Closing deliverables described in Section 2.4 above;
- (v) Seller shall have delivered to Buyer a Certificate of Good Standing as to the Company and Seller, dated no earlier than five (5) Business Days before the Closing Date;
- (vi) Seller shall have delivered to Buyer copies in form and substance acceptable to Buyer of documentation releasing all of the Liens set forth on Schedule 2.7(b)(vi);
- (vii) Seller shall have delivered to Buyer certificates, dated the Closing Date and executed by the Secretary of Seller in substantially the form set forth on **Exhibit B-1** and **Exhibit B-2**;
- (viii) no Material Adverse Effect shall have occurred since the date of this Agreement;
- (ix) Seller shall have obtained those Consents set forth on Schedule 2.7(b)(ix), each of which is in form and substance acceptable to Buyer (the "Required Consents");
- (x) (A) the Pre-Closing Asset Transfer, if any, shall have been completed by Seller and its Affiliates, as applicable, pursuant to Section 6.7, including obtaining all Consents required to consummate the Pre-Closing Asset Transfer, (B) the Company shall not have sold, transferred or otherwise disposed of any Shares or Purchased Assets, except as otherwise permitted by this Agreement, (C) the Project shall not have suffered any material theft, damage, removal, destruction or casualty Loss of any of the Purchased Assets, and (D) the Shares or Purchased Assets shall not be subject to any Liens other than Permitted Liens;
- (xi) Seller shall have complied with the obligations set forth in Section 2.7(d) in all respects and the Title Commitment and the Survey shall be in form and substance satisfactory to Buyer in accordance with Section 2.7(d);



- (xiv) Seller shall have decommissioned and removed all meteorological towers from the Site, in compliance in all material respects with all applicable Contracts (including Land Contracts), applicable Laws and Prudent Wind Industry practices;
- (xv) the Project has satisfied, in all respects, the requirements for a Sufficient Project and the Project is Construction Ready;



- (c) The obligation of Seller to effect the Closing is subject to the satisfaction at or before Closing of all of the following conditions, any one or more of which may be waived by Seller in writing, in Seller's sole discretion:
- (i) each of the Designated Representations of Buyer will be true and correct in all respects, and each of the other representations and warranties of Buyer contained in this Agreement shall be true and correct in all material respects (other than such representations and warranties qualified by materiality, which shall be true and correct in all respects), in each case on and as of the Closing Date as though made on and as of the Closing Date;
- (ii) Buyer shall have performed, and complied with, in all material respects, all covenants and agreements required by this Agreement to be performed, and complied with, by Buyer on or before the Closing Date;
- (iii) Buyer shall have delivered to Seller a certificate from a duly authorized officer of Buyer, dated the Closing Date and executed by such officer, in a form acceptable to Seller, certifying the items in Section 2.7(c)(i) and Section 2.7(c)(ii);
- (iv) Buyer shall have delivered (or caused to be delivered) to Seller, the Closing deliverables described in Section 2.5 above;
- (v) Buyer shall have delivered (or caused to be delivered) to Seller a counterpart of the wind data license agreement in the form attached as **Exhibit C**, duly executed by the Company, effective as of the Closing; and
- (vi) Buyer shall have paid the Purchase Price (less the Initial Payment and any Punchlist Holdback) in full to Seller.
 - (d) Title Commitment; Survey; Title Policy; Required Estoppels.



(ii) At Closing, Seller shall cause the Title Company to deliver the Proforma Title Policy (including forms of all required endorsements thereto), and deliver to the Title Company such items as are reasonably necessary for the delivery of a Texas Form T-1 Owner's Policy of Title Insurance in the form of the Proforma Title Policy, including affidavits necessary for the Title Company to delete any standard exceptions (including, without limitation, the so-called "gap" exception) and as required by the Title Company for any endorsements thereto, but not including any premiums with respect to such Texas Form T-1 Owner's Policy of Title Insurance and any required endorsements, which shall be Buyer's obligation hereunder. Buyer shall pay for the Survey and the Title Commitment (and any amendments, updates and supplements thereto) and all recording charges and expenses incurred in connection with recording any Land Contract (or amendments or memoranda thereof) and any curative documents necessary to satisfy the requirements of this Section 2.7(d).

(iii) Prior to Closing, Seller shall, in consultation with Buyer, use Commercially Reasonable Efforts to obtain the Required Estoppels. Seller shall bear all costs fees or expenses in seeking such Required Estoppels, it being understood that neither Seller nor Buyer shall have any obligation to pay any consideration or to offer to grant, or agree to, any financial accommodation in order to obtain such Required Estoppels. If Buyer has, in connection with the Closing and in its sole discretion, agreed in writing that any Required Estoppels may be obtained following the Closing Date, for at least one (1) year following the Closing Date Seller shall, in consultation with Buyer, use Commercially Reasonable Efforts to obtain the remaining Required Estoppels. Seller shall bear all costs fees or expenses in seeking such remaining Required Estoppels, it being understood that neither Seller nor Buyer shall have any obligation to pay any consideration or to offer to grant, or agree to, any financial accommodation in order to obtain such remaining Required Estoppels.

Section 2.8 Termination of Agreement.

- (a) This Agreement may be terminated before Closing as follows:
 - (i) by mutual written consent of the Parties;
- (ii) (A) by Buyer if Seller suffers a Bankruptcy Event, and (B) by Seller if Buyer suffers a Bankruptcy Event;
- (iii) by either Party if the Closing shall not have occurred on or prior to June 30, 2018, for any reason whatsoever except to the extent the Closing shall have been delayed by a material breach of this Agreement by the Party seeking to terminate the Agreement;
- (iv) by Buyer if the Buyer's Regulatory Approval has not been obtained on or prior to March 31, 2018, provided that Buyer shall not have any right to terminate this Agreement pursuant to this clause (iv) more than ten (10) Business Days after such date;
- (v) notwithstanding the inclusion of Mineral Rights as a Permitted Lien, by Buyer if, on or prior to the date that is thirty (30) days following Buyer's receipt of the last of the Title Commitment or the Survey, Buyer is not satisfied that the Mineral Rights (and the development thereof) individually or in the aggregate would not reasonably be expected to currently interfere in any material respect with the Company's ability to locate, interconnect, erect, construct, operate and maintain, on the Site, a Sufficient Project, provided that Buyer shall not have any right to terminate this Agreement pursuant to this clause (v) after such date;
- (vi) by Buyer if the Buyer's Regulatory Approval does not contain terms and conditions reasonably satisfactory to Buyer, which termination right must be exercised by Buyer on or prior to the date that is ten (10) Business Days following receipt of the final Buyer's Regulatory Approval and Buyer shall not have any right to terminate this Agreement pursuant to this clause (vi) after such date;
- (vii) by Buyer if any condition in Section 2.7(a) or Section 2.7(b) becomes incapable of fulfillment at the Closing;

(viii) by Seller, if any condition in Section 2.7(a) or Section 2.7(c) becomes incapable of fulfillment at the Closing;



- (xi) by Seller if Buyer has not filed or submitted for Buyer Regulatory Approval as described in Section 6.9(b) on or prior to May 1, 2017, provided Seller shall not have any right to terminate this Agreement pursuant to this clause 2.8(a)(xi) prior to such date and after the day that is ten (10) Business Days following such date;
 - (xii) [reserved];
- (xiii) by Seller if this Agreement and the transactions contemplated hereby have not received the requisite approval of Seller's management, on or prior to April 30, 2017; provided, that Seller shall not have any right to terminate this Agreement pursuant to this clause 2.8(a)(xiii) after April 30, 2017;

(xiv)

- (xv) by Buyer if Seller is in material breach of any provision of this Agreement (or if such provisions are qualified by materiality, then upon any breach); provided, that Buyer (A) has given Seller at least sixty (60) days' prior notice of the violation or breach and Seller has not cured such violation or breach during such sixty (60) day period, and (B) has not waived such condition in writing;
- (xvi) by Seller if Buyer is in material breach of any provision of this Agreement (or if such provisions are qualified by materiality, then upon any breach); provided, that Seller (A) has given Buyer at least sixty (60) days' prior notice of the violation or breach and Buyer has not cured such violation or breach during such sixty (60) day period, and (B) has not waived such condition in writing; or
- (xvii) by Seller if Buyer, in its capacity as "Company" under, and as defined in, the Bonita PPA, has terminated the Bonita PPA in accordance with section 6.1(C) of the Bonita PPA, provided Seller shall not have any right to terminate this Agreement pursuant to this clause (xvii) more than ten (10) Business Days after such Bonita PPA termination date.
- (b) Notwithstanding any term in this Section 2.8, a Party will not have the right to terminate this Agreement if the failure to satisfy any condition to the Closing or consummate the transactions contemplated in this Agreement resulted from the material breach by such Party of any of its representations, warranties, covenants or agreements herein, or if such Party is otherwise in material breach of this Agreement.

(c) In the event of the termination of this Agreement as provided in this Section 2.8, this Agreement shall be of no further force or effect and there shall be no Liability to any Party hereunder in connection with this Agreement or the transactions contemplated by this Agreement; provided, however that, except as provided herein, nothing shall relieve any Party from liability or damages resulting from any breach of this Agreement prior to the effective date of termination; provided, further that the obligations of the Parties set forth in this Section 2.8(c), Section 2.2(b), Section 2.7(d)(ii), Section 4.27, Section 5.8, Section 6.8(a), Section 6.11, and Article VIII (including, in each case, the definitions of the terms set forth in Section 1.1) and the Confidentiality Agreement shall survive any such termination and shall be enforceable hereunder.

Section 2.9 Exclusivity. From and after the date of execution and until Closing or this Agreement is otherwise terminated in accordance with its terms ("Exclusivity Period"), Seller and Buyer shall work exclusively with each other in good faith to consummate the transactions contemplated by this Agreement. During the Exclusivity Period, Seller shall not, and will cause its Representatives and Affiliates not to, directly or indirectly, initiate, solicit or respond to the submission of, or enter into any negotiations in respect of, any indication of interest, proposal or offer from any Person relating to any (a) merger or consolidation with or into, (b) except as required to comply with its obligations under this Agreement, any acquisition or purchase of any material Asset of, or any equity or debt interest in, (c) except as otherwise expressly permitted by this Agreement, lease or disposition of any material Asset of or relating to, or (d) similar transaction, business combination or investment involving any portion of, the Company, the Business, the Project or the Shares (any of the transactions described in clauses (a) through (d), a "Third Party Acquisition"). For the avoidance of doubt, a Third Party Acquisition shall include any response to a request for proposal, bid or similar request from any Person (including Buyer and its Affiliates) involving any aspect of the Business, the Project, or the Shares. Immediately upon execution of this Agreement, Seller shall, and shall cause its Representatives and Affiliates to, discontinue any and all existing discussions or negotiations with any Person other than Buyer and its Affiliates and Representatives regarding a Third Party Acquisition.

ARTICLE III

REPRESENTATIONS AND WARRANTIES OF SELLER

Seller hereby represents and warrants to Buyer that each and all of the following representations and warranties set forth in this <u>Article III</u> (as modified by the applicable section of the Schedules, subject to Section 6.14) are true and correct as of the date of this Agreement and as of the Closing Date (except for such representations and warranties that speak as of a specific date, in which case such representations and warranties are true and correct as of such date):

Section 3.1 <u>Organization</u>. Seller is a limited liability company validly existing and in good standing under the Laws of the State of Delaware. Seller is duly qualified or licensed to do business in each other jurisdiction where the actions to be performed by it under this Agreement and the Company Assignment Agreement makes such qualification or licensing necessary, except in those jurisdictions where the failure to be so qualified or licensed would not

have a material adverse effect on Seller's ability to perform its obligations under this Agreement or the Company Assignment Agreement.

- Section 3.2 <u>Authority; Enforceability</u>. Seller has all requisite limited liability company power and authority to execute and deliver this Agreement and the Company Assignment Agreement, to perform its obligations hereunder and thereunder and to consummate the transactions contemplated hereby and thereby. The execution and delivery by Seller of this Agreement and the Company Assignment Agreement, and the performance by Seller of its obligations hereunder and thereunder, have been duly and validly authorized by all necessary limited liability company action. This Agreement has been, and the Company Assignment Agreement when executed will be, duly and validly executed and delivered by Seller and constitutes, or will constitute, as applicable, the legal, valid and binding obligation of Seller enforceable against Seller in accordance with its terms.
- Section 3.3 <u>No Conflicts; Consents and Approvals</u>. The execution and delivery by Seller of this Agreement and the Company Assignment Agreement and the performance by Seller of its obligations hereunder and thereunder do not:
 - (a) result in a violation of or a breach of any of the terms, conditions or provisions of the Organizational Documents of Seller;
 - (b) except as set forth on <u>Schedule 3.3(b)</u>, result in a Default or require Consent (that is required as of any date this representation is made and has not been obtained or made as of such date) under any Contract to which Seller or the Company is a party or by which any of the Purchased Assets or the Company are bound;
 - (c) except as set forth on <u>Schedule 3.3(c)</u>, (i) violate or breach any term or provision of any Law, Governmental Approval or order applicable to Seller or the Company, (ii) require any Consent (that is required as of any date this representation is made and has not been obtained or made as of such date) of any Governmental Authority under any applicable Law, or (iii) result in the creation or imposition of any Lien on Seller or the Company or the Assets of any of the foregoing.
- Section 3.4 <u>Legal Proceedings</u>. Seller has not been served with notice of any Claim, no Claim is pending and, to Seller's Knowledge, none is threatened against Seller or the Company, which seeks a writ, judgment, order, injunction or decree restraining, enjoining or otherwise prohibiting or making illegal any of the transactions contemplated under this Agreement or the Company Assignment Agreement.
- Section 3.5 <u>Compliance with Laws</u>. Seller and each of its Affiliates (with respect to such Affiliates solely in connection with the Shares, the Company, the Project and the Purchased Assets, but which Affiliates do not include the Company which is instead covered by representations and warranties set forth in Section 4.9) is currently in compliance in all material respects with all Laws and orders of all Governmental Authorities applicable to Seller, the Shares, the Company, the Project or the Purchased Assets.

Section 3.6 <u>Brokers</u>. Seller does not have any liability or obligation to pay fees or commissions to any broker, finder or agent with respect to the transactions contemplated by this Agreement for which Buyer or the Company could become liable or obligated.

Section 3.7 Prior Acquisitions and Development Agreements.

- (a) except as set forth on <u>Schedule 3.7</u>, there are no amounts due or that may become due and owing by Seller;
- (b) there are no amounts due or that may become due and owing by Buyer or the Company in connection with any prior development or acquisition agreement or related transaction with respect to the Company's development of the Project or acquisition of the Purchased Assets or the Company or with respect to Seller's acquisition of the Project or the Company; and
- (c) there are no build-out restrictions, restrictions on competition, change in control restrictions, direct or indirect equity ownership transfer restrictions, rights of first refusal, rights of first offer, or other similar rights that bind Seller in respect of the Company or the Project, the Company or any of the Company's current or future direct or indirect owners.

ARTICLE IV

REPRESENTATIONS AND WARRANTIES OF SELLER REGARDING THE COMPANY AND THE PROJECT

Seller hereby represents and warrants to Buyer that each and all of the following representations and warranties set forth in this <u>Article IV</u> (as modified by the applicable section of the Schedules, subject to Section 6.14) are true and correct as of the date of this Agreement and as of the Closing Date (except for such representations and warranties that speak as of a specific date, in which case such representations and warranties are true and correct as of such date):

Section 4.1 <u>Organization</u>. The Company is a limited liability company validly existing and in good standing under the Laws of the State of Delaware, and has all requisite limited liability company power and authority to conduct its business as it is now being conducted and to own, lease and operate its Assets. The Company is duly qualified or licensed to do business and is in good standing in each jurisdiction in which the ownership or operation of its Assets make such qualification or licensing necessary, except in those jurisdictions where the failure to be so duly qualified or licensed would not have a Material Adverse Effect. Seller has made available to Buyer all of the Organizational Documents of the Company as in effect on the date of this Agreement.

Section 4.2 Reserved.

Section 4.3 <u>No Conflicts; Consents and Approvals</u>. The execution and delivery by Seller of this Agreement and the Company Assignment Agreement, the performance by Seller of its obligations hereunder and the consummation of the transactions

contemplated hereby and thereby and the taking of any action contemplated to be taken by Seller hereunder or thereunder (including the Pre-Closing Asset Transfer) do not:

- (a) result in a violation or breach of any of the terms, conditions or provisions of the Organizational Documents of the Company;
- (b) except as set forth on <u>Schedule 4.3(b)</u>, (i) violate, breach, or conflict with any term or require any notices or filings for any provision of any Law, Governmental Approval or order applicable to the Company or the Project; (ii) require the Consent (that is required as of any date this representation is made and has not been obtained or made as of such date) of any Governmental Authority under any applicable Law; or (iii) cause a Default, or require the Consent (that is required as of any date this representation is made and has not been obtained or made as of such date) of any Person, under any Purchased Contract, Land Contract or Governmental Approval;
- (c) result in the imposition or creation of any Lien other than Permitted Liens, on any Asset of the Company or the Business; or
- (d) result in the imposition or creation of any Lien on the Equity Interests of the Company.

Section 4.4 <u>Capitalization</u>.

- (a) Seller is the direct owner, holder of record, and beneficial owner of, and has good and marketable to, the Shares free and clear of all Liens and restrictions on transfer other than those arising pursuant to or as described in this Agreement, the Organizational Documents of the Company, or applicable securities Laws.
- (b) The Shares are duly authorized, validly issued, fully paid and non-assessable, were issued in compliance with all applicable Laws, and were not issued in violation of, and are not subject to, any preemptive rights or any other agreement, arrangement or commitment to which Seller or the Company is party.
- (c) Except for the Shares, there are no outstanding Equity Securities of the Company. The Company has not granted to any Person any agreement or option, or any right or privilege capable of becoming an agreement or option, for the purchase, subscription, allotment or issue of any unissued interests, units or other securities (including convertible securities, warrants or convertible obligations of any nature) of the Company. None of the Equity Securities of the Company are subject to any voting trust, member or partnership agreement or voting agreement or other agreement, right, instrument or understanding with respect to any purchase, sale, issuance, transfer, repurchase, redemption or voting of any Equity Securities of the Company, other than the Organizational Documents of the Company.

Section 4.5 Business; Purchased Assets

(a) The Business is the only business that has ever been or is currently being carried on by the Company.

- (b) The Company has, or will have on the Closing Date, good, valid and marketable title to, or rights by Contract or other agreement to use, all of the Purchased Assets free and clear of all Liens (except for Permitted Liens).
- (c) Except (i) for the Punchlist Items and (ii) as set forth on Schedule 4.5(c), as of the Closing the Company will own or have rights by Contract to use all of the Purchased Assets and Permits necessary to locate, develop, construct, install, interconnect, complete, operate and maintain, on the Site, a Sufficient Project (other than non-discretionary ministerial Permits that are not necessary prior to Closing), including the Project Leases and Land Contracts.
- (d) As of the Closing, Seller or its Affiliates will have assigned, conveyed and transferred to the Company all of Seller's and such Affiliates' right, title and interest in and to all of the following Assets owned by Seller or its Affiliates or in which Seller or its Affiliates have or subsequently acquire any interest whatsoever free and clear of all Liens, other than Permitted Liens, to the extent related to the Project (collectively, the "Purchased Assets"):
 - (i) the Wind Data;
 - (ii) the physical Assets;
- (iii) the Purchased Contracts, including the Land Contracts and the Generator Interconnection Agreement;
- (iv) all rights of Seller and Seller's Affiliates, with respect to the Company or the Project, including the Generator Interconnection Agreement;
 - (v) the Permit applications and, if issued, the Permits;
 - (vi) any Intellectual Property rights;
 - (vii) the Books and Records;
 - (viii) the Reports;
 - (ix) any Project layouts, including micro-siting;
 - (x) the Survey;
 - (xi) all Real Property Interests;
- (xii) all iterations in Seller's or its Affiliates' possession or control of the Site plan containing ESRI GIS shape files of the Project with leased lands, setback and exclusion boundaries, met tower locations, collection line layout, any associated transmission line route(s) and proposed turbine, operations and maintenance building and substation locations; and

- (xiii) any other Assets owned by Seller or its Affiliates or in which Seller or its Affiliates have any interest whatsoever that are related in any material respect to the Project.
- (e) The Project includes the only Assets that are owned or have ever been owned by the Company.
- (f) Schedule 4.5(f) identifies any and all meteorological towers, equipment, machinery and other material tangible personal property in which the Company holds an ownership or leasehold interest, which includes all warranties of manufacturers or vendors relating thereto, to the extent that such warranties are freely transferable.
- Section 4.6 <u>Bank Accounts.</u> <u>Schedule 4.6</u> sets forth a list of the names and locations of banks, trust companies and other financial institutions at which the Company maintains accounts of any nature or safe deposit boxes and the names of all Persons authorized to draw thereon, make withdrawals therefrom or have access thereto.
- Section 4.7 <u>Subsidiaries</u>. The Company does not have any subsidiaries or own Equity Securities in any Person.
- Section 4.8 <u>Legal Proceedings</u>. Except as set forth on <u>Schedule 4.8</u>, no Claim is pending, and to Seller's Knowledge, none has been threatened (a) against the Company, (b) affecting the Company, the Purchased Assets or the Business, or (c) seeking a writ, judgment, order, injunction or decree restraining, enjoining or otherwise prohibiting or making illegal the Project or any of the transactions contemplated by this Agreement or the Company Assignment Agreement to which the Company is a party.
- Section 4.9 <u>Compliance with Laws</u>. The Company is not in Default under any, and is in compliance with all, Laws or orders of all Governmental Authorities applicable to it, the Business and the Purchased Assets, and neither Seller nor the Company has received any notification indicating any violation of such Laws and orders. The representations and warranties contained in this Section 4.9 do not apply to Tax matters (which are governed exclusively by Section 4.11), regulatory matters (which are governed exclusively by Section 4.12), Permit matters (which are governed exclusively by Section 4.15), environmental matters (which are governed exclusively by Section 4.16), Intellectual Property matters (which are governed exclusively by Section 4.17), employment matters (which are governed exclusively by Section 4.20).
- Section 4.10 <u>Assets and Liabilities; No Undisclosed Liabilities.</u> Schedule 4.10 sets forth an unaudited balance sheet of the Assets and Liabilities of the Company as of the date of this Agreement. Except as set forth on <u>Schedule 4.10</u>, the Company does not have any Liability that would be required to be set forth on a balance sheet of the Company prepared in accordance with GAAP, except for (i) Liabilities under this Agreement and the Company Assignment Agreement or (ii) Liabilities arising under Purchased Contracts and Permits of the Company that have been made available to Buyer (none of which Liabilities result from a breach or Default under the applicable Purchased Contract, Land Contract or Permit).

Section 4.11 <u>Taxes</u>. Except as set forth on <u>Schedule 4.11</u>:

- (a) The Company is and has been since formation, properly treated for federal income tax purposes as a disregarded entity within the meaning of Treasury Regulation 301.7701-3, and no election has been filed to treat the Company as a corporation for such purposes.
- (b) The Company has timely filed all Tax Returns, if any, required to be filed with Tax Authorities, and all Taxes required to be paid or withheld by the Company have been timely paid or withheld as required by Law.
- (c) Seller is not currently the beneficiary of or subject to any extension of time within which to file any Tax Returns or for the assessment or collection of any Tax with respect to the Company or the Purchased Assets. The Company has not waived any statute of limitations in respect of Taxes or agreed to any extension of time with respect to a Tax assessment or deficiency.

(d) [Reserved].

- (e) Seller has made available to Buyer true and complete copies of all Tax Returns of the Company or otherwise related to the Project, excluding income tax returns of Seller's direct or indirect owners.
- (f) No Tax Returns with respect to the Company or the Project have been audited or examined by any Tax authority. There are no ongoing or pending or threatened in writing Tax audits, examinations, claims, assessments or proposed deficiencies against the Company or with respect to the Project.
- (g) No Tax authority in a jurisdiction where the Company does not file a Tax Return has made a claim or assertion in writing, or threatened in writing, that the Company or Project is or may be subject to Tax by such jurisdiction.
- (h) the Company is not a party to a tax allocation or tax sharing agreement or tax indemnity or similar arrangement.
- (i) The Project has not benefited from any government grants, tax-exempt financing, subsidized energy financing or other federal tax credits within the meaning of Section 45(b)(3) of the Code.
- (j) The Company has not entered into a closing agreement pursuant to Section 7121 of the Code (or any similar provision of state, local or foreign law).
- (k) The Company has not engaged in any "reportable transaction" as defined in Treasury Regulation Section 1.6011-4(b) or any transaction under a similar provision of state, local or foreign Tax law.
- (l) No private letter ruling or other ruling has been requested or received from any Tax authority with respect to the Company or the Project.

- (m) The Company has no liability for the Taxes of any Person (i) under Treasury Regulation Section 1.1502-6 (or any similar provision of state, local or foreign Tax law), (ii) as a transferee or successor, or (iii) by Contract.
- (n) No power of attorney is currently in effect on behalf of the Company with respect to any Taxes.
- (o) Neither Seller nor the Company (or any Affiliate thereof) has taken any action that would cause any of the Purchased Assets to be subject to the alternative depreciation system within the meaning of Code Section 168(g) or to be treated as tax-exempt use property within the meaning of Code Section 168(h), nor are any of the assets of the Company so considered.
- (p) No Person has elected to claim the Production Tax Credit under Section 45 of the Code or the energy investment tax credit pursuant to Section 48 of the Code with respect to the Project. No Person has applied for a grant with respect to the Project, or any portion thereof, from the U.S. Treasury Department under Section 1603 of Division B of the American Recovery and Reinvestment Act of 2009, as amended, and no such grant has been received with respect to the Project.
- (q) Neither the Project, nor any portion of the Project, was placed in service for purposes of Section 168(k), Section 48 or Section 45 of the Code prior to the Closing.



(t) The Project is located in its entirety in the United States.

(u)

- (v) No Person has an ownership interest, or a right to acquire an ownership interest, in the Company or the Project, other than, (i) the Shares Seller is selling to Buyer pursuant to this Agreement, and (ii) with respect to the Project, the Company.
- (w) No power sales contract of the Company is described in Code Section 45(e)(7).

Section 4.12 <u>Regulatory Status.</u> Neither Seller nor the Company is subject to regulation as a "public utility" under the FPA, a "public-utility company" as defined under PUHCA, an "electric utility" as defined in Section 31.002(6) of the Texas Public Utility Regulatory Act, or any state statutes or regulations defining regulated public utilities under Texas Law, including, but not limited to Chapter 25 of the Texas Administrative Code, taking into account the current state of development activities by the Company and Seller as of the date of this Agreement. The Company is not an "electric-utility company" or a "holding company" as defined under PUHCA. Seller either is not a holding company as defined under PUHCA or is a holding company that is entitled to the exemptions and waivers set forth at 18 C.F.R. § 366.3(a). The representations and warranties in this Section 4.12 and Section 4.5(c) are Seller's sole representations and warranties regarding energy regulatory matters, except for Permits (which are governed by Section 4.15).

Section 4.13 Contracts.

- (a) Schedule 4.13(a) sets forth a list of the Contracts (other than the Land Contracts) to which the Company is a party or by which the Purchased Assets are bound or to which the Project is subject or to which Seller or any Seller Affiliate is a party to the extent related primarily to the Business (collectively, with the Land Contracts, the "Purchased Contracts"). On or prior to the Closing Date Seller shall assign, or cause to be assigned, all Purchased Contracts listed on Schedule 4.13(a) as of the date of this Agreement, other than the Generator Interconnection Agreement.
 - (b) Schedule 4.13(b) sets forth a list of the Support Obligations.
- (c) Seller has made available to Buyer true, correct and complete copies of all Purchased Contracts and Support Obligations, including all amendments, waivers or modifications thereto.
- (d) Each of the Purchased Contracts and the Support Obligations is in full force and effect and constitutes a legal, valid and binding obligation of the Company or, prior to the Closing, Seller or any Seller Affiliate, as applicable, and, to Seller's Knowledge, of the other parties thereto.
- (e) Neither the Company nor Seller or any Seller Affiliate is in Default under any Purchased Contract or Support Obligation and, to Seller's Knowledge, no other party to any of the Purchased Contracts or Support Obligations is in Default thereunder. No event has occurred that (with or without notice, lapse of time or both) could reasonably be expected to constitute a material Default by the Company or Seller or any Seller Affiliate, as applicable, under any such Purchased Contract or Support Obligation. Neither the Company nor Seller or any Seller Affiliate has received any written notice or,

to Seller's Knowledge, oral notice, from any counterparties in connection with any of the Purchased Contracts or Support Obligations of (i) any material Default under any Purchased Contract or Support Obligation, (ii) the fact that any such party will terminate, not renew, cancel or substantially decrease its business with the Company, or (iii) any claim for damages or indemnification with respect to the products or performance of services pursuant to any Purchased Contract.

- (f) The consummation of the transactions contemplated by this Agreement will not require the Consent of any party to a Purchased Contract or Support Obligation except as specifically set forth on <u>Schedule 2.7(b)(ix)</u>.
- (g) <u>Schedule 4.13(g)</u> sets forth a list of the Contracts (other than Purchased Contracts) to which Seller is a party that (i) are not primarily related to the Business and (ii) are necessary to enable the Project to be located, interconnected, erected, constructed, operated and maintained on the Site (collectively, the "*Shared Contracts*").

Section 4.14 Real Property.

- (a) Schedule 4.14(a) sets forth a list of all Land Contracts.
- (b) Seller has made available to Buyer copies of all Land Contracts, and, as of the Closing Date, those copies are complete and accurate in all respects.
- (c) The Company does not own any real property in fee except as set forth on <u>Schedule 4.14(a)</u>. Other than the Real Property Interests, the Company holds no other rights or interests in real property.
- (d) Except as set forth on <u>Schedule 4.14(d)</u>, to Seller's Knowledge, the Company and an Affiliate of Seller hold, and as of the Closing Date the Company will exclusively hold, good and marketable title to the Real Property Interests free and clear of all Liens, adverse claims and other matters adversely affecting the Company's title to such Real Property Interests (other than Permitted Liens).
- (e) Except as set forth on Schedule 4.14(e), each Land Contract (i) is a legal, valid and binding agreement of the Company or, prior to the Closing, an Affiliate of Seller, as applicable, (ii) is in full force and effect, and (iii) is enforceable, and will continue to be legal, valid and binding and enforceable on identical terms immediately following the consummation of the transactions contemplated hereby, against Seller or the Company, as applicable, and each other party thereto. Seller or the Company has paid, or caused to be paid, all amounts currently due and payable with respect to each Land Contract.
- (f) There exists no Default under any Land Contract by the Company, Seller or, to Seller's Knowledge, any other Person that is a party thereto and to Seller's Knowledge, no event has occurred that would constitute a Default or would permit termination, modification, or acceleration thereunder.

- (i) As of the Closing Date, there are no pending, and to Seller's (g) Knowledge any threatened, appropriation, condemnation or like proceedings relating to any real property encumbered by the Land Contracts, the Project or any portion thereof, (ii) none of Seller, the Company or any Affiliate thereof have received any written notice from a Governmental Authority of any violation of any applicable zoning law, regulation or rule or other Law relating to or affecting any such real property, and (iii) neither the Company nor Seller has granted any options or rights of first offer or first refusal to purchase or lease such real property, or any portion thereof or interest therein. Except as set forth on Schedule 4.14(g), as of the Closing Date, the zoning and private land use restrictions on the real property which is the subject of the Land Contracts permit the location, erection, interconnection, construction, operation and maintenance, on the Site, of a Sufficient Project. To Seller's Knowledge, there is no action pending before any Governmental Authority to change the applicable zoning or building ordinances or any other Law affecting the Land Contracts that could reasonably be expected to have an adverse effect on the Project.
- (h) Except for the amounts payable by the Company following the Closing Date as set forth in the Land Contracts, there are no other rents, royalties, fees or other amounts payable or receivable by the Company in connection with the Land Contracts.
- (i) Neither Seller nor the Company have (i) made, ordered and/or contracted for any construction, repairs, alterations or improvements to be made on or to any real property encumbered by the Land Contracts, or (ii) ordered materials or supplies for any real property encumbered by the Land Contracts, which in either case have not been paid for in full and there are no outstanding or disputed claims for any such work or item.
- (j) Neither the Company nor Seller has assigned, transferred, conveyed, mortgaged, deeded in trust or encumbered any of the Real Property Interests (except as part of the Pre-Closing Asset Transfer) and all such Real Property Interests are free and clear of all Liens other than Permitted Liens.
- (k) As of the Closing Date, the Real Property Interests will constitute all land and other rights in the real property necessary in connection with the acquisition, development, construction, installation, interconnection, completion, operation, and maintenance on the Site of a Sufficient Project, in accordance with all Laws.
- (l) Except (i) for Punchlist Items and (ii) as set forth on Schedule 4.14(l), as of the Closing Date the Land Contracts are (A) sufficient to enable the Project to be located, erected, interconnected, constructed, operated and maintained as currently contemplated by the Company and (B) provide legal and physical ingress and egress rights to and from a public or private right-of-way for any commercially reasonable purpose in connection with the construction and operation of the Project.

Section 4.15 Permits.

(a) <u>Schedule 4.15</u> sets forth all Governmental Approvals required to authorize the construction, operation, ownership, use and maintenance of a Sufficient Project. Part I

of <u>Schedule 4.15</u> includes all Permits obtained with respect to the Project. Part II of <u>Schedule 4.15</u> lists all Permits that have not yet been obtained but for which the Company has filed applications. Part III of <u>Schedule 4.15</u> lists all Permits that have not yet been obtained but are expected to be obtained on or prior to Closing. Part IV of <u>Schedule 4.15</u> lists required Permits that have not yet been obtained and are not expected to be obtained on or prior to Closing. Seller has provided Buyer with complete and accurate copies of all applications and Permits listed in Part I of <u>Schedule 4.15</u>. Each Permit listed on Part I of <u>Schedule 4.15</u> was validly issued, is in full force and effect and not subject to an appeal or otherwise appealable, and has not been modified, revoked or amended since its issuance.

- (b) Each of the Company and Seller has performed all material obligations and complied at all times in all material respects with the Permits set forth on Part I of Schedule 4.15.
- (c) No event has occurred that could reasonably be expected to constitute a material Default or violation by the Company or Seller under any Permit listed in Part I of <u>Schedule 4.15</u> or, to Seller's Knowledge, prevent the issuance of any Permit listed on Part II, Part III, or Part IV of Schedule 4.15.
- (d) The consummation of the transactions contemplated by this Agreement will not affect the legality, validity, binding nature, enforceability or force and effect of any Permit listed on <u>Schedule 4.15</u>, or, except as set forth on <u>Schedule 4.15(d)</u>, require notice to or the Consent of any Governmental Authority.
- (e) No Claim is pending against, and to Seller's Knowledge, none has been threatened that seeks to challenge or limit the legality, validity, binding nature, enforceability or force and effect of any Permit listed on Schedule 4.15.

Section 4.16 <u>Environmental Matters</u>. Except as set forth on <u>Schedule 4.16</u>:

- (a) the Company, and with respect to the Business, Seller, are in material compliance with applicable Environmental Laws, and the Company and Seller have no material Liabilities under Environmental Laws related to the Purchased Assets, the Company or the Project;
- (b) the Company and Seller have obtained, maintained and complied with all material Governmental Approvals necessary under any applicable Environmental Law for the current state of development, construction, and ownership of the Project (other than non-discretionary ministerial Permits that are not necessary prior to Closing);
- (c) neither the Company nor Seller has received written notice of any Environmental Claim and, to Seller's Knowledge, no Environmental Claim has been threatened, against the Company, the Project or Seller by any Person under any Environmental Laws;
- (d) to Seller's Knowledge, there are no facts, circumstances, conditions or occurrences relating to the Purchased Assets, the Company or the Project or the past

operations of the Company that could reasonably be expected to form the basis of a material claim by any Person under any Environmental Law against Seller or its Affiliates, including the Company;

- (e) to Seller's Knowledge, no portion of the Site contains or has ever contained any underground storage tank, surface impoundment or similar device used for the management of wastewater, or other waste management unit dedicated to the disposal, treatment, or long-term storage (greater than thirty (30) days) of waste materials in a manner expected to result in a material Environmental Claim;
- (f) there is no site to which the Company or Seller has transported, or arranged for the transport of, Hazardous Materials associated with the Company, the Project or the Purchased Assets which, to Seller's Knowledge, could reasonably be expected to result in an Environmental Claim; and
- (g) there has been no Release of any Hazardous Material at or from the Project in connection with the Company's or Seller's operations at the Project or, to Seller's Knowledge, by any other Person, that could reasonably be expected to result in a material Environmental Claim.

Section 4.17 <u>Intellectual Property</u>.

- (a) <u>Schedule 4.17</u> sets forth all Intellectual Property that the Company will exclusively own, or have the license or right to use for the Business.
- (b) Neither the Company nor Seller has received from any third party a Claim that it is infringing or violating the Intellectual Property of such third party.
- (c) To Seller's Knowledge, the Purchased Assets are free of any third party rights relating to intellectual or proprietary property or agreements and the utilization of the Purchased Assets does not infringe upon or violate the intellectual property rights of any other Person.
- (d) The representations and warranties set forth in this Section 4.17 are Seller's sole and exclusive representations and warranties concerning Intellectual Property matters.
- Section 4.18 <u>Brokers</u>. The Company does not have any liability or obligation to pay fees or commissions to any broker, finder or agent with respect to the transactions contemplated by this Agreement.
- Section 4.19 <u>Employees and Labor Matters</u>. The Company has never had any employees.
- Section 4.20 <u>Employee Benefits</u>. The Company has never sponsored, maintained or contributed to any Benefit Plan.

Section 4.21 <u>Wind Data</u>. Seller has delivered to Buyer true, correct and complete copies of all books and records containing any Wind Data. The Wind Data was collected at the locations and during the times set forth in such documents. Seller has not omitted or failed to provide to Buyer any Wind Data measured and recorded at the Site on or before the dates specified on <u>Schedule 4.21</u> by or on behalf of the Company, Seller or any of its Affiliates, or, to the extent that the same are in the Company's, Seller's or its Affiliates' possession or under the Company's Seller's or its Affiliates' control, prepared by or on behalf of any other Person. To Seller's Knowledge, except for the Wind Data, there is no other wind speed data or other relevant wind characteristics data that have been prepared in respect of the Project.

Section 4.22 <u>Insurance</u>. <u>Schedule 4.22</u> describes the insurance maintained by or on behalf of the Company with respect to the Project. Such insurance coverage is in full force and effect, all premiums with respect thereto covering all periods up to and including the date as of which this representation is being made that are required to have been paid as of such date have been paid (other than retroactive premiums which may be payable with respect to commercial general liability insurance policies), and no written notice of cancellation or termination has been received by the owner or holder of any such insurance coverage. No pending Claims by or for the benefit of the Company exist under any such insurance coverage covering the Company.

Section 4.23 <u>No Other Agreements to Sell the Purchased Assets.</u> Neither the Company nor Seller has any legal obligation to, or non-binding agreement in principle with, any other Person to sell or effect a sale of all, or any portion of, the Company or the Purchased Assets.

Section 4.24 <u>Books and Records</u>. All Books and Records of the Company have been maintained in all material respects in accordance with applicable Law.

Section 4.25 <u>Studies and Reports. Schedule 4.25(a)</u> contains a true, correct and complete list of all material studies and reports (collectively, "*Reports*"), including, if existing, those studies relating to wildlife (including avian), environmental, anthropological, geotechnical, resource, curtailment, feasibility, geological, biological, watershed, flora and fauna, wetlands, groundwater resources, archaeological, cultural, visual impact, noise impact, television reception interference, transmission (including constraints), wind resources, projected revenues, engineering, design, suitability of the turbines, and construction of the Project, that are in the possession or control of Seller, the Company or any of their Affiliates or Representatives. A true, correct and complete copy of each such report, including any amendments thereto, has been made available to Buyer prior to the execution of this Agreement. <u>Schedule 4.25(b)</u> lists those Material Reports that are required to be completed and/or obtained pursuant to Section 6.6(j).

Section 4.26 <u>Affiliate Transactions</u>. Except as disclosed on <u>Schedule 4.26</u> or under the Purchased Contracts, there are no existing or pending transactions, Contracts or Liabilities between or among the Company on the one hand, and Seller or any of Seller's Affiliates on the other hand.

Section 4.27 Certain Disclaimers.

- Except as expressly set forth in Article III and Article IV, none of Seller or its, or its Affiliates', Representatives, officers or Affiliates has made or is making any other representations or warranties whatsoever, express or implied, written or oral, and expressly disclaims any other representations or warranties of any kind or nature, express or implied as to the title, condition, value or quality of the shares, the Company, the Project, or the Purchased Assets and, except as expressly set forth in Article III and Article IV, Seller, its Representatives and Affiliates, and such Affiliates' Representatives, specifically disclaim any representation or warranty of merchantability, usage, suitability or fitness for any particular purpose with respect to the Project or the Purchased Assets, or any other part thereof, or as to the workmanship thereof, or the absence of any defects therein, whether latent or patent, and furthermore, except as otherwise expressly set forth in Article III and Article IV, Seller, its Representatives, and Affiliates, and such Affiliates' Representatives, makes no representations or warranties regarding environmental matters.
- (b) The Parties acknowledge and agree that, except as otherwise expressly provided in <u>Article III</u> and <u>Article IV</u>, the Company is being transferred through the sale of the Shares "AS IS, WHERE IS, WITH ALL FAULTS" and, except as expressly set forth in <u>Article III</u> and <u>Article IV</u>, Seller expressly disclaims any representations and warranties of any kind or nature, express or implied, as to the condition, value or quality of the Company, the Project and the Purchased Assets or the prospects (financial market or otherwise), risks and other incidents of the Company, the Project and the Purchased Assets.

ARTICLE V

REPRESENTATIONS AND WARRANTIES OF BUYER

Buyer hereby represents and warrants to Seller that each and all of the following representations and warranties set forth in this <u>Article V</u> are true and correct as of the date of this Agreement and as of the Closing Date (except for such representations and warranties that speak as of a specific date, in which case such representations and warranties are true and correct as of such date):

- Section 5.1 <u>Organization</u>. Buyer is a corporation, validly existing and in good standing under the Laws of the State of New Mexico. Buyer is duly qualified or licensed to do business in each other jurisdiction where the actions to be performed by it under this Agreement makes such qualification or licensing necessary, except in those jurisdictions where the failure to be so qualified or licensed would not have a material adverse effect on its ability to perform such actions.
- Section 5.2 <u>Authority; Enforceability</u>. Subject to Section 2.8(a)((xii), Buyer has all requisite corporate power and authority to enter into this Agreement and the Company Assignment Agreement, to perform its obligations hereunder and thereunder and to consummate

the transactions contemplated hereby and thereby. The execution and delivery by Buyer of this Agreement and the Company Assignment Agreement and the performance by Buyer of its obligations hereunder and thereunder have been duly and validly authorized by all necessary action on behalf of Buyer. This Agreement has been, and the Company Assignment Agreement when executed will be, duly and validly executed and delivered by Buyer and constitutes, or will constitute, as applicable, the legal, valid and binding obligation of Buyer enforceable against Buyer in accordance with its terms.

- Section 5.3 <u>No Conflicts.</u> The execution and delivery by Buyer of this Agreement and the Company Assignment Agreement, and the performance by Buyer of its obligations hereunder and thereunder do not:
 - (a) result in a violation of or a breach of any of the terms, conditions or provisions of the Organizational Documents of Buyer;
 - (b) result in a Default under any material Contract to which Buyer is a party, except for any such Default which would not, in the aggregate, have a material adverse effect on Buyer's ability to perform its obligations under this Agreement or the Company Assignment Agreement; or
 - (c) (i) violate or breach any term or provision of any Law, Governmental Approval or order applicable to Buyer or any of its Assets, except as would not have a material adverse effect on Buyer's ability to perform its obligations under this Agreement or the Company Assignment Agreement or (ii) require any material Consent of any Governmental Authority under any applicable Law, other than such Consents listed on Schedule 2.7(b)(ix) or such Consents, which, if not made or obtained, would not have a material adverse effect on Buyer's ability to perform its obligations under this Agreement or the Company Assignment Agreement.
- Section 5.4 <u>Legal Proceedings</u>. Buyer has not been served with notice of any Claim, no Claim is pending and to Buyer's knowledge, none is threatened in writing, against Buyer which seeks a writ, judgment, order or decree restraining, enjoining or otherwise prohibiting or making illegal any of the transactions contemplated under this Agreement or the Company Assignment Agreement.
- Section 5.5 <u>Purchase for Investment</u>. Buyer represents and warrants that (a) the Shares are being acquired for Buyer's own account and not with a view to, or intention of, distribution thereof in violation of the 1933 Act, or any applicable state securities laws, and the Shares shall not be disposed of in contravention of the 1933 Act or any applicable state securities laws, (b) Buyer's knowledge and experience in financial and business matters are such that it is capable of evaluating the merits and risks of the investment in the Shares, and (c) Buyer is an "accredited investor" as such term is defined in Regulation D under the Securities Act.
- Section 5.6 <u>Brokers</u>. Buyer does not have any liability or obligation to pay fees or commissions to any broker, finder or agent with respect to the transactions contemplated by this Agreement.

Section 5.7 <u>Financial Resources</u>. Buyer has and at all times prior to Closing will continuously have sufficient funds available or committed sources for sufficient funds to perform its obligations with respect to the transactions contemplated hereby, including having available at the Closing Date funds sufficient to pay the amount payable by Buyer to Seller pursuant to Section 2.2.

Section 5.8 <u>Certain Disclaimers</u>. Except as Expressly set forth in this <u>Article V</u>, none of Buyer or its, or its Affiliates', Representatives, officers or Affiliates has made or is making any other representations or warranties whatsoever, express or implied, written or oral, and expressly disclaims any other representations or warranties of any kind or nature, express or implied.

ARTICLE VI

COVENANTS

The Parties hereby covenant and agree as follows:

Section 6.1 Books and Records.

- (a) From and after Closing, Buyer will preserve and keep the Books and Records of the Company and the Project that relate to the period prior to the Closing Date (including all accounting records) for a period of seven (7) years from the Closing, or for any longer periods as may be required by any Governmental Authority or ongoing litigation. From and after Closing, Buyer, upon reasonable prior written notice from Seller, will provide to Seller and its Representatives access to or copies of books and records of the Company to the extent relating to events that occurred prior to Closing and to the extent needed for a legitimate business purpose or to enforce rights under this Agreement provided that all such books and records shall be confidential and the information therein shall not be used or disclosed except as required by Law, for a legitimate business purpose, or to enforce rights under this Agreement.
- (b) Seller will deliver the Books and Records of the Company in Seller's possession to Buyer as promptly as practicable following the Closing Date if such Books and Records are not present at the Company on the Closing Date. Seller may retain a copy of the Books and Records of the Company.
- Section 6.2 <u>Transfer Taxes</u>. Buyer shall pay any Transfer Taxes in connection with this Agreement and the transactions contemplated hereby. Buyer shall be responsible for filing any Tax Return regarding any Transfer Taxes in connection with this Agreement and the transactions contemplated hereby and shall do so within the time period required by Law and provide a copy of the return to Seller, but will alert Seller of the need to file such a return first in writing in case there is any disagreement about whether Transfer Taxes are owed and work in good faith to resolve any disagreement. For the avoidance of doubt, Buyer will be solely responsible for any Transfer Taxes arising from any action to dissolve, terminate or restructure the Company or to convey, distribute or transfer any assets, properties or other rights to or from the Company after Closing.

Section 6.3 Tax Matters.

- (a) Except as provided in Section 6.2 relating to Transfer Taxes:
- (i) In the case of any Straddle Period, (i) franchise Taxes based solely on capital, ad valorem Taxes and property Taxes shall be apportioned between the portion of such Straddle Period ending on the Closing Date and the portion of such Straddle Period beginning after the Closing Date on a daily pro-rata basis, and (ii) all other Taxes shall be apportioned between the portion of such Straddle Period ending on the Closing Date and the portion of such Straddle Period beginning after the Closing Date on a closing of the books basis.
- (ii) Buyer and Seller shall furnish or cause to be furnished to each other, as promptly as practicable, such information and assistance relating to the Project as is reasonably necessary for the preparation and filing of any Tax Return, claim for refund, or other filings relating to Tax matters, for the preparation for any Tax audit, for the preparation for any Tax protest and for the prosecution or defense of any suit or other proceeding relating to Tax matters.
- (iii) The Parties agree that prior to the Closing, Seller will not negotiate with any local taxing authority regarding tax rates or structures for the Project without the prior written consent of Buyer, and that if such consent to negotiate is provided, any such agreement regarding tax rates or structures entered into prior to the Closing is also subject to the prior written consent of Buyer. Prior to the Closing, Buyer will not negotiate with any local taxing authority regarding tax rates or structures for the Project, that would apply to any Pre-Closing Tax Period without the prior written consent of Seller, and if such consent to negotiate is provided, any such agreement regarding tax rates or structures entered into prior to the Closing is also subject to the prior written consent of Seller.
- (iv) Income Taxes relating to or accrued by the Company prior to the Closing that have not been paid by Seller shall be paid by and remain the responsibility of Seller.





Conduct of the Company Prior to Closing. Except as contemplated, Section 6.4 permitted or required by this Agreement, or as required by applicable Laws, between the date hereof and the Closing, Seller will cause the Company to conduct the Business, maintain all books and records, and use Commercially Reasonable Efforts to preserve and maintain all of the Purchased Assets, each in the Ordinary Course of Business. Without limiting the foregoing, Seller shall cause the Company to use Commercially Reasonable Efforts, consistent with Prudent Wind Industry Practices, material applicable Laws, and all Purchased Contracts, to develop the Project, and to preserve its relations with and the goodwill of the suppliers, contractors, Governmental Authorities, personnel, licensors, customers, distributors and others having business relations with the Company or Seller in respect of the Project. Notwithstanding the foregoing, between the date hereof and the earlier to occur of the Closing and the termination of this Agreement, except as permitted or contemplated by the terms of this Agreement, without the prior written consent of Buyer (which consent may be withheld in Buyer's sole discretion, except in the cases of items (d), (h), (j) and (l) below, and item (q) as the same relates to items (d), (h), (j) and (l), in which cases Buyer's consent shall not be unreasonably withheld, conditioned or delayed), the Company and, with respect to the Business, Seller shall not do, or suffer to occur, any of the following:

- (a) take any action which could reasonably be expected to interfere with or prevent the consummation of the transactions contemplated by this Agreement;
 - (b) amend the Organizational Documents of the Company;
 - (c) adopt a voluntary plan of complete or partial liquidation or dissolution;
- (d) incur any obligations or Liabilities (through a Contract or otherwise) that would remain outstanding obligations or Liabilities of the Company on or following the Closing Date, other than with respect to any Land Contracts executed after the date hereof which are substantially in the form of the applicable Land Contracts existing as of the date hereof:
- (e) declare, set aside or pay any dividends on or make any other distributions (whether in cash, stock, equity securities or property) in respect of any Equity Interests of the Company or split, combine or reclassify any such Equity Interests or issue or authorize the issuance of any other securities of the Company in respect of, in lieu of or in substitution for any Equity Interests;
- (f) issue, deliver, sell, authorize, pledge or otherwise encumber any Equity Securities;

- (g) acquire or agree to acquire by merging or consolidating with, or by purchasing any material equity or voting interest in or a material portion of the assets of, or by any other manner, any business or any Person or division thereof;
- (h) sell, lease, license, encumber or otherwise dispose of any of the Purchased Assets (other than Permitted Liens) or enter into any written or oral agreement with a third party with respect to the sale, lease, license, encumbrance or other disposition of any the Purchased Assets (other than the transfer of the Purchased Assets from Seller or its Affiliates to the Company);
- (i) make any change in the Business except such changes required by applicable Law;
- (j) amend, modify, grant any waivers in respect of, cancel, terminate, or consent to the cancellation or termination of, any Purchased Contract;
- (k) enter into Contracts that include change in control restrictions, direct or indirect equity ownership transfer restrictions, restrictions on competition, rights of first refusal, rights of first offer, or other similar rights;
- (l) settle or agree to settle any material Action with any third party, including any Governmental Authority;
- (m) make or effect any change in any accounting methods, principles or practices or any change in, or adoption of any new, tax accounting principle, method of tax accounting or tax election;
- (n) file any amended Tax Return with respect to any Taxes, enter into any closing agreement, settle or compromise any proceeding with respect to any Tax claim or assessment, surrender any right to claim a refund of Taxes, consent to any extension or waiver of the limitation period applicable to any Tax claim or assessment relating to the Company, take any other similar action relating to the filing of any Tax Return or the payment of any Tax;
- (o) make or change any election in respect of Taxes, adopt or change any accounting method in respect of Taxes, file any federal, state, or foreign income Tax Return or any other material Tax Return without the consent of Buyer prior to filing, file any amendment to a federal, state, or foreign income Tax Return or any other material Tax Return, enter into any Tax sharing or similar agreement or closing agreement, settle any claim or assessment in respect of Taxes, or consent to any extension or waiver of the limitation period applicable to any claim or assessment in respect of Taxes, or enter into intercompany transactions giving rise to deferred gain or loss of any kind, or take any other similar action relating to the filing of any Tax Return or the payment of any Tax, if such election, adoption or other action would have the effect of increasing the Tax liability of the Company for any period ending after the Closing Date or decreasing any Tax attribute of the Company existing on the Closing Date;

- (p) submit any rate schedules to Federal Energy Regulatory Commission or take any other actions that would result in the Company becoming a "public utility" within the meaning of Section 201(e) of the FPA or within the meaning of any applicable state statute; or
- (q) agree to enter into any Contract or otherwise any commitment to do any of the foregoing in this Section 6.4.

Seller shall be permitted to request consent from Buyer in writing (including by electronic mail) by delivering written notice (including by electronic mail) to all of the individuals specified on Schedule 6.4 (which Schedule may be updated from time to time by Buyer) which written notice shall include clear and conspicuous language stating that such notice triggers a seven (7) Business Day response period under this Section 6.4 and that rights will be forfeited hereunder if Buyer does not timely respond. If no such individual responds (including by return email) to any such written notice within seven (7) Business Days after delivery of such initial written notice, Buyer shall be deemed to have provided its prior written consent and approval to the taking of such action upon and under the circumstances described in such request.

Section 6.5 <u>Purchased Property</u>. If requested by Buyer following the date of this Agreement, Seller shall use Commercially Reasonable Efforts to cause the Company to obtain from those landowners identified by Buyer a fee simple interest in land identified by Buyer for an operating and maintenance facility (not to exceed acres) and a Project substation (not to exceed acres), in each case at a price not to exceed per acre and on terms and conditions acceptable to Buyer (the "*Purchased Property*").

Section 6.6 <u>Development Work</u>. Seller shall cause the Company to, in cooperation and coordination with Buyer and at the sole cost and expense of Seller, perform the following actions related to the development of the Project, in a manner consistent with the Design Package and the primavera network diagram attached hereto as <u>Schedule PND</u> (the "Development Work"):

- (a) implement a permitting and regulatory strategy with local, state and federal agencies sufficient to obtain all Governmental Approvals required for the construction, ownership and operation of the Project (excluding the Buyer's Regulatory Approval); provided, Buyer is responsible for permits related to construction activities, including building permits, storm water permits, notice of intent, air quality permits, approach and turning radii permits (the "EPC Permits");
- (b) support and, as requested, assist with all filings and other communications with respect to the Buyer's Regulatory Approvals and the EPC Permits;
- (c) negotiate and complete all Land Contracts and obtain all Real Property Interests necessary to acquire, develop, interconnect and, to the extent reasonably foreseeable, construct, install, complete, operate and maintain on the Site the Project, and

any Land Contract executed after the date hereof shall be substantially in the form of the applicable Land Contracts existing as of the date hereof;

- (d) acquire a fee simple interest in real property for an operation and maintenance building and Project substation as provided for in, and in accordance with, Section 6.5:
- (e) prior to the Closing Date, if permitted under the applicable Land Contract, release from the Project those parcels having title complications that are incurable as determined by Buyer in accordance with, and subject to, Section 2.7(d));
- (f) manage pre-Closing negotiations between Seller or the Company and the Landowners, and support Buyer in any post-Closing negotiations;
- (g) support landowner relations and communications for activities such as pre-Closing landowner meetings, and support Buyer in any such post-Closing activities;
- (h) manage pre-Closing zoning and other permitting matters, including obtaining all Governmental Approvals (excluding the Buyer's Regulatory Approvals and the EPC Permits) necessary to initiate construction of the Project and to enable the Company to own, lease or otherwise hold the Project's Assets to carry on the business and support Buyer in any such post-Closing matters;
- (i) manage pre-Closing title matters including, identifying encumbrances in coordination with Buyer (including any federal or state holdings or easements), implementing curative measures and procurement of the Title Commitments, and obtaining the Survey, including performing such obligations set forth in Section 2.7(d), and support Buyer in any such post-Closing matters;
- (j) complete and/or obtain all Material Reports, which shall be in form and substance reasonably acceptable to Buyer;
 - (k) collect and analyze met tower data;
- (l) assist with the development of a Site plan, including by completing geo-coordinates for all final and all alternate turbine locations and all proposed setbacks, Site optimization, micro-siting studies, re-surveys, and other related Development Work in connection with turbines (including any other related pre-Closing Development Work associated with re-locating turbine sites due to adverse site conditions or constructability issues), the collection system, the Project substation, the operations and maintenance building, and access roads (including public and turbine access roadway improvement assessments and all agreements related thereto), and pre-Closing re-permitting associated with any adjustments or modifications to the aforementioned (the Site plan resulting from each of the foregoing, the "Final Site Plan"), which Final Site Plan will, if reasonably available when the Survey is being prepared, be overlaid in the Survey;

(m) obtain the following:

- (i) all required geotechnical reports of all final and alternate turbine locations and at all ancillary structure locations;
- (ii) studies/analysis relating to the observed wind regime and estimated energy production at the proposed Site;
- (iii) environmental, cultural and historical surveys of all corridors required to construct the Project;
- (iv) desktop wetlands assessment to identify the existence and location of jurisdictional wetlands and, if the construction, operation or maintenance of the Project is expected to impact wetlands, prepare a wetland delineation report for potentially impacted wetlands and surface waters within all corridors required to construct the Project, such report based on the design assumption that the Project will qualify for NationWide Permit 12 or NationWide Permit 14 utilizing a self-verification method appropriately documented in the report;
- (v) Tier I and II studies conducted in accordance with the USFWS Land Based Wind Energy Guidelines ("WEG") to be documented in the Wildlife Conservation Strategy (i.e., not a separate report);
- (vi) desktop avian and Protected Species and habitat assessments and, if required, field assessments or studies, including any final findings, related to the Site in accordance with Tier I, II, III, and IV of the WEG to be documented in the Wildlife Conservation Strategy and associated desktop reports;
- (vii) eagle and raptor nest and use studies, which shall be consistent with the USFWS Eagle Conservation Plan Guidelines (but shall not require preparation of an Eagle Conservation Plan or pursuit of an eagle take permit);
 - (viii) USFWS analyses or studies related to the Project;
- (ix) all required cultural resource and architectural history studies within the Site;
- (x) Federal Aviation Administration screening studies associated with Project development and any additional micro-siting required to finalize the Site layout; provided that, subject to Section 2.7(b)(ii), actions under this Section 6.6(m)(x) not completed prior to Closing may be identified by Seller on Schedule 6.6 at the Closing;
 - (xi) a beam path study within the Site;
 - (xii) any acoustic and shadow flicker modeling reports required to be conducted as part of the Project or by any Purchased Contract, applicable Law or Permit; and
 - (xiii) any required soil/geotechnical/geological studies;

- (n) develop a crossing permit matrix and coordinate and complete all required crossing agreements with respect to existing utilities within the Site; provided that, so long as such crossing permit matrix is completed before Closing, and subject to Section 2.7(b)(ii), actions under this Section 6.6(n) not completed prior to Closing may be identified by Seller on Schedule 6.6 at the Closing;
- (o) review and provide a description and status of past or on-going environmental projects relevant to the Site done in settlement with a regulatory agency or due to a voluntary initiative;
- (p) consistent with the Phase I Environmental Site Assessment, complete a review of and list all known spills or Releases and all other recognized environmental conditions that have occurred at the Site and the actions taken to remediate them;
 - (q) complete the standard broadcast Site review;
- (r) complete a review of any United States Department of Agriculture Conservation Reserve Program or Wetlands Reserve Program, and designations pertaining to the Site and list all potentially affected parcels;



- (t) to the extent the same are not included in the Survey, provide to Buyer Site drawings showing (i) vertical relief and contour intervals, (ii) setback requirements including those imposed by Contract or applicable Law, (iii) wetlands delineation, and (iv) plottable offsite easements or servitudes required for the interconnection, construction, operation and maintenance of the Project; and
- (u) perform the activities designated as Seller's responsibility on <u>Schedule 6.6</u> attached hereto.

Section 6.7 <u>Purchased Asset Transfer</u>. If applicable, prior to (which may be on the same day as) the Closing, Seller shall, and shall cause its Affiliates to, (a) assign, convey and transfer to the Company, free and clear of all Liens other than Permitted Liens, all of Seller's and its Affiliate's right, title and interest in and to the Purchased Assets owned by Seller or its Affiliates or in which Seller or any of its Affiliates have any interest in, including all work or Assets related solely to the Project generator tie line, and (b) cooperate with Buyer to allow Buyer to replicate and/or continue to receive the benefit of the Shared Contracts (the "*Pre-Closing Asset Transfer*"). All costs and expenses incurred in connection with such transfer shall be borne by Seller.

Section 6.8 <u>Access to Information</u>.

(a) Subject to the terms of the Confidentiality Agreement and subject to the safety rules and regulations of Seller, from the date hereof until the earlier of (i) the

Closing and (ii) the termination of this Agreement in accordance with Section 2.8, upon reasonable prior written notice, Seller will, and will cause the Company, to (A) afford Buyer and its authorized Representatives reasonable access to the offices, properties (including the Site), Representatives, Contracts, and Books and Records of the Company and the Project, (B) furnish to Buyer and authorized Representatives of Buyer such additional financial and operating data and other information, regarding the Company and the Project (or copies thereof) as Buyer may from time to time reasonably request, and (C) furnish to Buyer and authorized Representatives of Buyer any other information concerning or otherwise relating to the Purchased Assets, the Company and the Project as Buyer or its Representatives may reasonably request; provided that, in the case of clause (B) or (C), Buyer shall reimburse Seller for any third party costs and expenses incurred by Seller or its Affiliates in connection with such activities.

- (b) Without limiting the generality of the foregoing, until the Closing Date, Seller agrees to furnish to Buyer the following reports and notices:
- (i) within ten (10) Business Days after the end of each month prior to the Closing Date, Seller shall deliver to Buyer a report addressing the progress being made with respect to the Development Work;
- (ii) within ten (10) Business Days after any such report is submitted, a copy of any report required to be filed by Seller (or on behalf of Seller) with any Governmental Authority other than in the Ordinary Course of Business; and
- (iii) within ten (10) Business Days after Seller obtains Knowledge thereof, notice of any Environmental Claim by any Governmental Authority or any assertion of an Environmental Claim or material Claims by any other Person or Persons together with a copy of any correspondence relating thereto and a description of any steps Seller is taking and proposes to take with respect thereto.

Section 6.9 Efforts; Consents; Regulatory and Required Seller Approval.

Each Party will use diligent and Commercially Reasonable Efforts to (a) (i) take, or cause to be taken, all appropriate action, and do, or cause to be done, all things necessary, proper or advisable under applicable Laws or otherwise to promptly consummate and make effective the transactions contemplated by this Agreement and the Company Assignment Agreement, (ii) obtain all authorizations, consents, orders and approvals of, and give all notices to and make all filings with, all Governmental Authorities and other third parties that may be or become necessary for the performance of its obligations under this Agreement and the Company Assignment Agreement and the consummation of the transactions contemplated by this Agreement and the Company Assignment Agreement, or that may be or become necessary, proper or advisable pursuant to any Permit or Purchased Contract to which the Company is bound or by which any of the Company's Assets or properties are bound, and (iii) satisfy all conditions to such Party's obligations under this Agreement and the Company Assignment Agreement. Notwithstanding the foregoing or anything to the contrary set forth in this Agreement, in connection with obtaining such authorizations, consents,

orders and approvals from Governmental Authorities or third parties, no Party will be required to make payments, commence legal or regulatory proceedings or agree to modifications of the terms and conditions of any agreements with third parties or Permits. Nothing in this Section 6.9(a) shall require any Party to (A) consent to any action or omission by the other Party or its Affiliates or (B) agree to amend or waive any provision of this Agreement. Each Party shall reasonably cooperate with the other Party in performing the obligations required by this Section 6.9(a), including the negotiation, execution, and assignment of Purchased Contracts and agreements related to the Project. Notwithstanding anything to the contrary contained in this Section 6.9(a), if the Parties are in an adversarial relationship in litigation or arbitration, the furnishing of any documents or information in accordance herewith shall be solely subject to applicable rules relating to discovery and the remainder of this Section 6.9(a) shall not apply.

(b) With respect to Buyer's Regulatory Approval, Buyer will submit, within sixty (60) days after execution of this Agreement, an application or a petition to the NMPRC and the PUCT requesting Buyer's Regulatory Approval. If Buyer obtains Buyer's Regulatory Approval as requested or with modifications that are acceptable to Buyer, and all other conditions precedent are satisfied or waived by the applicable Party, Buyer shall proceed to Closing subject to the terms and conditions of this Agreement



by the date described in Section 2.8(a)(iv), then Buyer shall have the right to terminate this Agreement as described in such section.

- (c) If requested by Buyer, Seller shall, at its own cost, reasonably cooperate and support Buyer's efforts to obtain such approvals from the NMPRC and the PUCT, including assisting in factual development of the filings, providing supportive testimony and written comments; provided, however, that Seller, the Company and their Affiliates will not communicate with the NMPRC staff or the PUCT staff regarding the Project or regulatory approval process without Buyer's express consent, which consent may be withheld for any reason; provided further that such restriction shall not limit or prevent Seller, the Company or their Affiliates from communicating with the PUCT regarding any Permits that may be issued by the PUCT.
- (d) Except as otherwise provided in this Agreement, the Parties will not take any action that is reasonably likely to have the effect of unreasonably delaying, impairing or impeding the receipt of any required authorizations, consents, orders or approvals.

Section 6.10 <u>Notification of Closing</u>. Within sixty (60) days after the Closing Date, Buyer will provide evidence to Seller, in a format reasonably acceptable to Seller, that Buyer has provided notice to all applicable Governmental Authorities and all counterparties to the Contracts of the Company regarding the sale of the Company and the Purchased Assets to Buyer and the new addresses for notice purposes.

Section 6.11 <u>Public Announcements</u>. Subject to a Party's reasonable judgment that it is required by Law or by the rules of a national securities exchange to make such disclosure, neither Party shall issue any public announcement or other statement with respect to this Agreement or the transactions contemplated hereby without the prior consent of the other Party. Additionally, Seller and the Company hereby consent to the disclosure of confidential information regarding the Project and its current status in public filings and informal communications with regulators to be made by Seller or Buyer in connection with seeking approval of the transaction contemplated by this Agreement and in developing the Project; and hereby waive any confidentiality provisions relating thereto currently in effect. Notwithstanding the foregoing, following the Closing Date, Seller may list the Project, including status, location, capacity in megawatts, and commercial operation date (but not including the identity of Buyer), and may use photographs of the Project, in a manner consistent with Seller's listings of other wind projects that it has developed, on Seller's or its Affiliates' websites or Seller's or its Affiliates' other marketing materials, without the consent of Buyer.

Section 6.12 <u>Transfer of Permits</u>. Seller acknowledges that the Project is subject to various Permits and requirements, including requirements to obtain Governmental Approvals authorizing the construction, ownership or operation of the Project, and requirements for the recovery of costs incurred from the Project. In the event Buyer determines that it will, following the Closing, merge or consolidate Company with and into Buyer, Seller shall assist and cooperate with Buyer, at Buyer's request and Buyer's cost and expense, with respect to the transfer of all existing Permits to Buyer and with respect to Buyer's satisfaction of its regulatory requirements in connection therewith.

Section 6.13 <u>Further Assurances</u>. Subject to the terms and conditions of this Agreement, at any time or from time to time after the Closing, at any Party's request and without further consideration, the other Party will execute and deliver to such Party such other instruments of sale, transfer, conveyance, assignment and confirmation, provide such materials and information and take such other actions as such Party may reasonably request in order to consummate the transactions contemplated by this Agreement.

Section 6.14 Schedules. (a) Seller may, from time to time prior to and up to the Closing Date, by written notice to Buyer, disclose (including by adding new schedules) any fact, matter, condition, event or circumstance based on any new facts that arise following the date of this Agreement and that are necessary to correct any matter that would otherwise constitute a breach of any representation or warranty of Seller in Article III or Article IV such that the closing condition in Section 2.7(b)(i) cannot be satisfied, and (b) Seller shall, on a monthly basis by written notice to Buyer, provide an update to the Required Update Schedules together with any documents underlying such update (each of the supplemental disclosures in (a) or (b) above, an "Update"); provided, that, such Updates must be delivered no later than the date that is ten (10) days prior to the anticipated Closing Date, other than with respect to any fact, matter,

condition, event or circumstance that occurs after such date; provided, further, that updates to any of (i) Schedule 1.1–DP (Design Package) and Schedule PND (Primavera Network Diagram), (ii) Schedule 4.5(c) (Purchased Assets), and (iii) Schedule 4.14(l) (Sufficiency of Land Contracts), shall each require Buyer's prior written approval, not to be unreasonably withheld, conditioned or delayed, unless any such update described in clauses (i) to (iii) constitutes a material deviation from the Scope of Work or could reasonably be expected to affect the ability to satisfy Section 2.7(b)(xv), in which case Buyer may withhold its approval in its sole discretion. For the avoidance of doubt, the uploading of documents to the Data Site or other delivery of documents to Buyer or Seller, as applicable, shall not constitute written notice of an Update.



Section 6.15 Release.

- (a) For and in consideration of the amounts payable to Seller under this Agreement, effective as of the Closing, Seller and its Affiliates (other than the Company) (the "Seller Releasing Parties"), do hereby irrevocably and unconditionally release and forever discharge Buyer, the Company and each of their respective Related Parties (the "Buyer Released Parties") from any and all Released Claims that any of the Seller Releasing Parties has or may have, now or in the future; provided, however, that Seller and its Related Parties reserve their rights arising under this Agreement and the Company Assignment Agreement. This release is for any relief, no matter how denominated, including injunctive relief, compensatory damages or punitive damages. Effective as of the Closing, Seller and its Affiliates (other than the Company), further irrevocably covenant and agree not to make any claim in respect of any Released Claim or commence or join any suit, action or proceeding against any of the Buyer Released Parties with respect to or on account of any Released Claim.
- (b) For and in consideration of the transfer of the Shares under this Agreement, effective as of the Closing, Buyer and its Affiliates (including the Company) (the "Buyer Releasing Parties"), do hereby irrevocably and unconditionally release and forever discharge Seller, and each of its Related Parties (the "Seller Released Parties") from any and all Released Claims that any of the Buyer Releasing Parties has or may have, now or in the future; provided, however, that Buyer and its Related Parties reserve their rights arising under this Agreement and the Company Assignment Agreement. This release is for any relief, no matter how denominated, including injunctive relief, compensatory damages or punitive damages. Effective as of the Closing, Buyer, and its Affiliates (including the Company), further irrevocably covenant and agree not to make any claim in respect of any Released Claim or commence or join any suit, action or proceeding against any of the Seller Released Parties with respect to or on account of any Released Claim.
- (c) For purposes of this Section 6.15, the following terms have the meanings set forth below:
- (i) "Released Claims" means any and all liabilities, obligations, causes of action, costs and expenses arising under any theory of contract, tort, breach of duty, strict liability, contribution, unjust enrichment, or any other theory of liability of any jurisdiction, whether known or Unknown Claims and of any nature whatsoever (including negligence or gross negligence but excluding Fraud), in each case (A) that arose at or prior to the Closing or that relate to or arise out of a condition or event that arose at, or that existed or occurred prior to, the Closing and (B) which in any way relate

to or arise out of or are connected with (1) the Project, the Company or the Company's Assets, (2) any of the Seller Released Parties' or Buyer Released Parties', as applicable, direct or indirect ownership of the Company or any ownership or development of the Project or the Company's Assets, (3) Seller's or Buyer's status, as applicable, as an equity owner of the Company or any rights of Seller or Buyer, as applicable, under the Company's organizational or governing agreements, (4) the ownership or the sale and transfer of the Shares, or (5) any right of contribution, right of indemnity or other right or remedy against the Company and/or its current or former Affiliates, officers, directors, employees or other personnel, in connection with any indemnification obligation or any other Liability to which Seller or Buyer, as applicable, may become subject under or in connection with this Agreement.

- (ii) "Related Parties" means, as to a Party, each of such Party's respective Affiliates, successors, assigns, and each of their respective present and former Representatives.
- (iii) "Unknown Claims" means any and all Released Claims which any of the Buyer Releasing Parties or Seller Releasing Parties, as applicable, and their respective Related Parties does not know or suspect exists in its favor at the time of the release of the Seller Released Claims or Buyer Released Claims, as applicable, including those which if known by such Person might have affected such Person's decision(s) with respect to the releases set forth in this Section 6.15.
- (d) With respect to any and all Released Claims, the Parties stipulate and agree that the Releasing Parties shall be deemed to have expressly waived any and all provisions, rights and benefits conferred by any law of any state or territory of the United States, or principle of common law, which is similar, comparable, or equivalent to Cal. Civ. Code § 1542, which provides:

A general release does not extend to claims which the creditor does not know or suspect to exist in his favor at the time of executing the release, which if known by him must have materially affected his settlement with the debtor.

(e) The Parties acknowledge that the inclusion of "Unknown Claims" in the definition of Released Claims was separately bargained for and was a key element of this Agreement. The Releasing Parties acknowledge that they may hereafter discover facts which are different from or in addition to those that they may now know or believe to be true with respect to any and all claims, counterclaims, cross-claims, demands, rights, liabilities and causes of action herein released and agree that all Unknown Claims are nonetheless released and that this Agreement shall be and remain effective in all respects even if such different or additional facts are subsequently discovered.

Section 6.16



Section 6.17 <u>Support Obligations</u>.

- (a) Buyer acknowledges that Affiliates of the Company (each a "Support Obligor") have provided certain Support Obligations (as identified on Schedule 4.13(b)).
- (b) Prior to the Closing Date, Buyer shall use Commercially Reasonable Efforts to procure the replacement of such Support Obligations with the beneficiaries thereof such that on or prior to the Closing Date such and Support Obligations are released.
- (c) If Buyer cannot effect such release prior to Closing (each such Support Obligation, until such time as such Support Obligation is released in accordance with this Section 6.17, a "Continuing Support Obligation"), then Seller or its Affiliates shall keep in place such guaranty, letter of credit or other instrument as is necessary to maintain each Continuing Support Obligation; provided that as a condition to the continuing maintenance of the Continuing Support Obligation:
 - (i) Buyer shall deliver to Seller at the Closing in accordance with this Section 6.17 support in the form permitted under the applicable Contract or obligation, in an amount equal to the maximum amount of exposure under any Continuing Support Obligation (the "Continuing Support Instrument").
 - hold harmless Seller and its Affiliates (as applicable) from and against any and all Losses that may be suffered, incurred or sustained by any of them or to which any of them become subject, resulting from, arising out of or relating to any such Support Obligation being in effect on or after the Closing Date (including as a result of any draw or demand for or making of any payment by Seller or any such Affiliate of Seller under any Support Obligation) with respect to the full extent of such Support Obligation (the "Support Indemnity"). In furtherance, and not limitation, of the forgoing, if any claim is made against a Continuing Support Obligation, or if a Continuing Support Obligation is drawn upon, as applicable, after the Closing Date, upon receipt of written notice thereof from Seller, Buyer shall pay Seller the amount so claimed or drawn within five (5) Business Days after the date of such written notice. If Buyer fails to pay Seller or its designee during such five (5) Business Day period, Seller may draw upon or otherwise enforce the terms of the Continuing Support Instrument in accordance with the terms thereof.
 - (iii) From and after the Closing, Buyer shall continue to use Commercially Reasonable Efforts to procure the release of such Continuing Support Obligations.

- (iv) From and after the Closing, Buyer shall not, and shall cause the Company not to, effect any amendments or modifications or any other changes to the contracts or obligations to which any of the Continuing Support Obligations relate, or to otherwise take any action that would increase the liability of the Support Obligor under any Continuing Support Obligation or extend the stated maturity of any Continuing Support Obligation, without first notifying Seller in writing thereof and expressly agreeing that the Support Indemnity extends to such increased or extended liability.
- (d) Prior to Closing, Buyer shall have the right to contact and have discussions with each beneficiary of a Support Obligation in order to satisfy its obligations under this Section 6.17, provided that Buyer shall give Seller not less than five (5) Business Days' prior written notice before making any such contact. Seller shall have the right to have one of its Representatives present via telephone or in person, as applicable, during any such contact or discussion. Buyer shall only contact and hold discussions with such beneficiaries through Representatives of Buyer previously approved by Seller, and Buyer shall cause such Representatives to comply with all reasonable procedures and protocols regarding such contacts and discussions that may be established by Seller.

Section 6.18 <u>Wind Data</u>. Buyer shall cause the Company to provide to Seller, and Seller shall agree to receive, Wind Data prepared prior to the Closing Date by executing a wind data license agreement in the form attached as <u>Exhibit C</u>.

ARTICLE VII

INDEMNIFICATION, LIMITATIONS OF LIABILITY AND WAIVERS

- Section 7.1 <u>Survival</u>. All representations, warranties, covenants and obligations in this Agreement will survive the Closing until the date that is two (2) years after the Closing Date, except that (a) the Designated Representations, Section 6.15 (Release), Section 6.16 (Build Out Restriction), and Section 6.17 (Support Obligations) will each survive the Closing indefinitely, (b) Claims under Section 7.2(f) and Section 7.3(e) must be brought no later than sixty (60) days following the expiration of the applicable statute of limitations, and (c) Claims for breach of the covenants and agreements in this Agreement with respect to Taxes and Production Tax Credits must be brought no later than sixty (60) days following the expiration of the applicable statute of limitations with respect to such Taxes or Production Tax Credits.
- Section 7.2 <u>Indemnification by Seller</u>. Subject to Sections 7.1 and 7.4, from and after the Closing Date, Seller will indemnify Buyer and its Affiliates and Representatives (the "*Buyer Group*") from and against all Losses arising, directly or indirectly, from or in connection with:
 - (a) any breach of any representation or warranty of Seller made in the Company Assignment Agreement or <u>Article III</u> or <u>Article IV</u> of this Agreement;
 - (b) Claims brought against the Company by Persons who were the officers, members, directors or managers of the Company prior to the Closing and which Claims

arose from such Persons' role as officer, member, director or manager of the Project Company through the Closing;

- (c) any breach of any covenant, agreement or other obligation of Seller contained in this Agreement or the Company Assignment Agreement;
 - (d) the retention of the Excluded Liabilities by Seller;
- (e) Taxes of the Company, or for which the Company may be liable under a tax allocation or tax sharing agreement or tax indemnity or similar arrangement to the extent attributable to any Pre-Closing Tax Period; and
- (f) claims based on any gross negligence, Fraud or willful misconduct by Seller or its Affiliates in connection with this Agreement.
- Section 7.3 <u>Indemnification by Buyer</u>. Subject to Sections 7.1 and 7.4, from and after the Closing Date, Buyer will indemnify Seller and its Affiliates and Representatives (the "*Seller Group*") from and against all Losses arising, directly or indirectly, from or in connection with:
 - (a) any breach of any representation or warranty made in the Company Assignment Agreement or Article V of this Agreement;
 - (b) any breach of any covenant, agreement or other obligation of Buyer contained in this Agreement or the Company Assignment Agreement;
 - (c) any Transfer Taxes;
 - (d) Taxes of the Company to the extent attributable to any period (or portion thereof) that is not a Pre-Closing Tax Period; and
 - (e) claims based on any gross negligence, Fraud or willful misconduct by Buyer or its Affiliates in connection with this Agreement.
- Section 7.4 <u>Limitations on Liability</u>. Notwithstanding any contrary provision in this Agreement:
 - (a) <u>Time Bar on Claims</u>. No Indemnified Party will be entitled to any recovery (including by way of off-set) from any Indemnifying Party unless a Notice of Claim has been given on or before the expiration of time period for survival set forth in Section 7.1.
 - (b) <u>Insurance Recoveries</u>. Losses for which any Indemnified Party will be reimbursed hereunder will be decreased by insurance proceeds or payments from any other responsible parties actually received by such Indemnified Party (after deducting costs and expenses incurred in connection with recovery of such proceeds) and will be increased to take account of any net tax cost incurred by the Indemnified Party in the year any indemnification payment for such Losses was received (or an earlier year) arising

from the receipt of any such payment hereunder (grossed up for such increase) and will be decreased to take into account any net tax benefit realized by the Indemnified Party in the year the Losses were incurred or paid (or an earlier year) arising from the incurrence or payment of any such Losses.

- (c) Threshold. An Indemnified Party will be entitled to make a Claim for indemnification under Section 7.2(a) or Section 7.3(a), as applicable, for any and all Claims individually valued at or above ten thousand dollars (\$10,000) once the aggregate amount of all Claims by such Indemnified Party exceeds and such amount shall not act as a deductible (the "Threshold"); provided, that the Threshold will not apply to or otherwise be comprised of (i) any Losses relating to a breach by Seller of the Designated Representations of Seller and (ii) any Losses relating to a breach by Buyer of the Designated Representations of Buyer.
- (d) Tax Treatment. Any indemnity payment made pursuant to this Agreement will be treated as an adjustment to the Purchase Price for Tax purposes, unless (i) an audit or other administrative or judicial action with respect to the Indemnified Party causes any such payment not to constitute an adjustment to the Purchase Price for U.S. federal income Tax purposes, (ii) otherwise determined by agreement of the Parties hereto, or if there is no agreement, by an opinion of a nationally-recognized tax counsel selected by Buyer and reasonably acceptable to Seller that such amount is "more likely than not" includable as income of the recipient for income tax purposes, or (iii) otherwise required by Law. The amount of any indemnity payment not constituting an adjustment to the Purchase Price for U.S. federal income tax purposes in accordance with the immediately preceding sentence will be grossed up and paid on an after-tax basis (assuming the highest marginal federal, state and local income tax rates then applicable to corporations).
- Maximum Liability. Buyer and the other members of Buyer Group will not be entitled to recover from Seller for any Indemnity Claim under Section 7.2(a) of this Agreement any monetary amount in respect of Losses in excess of the Indemnity Cap in the aggregate for all such Indemnity Claims. Seller and the other members of Seller Group will not be entitled to recover from Buyer for any Indemnity Claim under Section 7.3(a) of this Agreement any monetary amount in respect of Losses in excess of the Indemnity Cap in the aggregate for all such Indemnity Claims. Notwithstanding the foregoing, (i) Claims with respect to a breach of a Designated Representation or a breach of the Support Indemnity, or claims based on Fraud or willful misconduct, and (ii) any payment of legal fees constituting Losses by the losing party in a dispute, shall not be subject to the Indemnity Cap; provided, however, that in no event shall Seller be required to indemnify Buyer or any other members of the Buyer Group for Losses hereunder in excess of the Purchase Price, except in the case of Section 6.15 (Release), Section 6.16 (Build Out Restriction), Section 7.2(d) (Excluded Liabilities), Section 7.2(e) (Indemnification for certain Taxes), and Section 7.2(f) (Claims based on Fraud).
- (f) <u>Qualifications</u>. Notwithstanding anything in this Agreement to the contrary, for purposes of the indemnification obligations under this <u>Article VII</u>, the representations and warranties contained in this Agreement will be considered without

regard to any "material," "Material Adverse Effect" or similar non-monetary qualifications (other than Knowledge qualifications) contained therein for purposes of determining the amount of any Losses.

Section 7.5 Procedures for Third Party Claims.

- (a) Promptly after receipt by an Indemnified Party of notice of the commencement of any Action by a third party (a "*Third Party Claim*") with respect to any matter for which indemnification is or may be owing pursuant to Section 7.2 or Section 7.3 hereof, the Indemnified Party will give notice thereof to the Indemnifying Party, provided, however, that the failure of the Indemnified Party to notify the Indemnifying Party will not relieve the Indemnifying Party of any of its obligations hereunder, except to the extent that the Indemnifying Party demonstrates that the defense of such Third Party Claim has been actually prejudiced by the Indemnified Party's failure to give such notice.
- If any Action referred to in Section 7.5(a) is brought against an (b) Indemnified Party or the Company and the Indemnified Party gives notice to the Indemnifying Party of the commencement of such Action, the Indemnifying Party will be entitled to participate in such Action, and (unless (i) the Indemnifying Party is also a party to such Action and the Indemnified Party determines in good faith that joint representation would be inappropriate upon the advice of outside counsel that a conflict of interest exists between the Indemnified Party and the Indemnifying Party with respect to such Action, or (ii) the Indemnifying Party fails to provide reasonable assurance to the Indemnified Party of its financial capacity to defend such Action and provide indemnification with respect to such Action) may assume the defense of such Action with counsel reasonably satisfactory to the Indemnified Party and, after notice from the Indemnifying Party to the Indemnified Party of its election to assume the defense of such Action, the Indemnifying Party will not, as long as it diligently conducts such defense, be liable to the Indemnified Party under this Section 7.5 for any fees of other counsel with respect to the defense of such Action, in each case subsequently incurred by the Indemnified Party in connection with the defense of such Action.
- (c) If the Indemnifying Party is entitled to and assumes the defense of an Action, no compromise or settlement of such Claims or Action may be effected by the Indemnifying Party without the Indemnified Party's written consent unless (i) there is no effect on or grounds for the basis of any other Claims that may be made against the Indemnified Party, (ii) the sole relief provided is monetary damages that are paid in full by the Indemnifying Party and/or performance that is performed in full by the Indemnifying Party, and (iii) the Indemnified Party will have no Liability with respect to any compromise or settlement of such Claims or Action. Notwithstanding the assumption by the Indemnifying Party of the defense of any Claim or Action, the Indemnified Party will be permitted to join in such defense and to employ counsel at its own expense. Subject to Section 7.5(d), notwithstanding anything to the contrary contained in this Agreement, the Indemnified Party shall not compromise or settle any Third Party Claim or agree to extend any applicable statute of limitations without the prior written approval of the Indemnifying Party.

- (d) Notwithstanding the foregoing, if there is a reasonable probability that an Action may result in the Indemnified Party or its Affiliates having to pay monetary Losses for which it would not be entitled to indemnification under this Agreement or having to perform specific performance, the Indemnified Party may, by notice to the Indemnifying Party, assume the exclusive right to defend, compromise or settle such Action, but the Indemnifying Party will not be bound by any compromise or settlement thereof effected without its written consent or any other result occurring after the Indemnifying Party reasonably requested a compromise or settlement that would have been fully performed by the Indemnifying Party but such request was rejected by the Indemnified Party.
- (e) The Indemnifying Party and the Indemnified Party agree to provide each other with reasonable access during regular business hours to the properties, books and records and Representatives of the other, as reasonably necessary in connection with the preparation for an existing or anticipated Action involving a Third Party Claim and its obligations with respect thereto pursuant to this <u>Article VII</u>.
- Section 7.6 <u>Indemnification Procedures</u>. The following procedures will apply to any Claim for indemnification by the Buyer Group or the Seller Group that does not involve a Third Party Claim:
 - (a) <u>Notice of Claim</u>. A Notice of Claim will be given as soon as practicable, but in no event later than sixty (60) days, after the Indemnified Party determines that it is or may be entitled to indemnification pursuant to this Agreement; provided, however, that failure to provide notice will not prejudice the Indemnified Party's right to indemnity, except to the extent the Indemnifying Party prejudiced by the Indemnified Party's failure to give such notice. Notice of Claim will be made as follows:
 - (i) in the case of any Indemnity Claim by any member of the Buyer Group, by Buyer to Seller at the address and in the manner provided in Section 8.1 (Notices). Buyer will be the Indemnified Party with respect to Indemnity Claims pursuant to Section 7.2, and (except as provided in Section 7.5) no liability in respect of any such Indemnity Claim will be contested, settled, admitted, litigated or otherwise dealt with by or on behalf of Buyer Group for this purpose by any Person other than Buyer or its designee; and
 - (ii) in the case of any Indemnity Claim by any member of the Seller Group against Buyer, by Seller to Buyer at the address and in the manner provided in Section 8.1 (Notices). Seller will be the Indemnified Party with respect to Indemnity Claims pursuant to Section 7.3, and (except as provided in Section 7.5) no liability in respect of any such Indemnity Claim will be contested, settled, admitted, litigated or otherwise dealt with by or on behalf of the Seller Group for this purpose by any Person other than Seller or its designee.
 - (b) <u>Dispute Notice</u>. If the Indemnifying Party disputes (i) its obligation to indemnify the Indemnified Party in respect of any Indemnity Claim set forth in a Notice of Claim, or (ii) the Indemnity Claim Amount set forth in a Notice of Claim, a dispute

notice ("*Dispute Notice*") will be given as soon as practicable, but in no event later than twenty (20) Business Days, after the Notice of Claim is given, as follows:

- (i) in the case of any Indemnity Claim by any member of Buyer Group against Seller, a Dispute Notice may be given only by Seller, and if given, will be sent by Seller to Buyer at the address and in the manner provided in Section 8.1 (Notices); and
- (ii) in the case of any Indemnity Claim by any member of the Seller Group against Buyer, a Dispute Notice may be given only by Buyer, and if given, will be sent by Buyer to Seller at the address and in the manner provided in Section 8.1 (Notices).
 - (A) If no Dispute Notice is given within such twenty (20) Business Days period, the validity of the claim for indemnification and the Indemnity Claim Amount, each as set forth in the Notice of Claim, will be deemed to be agreed, effective on the first (1st) day following such twenty (20) Business Days period, and the Indemnity Claim Amount set forth in the Notice of Claim will immediately be an Indemnity Amount Payable by the relevant Indemnifying Party.
 - (B) If a Dispute Notice is given within such twenty (20) Business Days period, then:
 - (1) The portion, if any, of the Indemnity Claim Amount which is not disputed in the Dispute Notice will immediately be an Indemnity Amount Payable by the relevant Indemnifying Party.
 - (2) Buyer and Seller will negotiate in good faith to settle the dispute, and the portion, if any, of the Indemnity Claim Amount which Buyer and Seller agree in writing is payable will immediately be an Indemnity Amount Payable by the relevant Indemnifying Party.
 - (3) If Buyer and Seller are unable to resolve any portion of the Indemnity Claim Amount within two (2) months following the date the Dispute Notice is given, either Buyer or Seller may initiate proceedings specified in Section 8.12 (Governing Law; Venue; and Jurisdiction) of this Agreement to obtain resolution of the dispute.
 - (4) If neither Buyer nor Seller initiates legal proceedings in respect of the dispute within twelve (12) months following the date the Dispute Notice is given, the portion of the Indemnity Claim Amount which is disputed will not be an Indemnity Amount Payable, and the Indemnified Party will have no further right, under this Agreement, to seek to recover such amount from the Indemnifying Party.
 - (5) If Buyer or Seller initiates legal proceedings within the twelve (12) month period specified in Section 7.6(b)(ii)(B)(4), the

amount, if any, determined in a Final Order as payable by the Indemnifying Party will be an Indemnity Amount Payable by the relevant Indemnifying Party as of the date of such Final Order.

Section 7.7 Payments of Indemnity Amounts Payable by Buyer. Subject to the limitations in Section 7.4, Buyer will pay to each relevant Indemnified Party any Indemnity Amount Payable by Buyer, by wire transfer of immediately available funds (or as otherwise directed pursuant to any Final Order or as otherwise agreed by the Indemnified Party and the Indemnifying Party) to an account designated by Seller, promptly and in no event later than five (5) Business Days after such Indemnity Amount Payable is established in accordance with this Agreement.

Section 7.8 Payments of Indemnity Amounts Payable by Seller. Subject to the limitations in Section 7.4, any Indemnity Amount Payable by Seller to each relevant Indemnified Party will be paid by wire transfer of immediately available funds (or as otherwise directed pursuant to any Final Order or as otherwise agreed by the Indemnified Party and the Indemnifying Party) to an account designated by Buyer, promptly and in no event later than five (5) Business Days after such Indemnity Amount Payable is established in accordance with this Agreement.

Section 7.9 Mitigation; Exclusive Remedy.

- (a) Each Party shall use Commercially Reasonable Efforts to mitigate all Losses incurred relating to any breach of this Agreement by the other Party hereto, including availing itself of any commercially reasonable defenses, limitations, rights of contribution, claims against third parties and other rights at law or in equity.
- Subject to Section 8.12(c)(ii) and Section 8.14, (i) the indemnification obligations of the Parties contained in this Agreement shall, if the Closing occurs, be the sole and exclusive remedy of the Parties hereto and their Affiliates and Representatives, successors and assigns with respect to any and all claims for Losses sustained or incurred arising out of or relating to any breach of representation, warranty, covenant or agreement contained in this Agreement, and (ii) prior to the Closing, except as expressly limited herein, the Parties may pursue any remedy or relief available under applicable Law; provided, that any such Claim shall be expressly limited by the provisions of this Agreement, including Section 7.4. Subject to Section 8.14, from and after the Closing, each Party hereby expressly waives and disclaims, and agrees that it shall not assert, any right, remedy (including the remedy of rescission) or claim in respect of any such breach or Loss based on any cause or form of action whatsoever, except as and to the extent permitted in this Article VII. This provision shall not limit any available remedy of the Party seeking indemnification for any Losses pursuant to Section 7.2(f) or Section 7.3(e). Nothing in this Section 7.9 is intended to constitute a waiver or limitation of any rights that either Party (or their respective Affiliates) may have to assert claims against third parties, including contractors performing any work in connection with the Project.

ARTICLE VIII

MISCELLANEOUS

Section 8.1 Notices.

(a) Unless this Agreement specifically requires otherwise, any notice, demand or request provided for in this Agreement, or served, given or made in connection with it, will be in writing and will be deemed properly served, given or made if delivered in person or sent by facsimile or email (in the case of delivery by facsimile or email, solely if receipt is confirmed) or sent by registered or certified mail, postage prepaid, or by a nationally recognized overnight courier service that provides a receipt of delivery, in each case, to the Parties at the addresses specified below:

If to Buyer, to:

Southwestern Public Service Company 414 Nicollet Mall, 401-04 Minneapolis, MN 55401-1927

Attention: George E. Tyson II, Senior Vice President, Corporate Development

Telephone: (612) 215-4627 Facsimile: (612) 215-4575

Email: george.tyson@xcelenergy.com

With a copy to:

Southwestern Public Service Company 414 Nicollet Mall, 401-09 Minneapolis, MN 55401-1927

Attention: Scott Wilensky, Executive Vice President and General Counsel

Telephone: (612) 330-5942 Facsimile: (612) 215-9025

Email: scott.wilensky@xcelenergy.com

And a copy to (which shall not constitute notice):

Orrick, Herrington & Sutcliffe LLP Suite 4100 1301 McKinney Street Houston, TX 77010 Attention: Dahl Thompson

Telephone: (713) 658-6611 Facsimile: (713) 658-6401

Email: Dahl.thompson@Orrick.com

If to Seller, to:

ESI Energy, LLC 700 Universe Boulevard Juno Beach, FL 33408

Attention: Vice President, Wind Development

Telephone: (561) 691-7232 Facsimile: 561) 691-7305

Email: john_didonato@NEE.com

with a copy to:

For notices to Seller <u>not</u> relating to Section 2.7(d) to: ESI Energy, LLC 700 Universe Boulevard Juno Beach, FL 33408 Attention: Vice President and General Counsel

Telephone: (561) 304-7126 Facsimile: (561) 691-7305 Email: Mitch.Ross@NEE.com

For notices to Seller relating to Section 2.7(d) to: 700 Universe Boulevard

Juno Beach, FL 33408 Telephone: (561) 304-5452 Attention: Dru Roscoe, Esq. Email: Dru.roscoe@nee.com

(b) Notices given by personal delivery, mail or overnight courier pursuant to this Section 8.1 will be effective upon physical receipt. Notices given by facsimile or email pursuant to this Section 8.1 will be effective as of the date of confirmed delivery if delivered before 5:00 p.m., central time, on any Business Day or the next succeeding Business Day if confirmed delivery is after 5:00 p.m., central time, on any Business Day or during any non-Business Day.

Section 8.2 <u>Entire Agreement</u>. Except for the Confidentiality Agreement, this Agreement and the Company Assignment Agreement supersede all prior discussions and agreements between the Parties with respect to the subject matter hereof, and this Agreement, the Company Assignment Agreement, and the Confidentiality Agreement contain the sole and entire agreement between the Parties hereto with respect to the subject matter hereof. The Parties hereto have voluntarily agreed to define their rights, liabilities and obligations with respect to the subject matter hereof exclusively in contract pursuant to the express terms and provisions of this Agreement, the Company Assignment Agreement, and the Confidentiality Agreement; and the Parties hereto expressly disclaim that they are owed any duties or are entitled to any remedies not expressly set forth in this Agreement. Furthermore, the Parties each hereby acknowledge that this

Agreement embodies the justifiable expectations of sophisticated parties derived from arm's-length negotiations. All Parties specifically acknowledge that no Party has any special relationship with another Party that would justify any expectation beyond that of an ordinary buyer and an ordinary seller in an arm's-length transaction. Subject to Article VII, the sole and exclusive remedies for any breach of the terms and provisions of this Agreement (including any representations and warranties set forth herein, made in connection herewith or as an inducement to enter into this Agreement) or any claim or cause of action otherwise arising out of or related to the subject matter hereof will be those remedies available at law or in equity for breach of contract only (as such contractual remedies have been further limited or excluded pursuant to the express terms of this Agreement); and the Parties hereby agree that neither Party hereto will have any remedies or causes of Action (whether in contract or in tort) for any statements, communications, disclosures, failures to disclose, representations or warranties not set forth in this Agreement, absent Fraud.

Section 8.3 <u>Expenses</u>. Except as otherwise expressly provided in this Agreement, whether or not the transactions contemplated hereby are consummated, each Party will pay its own costs and expenses incurred in anticipation of, relating to and in connection with the negotiation and execution of this Agreement and the transactions contemplated hereby, including all expenses and costs incurred to obtain approvals required by such Party from Governmental Authorities.

Section 8.4 <u>Disclosure</u>. Seller may, at its option, include in the Schedules items that are not material in order to avoid any misunderstanding, and any such inclusion, or any references to dollar amounts, will not be deemed to be an acknowledgment or representation that such items are material, to establish any standard of materiality or to define further the meaning of such terms for purposes of this Agreement. Information disclosed in any Schedule will constitute a disclosure for purposes of all other Schedules notwithstanding the lack of specific cross-reference thereto, but only to the extent the applicability of such disclosure to such other Schedule is readily apparent. In no event will the inclusion of any matter in the Schedules be deemed or interpreted to broaden Seller's representations, warranties, covenants or agreements contained in this Agreement. The mere inclusion of an item in the Schedules will not be deemed an admission by Seller that such item represents a material exception or fact, event, or circumstance or that such item is reasonably likely to result in a Material Adverse Effect. Subject to Section 6.14, each Party will promptly notify the other Party upon becoming aware of (a) the occurrence, or failure to occur, of any event, which occurrence or failure has caused any representation or warranty of such Party contained in this Agreement or in any exhibit, Schedule, certificate, document or written instrument attached hereto to be untrue or inaccurate in any material respect, (b) any material failure of such Party to comply with, perform or satisfy, in any respect, any covenant, condition or agreement to be complied with, performed by or satisfied by it under this Agreement or any exhibit, Schedule, certificate, document or written instrument attached hereto, and (c) any notice or other communication from any Governmental Authority in connection with this Agreement, the Company Assignment Agreement or the transactions contemplated herein and therein; provided, that, subject to Section 6.14, such disclosure will not be deemed to cure, or to relieve any Party of any liability or obligation with respect to, any breach of or failure to satisfy any representation, warranty, covenant or agreement or any condition hereunder, and will not affect any Party's right with respect to indemnification hereunder. In the event of a conflict between a provision in this Agreement and a Schedule, the provision in this Agreement will govern.

Section 8.5 <u>Waiver</u>. Any term or condition of this Agreement may be waived at any time by the Party that is entitled to the benefit thereof, but no such waiver will be effective unless set forth in a written instrument duly executed by or on behalf of the Party waiving such term or condition. No waiver by any Party of any term or condition of this Agreement, in any one or more instances, will be deemed to be or construed as a waiver of the same or any other term or condition of this Agreement on any future occasion. All remedies, either under this Agreement or by Law or otherwise afforded, will be cumulative and not alternative.

Section 8.6 <u>Amendment</u>. This Agreement may be amended, supplemented or modified only by a written instrument duly executed by or on behalf of each Party.

Section 8.7 No Third Party Beneficiary. Except for the provisions of Section 6.16, Section 7.2 and Section 7.3 (which are intended for the benefit of the Persons identified therein), the terms and provisions of this Agreement are intended solely for the benefit of the Parties and their respective successors or permitted assigns, and it is not the intention of the Parties to confer third-party beneficiary rights upon any other Person. For the avoidance of doubt, no Person who is not a Party to this Agreement, may challenge any termination of this Agreement, for any reason, or enforce or seek to enforce any provisions of this Agreement (except as set forth in the first sentence of this Section 8.7).

Section 8.8 <u>Assignment; Binding Effect</u>. Buyer may assign its rights under this Agreement to any Affiliate or to Buyer's lenders for collateral security purposes, but such assignment will not release Buyer from its obligations hereunder. Except as provided in the preceding sentence, neither this Agreement nor any right, interest or obligation hereunder may be assigned by any Party without the prior written consent of the other Party. For the avoidance of doubt, no merger or consolidation of the Company with or into Buyer or any Affiliate of Buyer, or any other assignment by operation of Law, shall constitute a breach of this Agreement.

Section 8.9 <u>Headings</u>. The headings used in this Agreement have been inserted for convenience of reference only and do not define or limit the provisions hereof.

Section 8.10 <u>Invalid Provisions</u>. If any provision of this Agreement is held to be illegal, invalid or unenforceable under any present or future Law, and if the rights or obligations of any Party under this Agreement will not be materially and adversely affected thereby, such provision will be fully severable, this Agreement will be construed and enforced as if such illegal, invalid or unenforceable provision had never comprised a part hereof, the remaining provisions of this Agreement will remain in full force and effect and will not be affected by the illegal, invalid or unenforceable provision or by its severance herefrom and in lieu of such illegal, invalid or unenforceable provision, there will be added automatically as a part of this Agreement a legal, valid and enforceable provision as similar in terms to such illegal, invalid or unenforceable provision as may be possible.

Section 8.11 <u>Counterparts; Facsimile</u>. This Agreement may be executed in any number of counterparts, each of which will be deemed an original, but all of which together will

constitute one and the same instrument. Any facsimile or portable document format (.pdf) copies hereof or signature hereon will, for all purposes, be deemed originals.

Section 8.12 <u>Governing Law; Venue; and Jurisdiction</u>.

- (a) This Agreement, and all Claims or causes of Action (whether in contract or tort) that may be based upon, arise out of or relate to this Agreement, or the negotiation, execution or performance of this Agreement (including any Claim or cause of Action based upon, arising out of or related to any representation or warranty made in or in connection with this Agreement or as an inducement to enter into this Agreement), will be governed by the Laws of the State of New York without giving effect to any conflict or choice of law provision.
- The Parties hereby irrevocably submit to the exclusive (b) jurisdiction of the federal court in the Southern District of New York for purposes of any suit, Action or other proceeding arising out of this Agreement or any transaction contemplated hereby and each Party hereby consents to the jurisdiction of such court (and of the appropriate appellate courts therefrom) in any such suit, Action or proceeding and irrevocably waives, to the fullest extent permitted by Law, any objection that it may now or hereafter have to the laying of the venue of any such suit, Action or proceeding in any such court or that any such suit, Action or proceeding that is brought in any such court has been brought in an inconvenient forum. During the period a legal dispute filed in accordance with this Section 8.12 is pending before a court, all Actions, suits or proceedings with respect to such legal dispute or any other legal dispute, including any counterclaim, cross-claim or interpleader, will be subject to the exclusive jurisdiction of such court. Each Party hereby waives, and will not assert as a defense in any legal dispute, that (i) such Party is not subject thereto, (ii) such Action, suit or proceeding may not be brought or is not maintainable in such court, (iii) such Party's property is exempt or immune from execution, (iv) such Action, suit or proceeding is brought in an inconvenient forum, or (v) the venue of such Action, suit or proceeding is improper. A final judgment in any Action, suit or proceeding described in this Section 8.12 following the expiration of any period permitted for appeal and subject to any stay during appeal will be conclusive and may be enforced in other jurisdictions by suit on the judgment or in any other manner provided by applicable Laws.
- (b) The Parties hereby knowingly, voluntarily, intentionally and irrevocably (i) waive, to the maximum extent not prohibited by Law, any right they may have to a trial by a jury in respect of any litigation based hereon, or directly or indirectly at any time arising out of, under or in connection with this Agreement or any transaction contemplated hereby or associated herewith, (ii) waive, to the maximum extent not prohibited by Law, any right they may have to claim or recover in any such litigation or arbitration any "Special Damages", as defined below, and (iii) acknowledge

that they have been induced to enter into this Agreement and the transactions contemplated hereby by, among other things, the mutual waivers and certifications contained in this Section 8.12, in each case it being the express intent, understanding, and agreement of the Parties that such waivers are to be given the fullest effect, notwithstanding the negligence (whether sole, joint or concurrent), strict liability or other legal fault of any Party. As used in this herein, "Special Damages" means all special, consequential, exemplary or punitive damages (regardless of how named), but does not include any payments or funds which any Party has expressly promised to pay or deliver to any other Party or any Claims of any third party for which one Party has agreed to indemnify the other Party under this Agreement and provided that the loss, disallowance or inability to claim or monetize Production Tax Credits under Section 45 of the Code will not be deemed Special Damages.

Section 8.13 Waiver of Remedies; Legal Fees.

All Claims, obligations, Liabilities, or causes of Action (whether in contract or in tort, in law or in equity, or granted by statute) that may be based upon, in respect of, arise under, out or by reason of, be connected with, or relate in any manner to this Agreement, or the negotiation, execution, or performance of this Agreement (including any representation or warranty made in, in connection with, or as an inducement to, this Agreement), may be made only against (and are those solely of) Seller and Buyer ("Contracting Parties"). No Person who is not a Contracting Party, including without limitation any director, officer, employee, incorporator, member, partner, manager, stockholder, Affiliate, agent, attorney, or Representative of, and any financial advisor or lender to, any Contracting Party, or any director, officer, employee, incorporator, member, partner, manager, stockholder, Affiliate, agent, attorney, or Representative of, and any financial advisor or lender to, any of the foregoing ("Nonparty Affiliates"), will have any Liability (whether in contract or in tort, in law or in equity, or granted by statute) for any Claims, causes of Action, obligations, or Liabilities arising under, out of, in connection with, or related in any manner to this Agreement or based on, in respect of, or by reason of this Agreement or its negotiation, execution, performance, or breach; and, to the maximum extent permitted by law, each Contracting Party hereby waives and releases all such liabilities, claims, causes of action, and obligations against any such Nonparty Affiliates. Without limiting the foregoing, to the maximum extent permitted by Law, (i) each Contracting Party hereby waives and releases any and all rights, Claims, demands, or causes of Action that may otherwise be available at law or in equity, or granted by statute, to avoid or disregard the entity form of a Contracting Party or otherwise impose Liability of a Contracting Party on any Nonparty Affiliate, whether granted by statute or based on theories of equity, agency, control, instrumentality, alter ego, domination, sham, single business enterprise, piercing the veil, unfairness, undercapitalization, or otherwise, and (ii) each Contracting Party disclaims any reliance upon any Nonparty Affiliates with respect to the performance of this Agreement or any representation or warranty made in, in connection with, or as an inducement to this Agreement.

(o) Without duplication of any Losses covered pursuant to Section 7.2 or Section 7.3, if a court of competent jurisdiction determines that either Party has breached this Agreement, such breaching Party will reimburse the non-breaching Party for its costs and expenses (including reasonable legal fees and expenses) incurred in connection with such litigation.

Section 8.14 Specific Performance. The Parties acknowledge and agree that irreparable damage would occur in the event that any of the provisions of this Agreement were not performed in accordance with their specific terms or were otherwise breached. It is accordingly agreed that the Parties shall be entitled to seek an injunction or injunctions to prevent breaches or threatened breaches of this Agreement and to specifically enforce the terms and provisions of this Agreement and any other agreement or instrument executed in connection herewith or contemplated hereby, and the Parties agree that specific performance is the remedy intended by the parties for any such breaches or threatened breaches. The Parties further agree that (a) by seeking the remedies provided for in this Section 8.14, a Party shall not in any respect waive its right to seek any other form of relief that may be available to a Party under this Agreement, including monetary damages and (b) the commencement of any Action pursuant to this Section 8.14 or anything contained in this Section 8.14 shall not restrict or limit any other remedies under this Agreement that may be available then or thereafter.

Section 8.15 Reinstatement. If and to the extent that for any reason any payment made pursuant to this Agreement is rescinded or otherwise restored to the Party that originally made such payment or any other Person, whether as a result of any proceedings in bankruptcy or reorganization or otherwise or as a result of any settlement or compromise, the obligations of such Party hereunder shall automatically be reinstated, and such Party shall reimburse the other Party on demand all of its reasonable costs and expenses (including reasonable fees of counsel) incurred in connection with such rescission or restoration.

Section 8.16 <u>Set Off.</u> Buyer and Seller shall have the right to set-off against, and/or recover from, amounts otherwise due and payable by Buyer to Seller, by Seller to Buyer, or any successor or permitted assignee of Seller or Buyer, as the case may be, in each case pursuant to the provisions of this Agreement.

Section 8.17 Confidentiality.

- (a) Pre-Closing Confidential Information. The terms of the Confidentiality Agreement are hereby incorporated by reference and shall continue in full force unless and until the Closing (if any), in which case the Confidentiality Agreement shall be deemed replaced in its entirety by the applicable provisions of this Section 8.17 (and related provisions of this Agreement). Any termination of this Agreement prior to the Closing shall not affect the continuing effectiveness of the Confidentiality Agreement. For the avoidance of doubt, the Confidentiality Agreement shall cover any and all information provided or otherwise made available to, or collected by, Buyer in accordance with Section 6.8.
- (b) Seller Confidential Information. Buyer acknowledges that Seller Confidential Information (defined below) is valuable and proprietary to Seller and Buyer

agrees, from and after the Closing until the date that is five (5) years after such Closing, not to, directly or indirectly, use (to the material detriment to Seller or its Affiliates), publish, disseminate, describe or otherwise disclose any Seller Confidential Information to any Person (other than (x) Buyer's or its Affiliate's Representatives, or (y) Persons who provide financial analysis, financial ratings, banking, legal, accounting or other services to Buyer or its Affiliates, provided such Person has agreed not to disclose such information pursuant to an agreement with Buyer or its Affiliates or such Person has an obligation of confidentiality to Buyer or its Affiliates in each case at least as restrictive as the confidentiality terms herein, subject in each case to the disclosing Party hereby agreeing to be responsible for any breach of this Section 8.17(b) by such Representatives or such other Persons as if they were considered a Party for purposes hereof) without the prior written consent of Seller; provided Buyer may use or disclose Transactional Information in a manner which does not associate such Transactional Information with, or identify, Seller or its Affiliates. Information shall not be deemed to be Seller Confidential Information if (i) it is or has become generally known or available within the industry or the public though no act or omission of Buyer; (ii) Buyer can demonstrate that, prior to disclosure in connection with the transactions contemplated hereby, such information was already in the possession of Buyer; (iii) it was rightfully received by Buyer from a third party who became aware of it through no act or omission of Buyer and who is not known to Buyer to be under an obligation of confidentiality to Seller; or (iv) Buyer can demonstrate it was independently developed by employees or consultants of Buyer. "Seller Confidential Information" means (x) the terms and conditions of this Agreement ("Transactional Information") and (y) commercial, financial, and other business information of the Seller and its Affiliates provided by or on behalf of Seller to Buyer or its Affiliates (or their Representatives), including any and all information provided by or on behalf of Seller to Buyer or its Affiliates (or their Representatives) relating to the operation of Seller's or any of its Affiliate's businesses except, in the case of this clause (y), to the extent such information relates solely to the Company, the Project, the Purchased Assets or the Business.

Buyer Confidential Information. (c) Seller acknowledges that Buyer Confidential Information (defined below) is valuable and proprietary to Buyer and Seller agrees, from and after the Closing until the date that is five (5) years after such Closing, not to, directly or indirectly, use (to the material detriment to Buyer or its Affiliates, including the Acquired Companies), publish, disseminate, describe or otherwise disclose any Buyer Confidential Information to any Person (other than (x) Seller's or its Affiliate's Representatives, or (y) Persons who provide financial analysis, financial ratings, banking, legal, accounting or other services to Seller or Seller's Affiliates, provided such Person has agreed not to disclose such information pursuant to an agreement with Seller or Seller's Affiliates or such Person has an obligation of confidentiality to Seller or Seller's Affiliates in each case at least as restrictive as the confidentiality terms herein, subject in each case to the disclosing Party hereby agreeing to be responsible for any breach of this Section 8.17(c) by such Representatives or such other Persons as if they were considered a Party for purposes hereof) without the prior written consent of Buyer. Information shall not be deemed to be Buyer Confidential Information if (i) it is or has become generally known or available within the industry or the public though no act or omission of Seller, (ii) it was rightfully received by Seller from a third party who became aware of it through no act or omission of Seller and who is not known to Seller to be under an obligation of confidentiality to Buyer, or (iii) Seller can demonstrate it was independently developed by employees or consultants of Seller. "Buyer Confidential Information" means (x) Transactional Information; (y) commercial, financial, and other business information of the Buyer and its Affiliates provided by or on behalf of Buyer to Seller or its Affiliates (or their Representatives), including any and all information provided by or on behalf of Buyer or Seller or its Affiliates (or their Representatives) relating to the operation of Buyer's or any of its Affiliate's businesses and (z) any and all information relating to the Company, the Purchased Assets or the Business (except to the extent it is also information under clause (y) of the definition of Seller Confidential Information).

(d) *Permitted Use.* Notwithstanding anything to the contrary in this Agreement, from and after the Effective Date, the provisions of Section 8.17(b) and Section 8.17(c) shall not prohibit the disclosure of Seller Confidential Information or Buyer Confidential Information by Buyer or Seller, as applicable, to the extent reasonably required (i) to prepare or complete any required Tax returns or financial statements, (ii) in connection with audits or other proceedings by or on behalf of a Governmental Authority (including disclosure by Buyer of Seller Confidential Information to the extent reasonably required to obtain Buyer's Regulatory Approval), (iii) to comply with a Governmental Authority or applicable Law or the rules of any recognized national stock exchange, (iv) to provide services to Buyer or its Affiliates, pursuant to this Agreement or any of the other agreements entered into pursuant hereto, (v) in connection with asserting any rights or remedies or performing any obligations under this Agreement or any other agreements entered into pursuant hereto, or (vi) in connection with the transactions contemplated by this Agreement or as expressly permitted in this Agreement.

(e) Limitations on Confidential Information.

- (i) Notwithstanding Section 8.17(b) and Section 8.17(c), from and after the Effective Date, Seller Confidential Information and Buyer Confidential Information may be disclosed if required by any Governmental Authority or otherwise by Law or the rules of any recognized national stock exchange; provided, however, that: (i) such Seller Confidential Information and Buyer Confidential Information is submitted under any and all applicable provisions for confidential treatment, and (ii) if the disclosing Party is permitted to do so, the other Party is given written notice of the requirement for disclosure promptly after such disclosure is requested, so that it may take whatever action it deems appropriate, including intervention in any proceeding and seeking a protective order or an injunction, to prohibit such disclosure. If Seller Confidential Information or Buyer Confidential Information is disclosed under the provisions of this Section 8.17(e)(i), to the extent the disclosing Party is permitted by Law to do so, the disclosing Party shall notify the other Party of the same in writing not later than five (5) Business Days following the disclosure.
- (ii) This Agreement shall not be construed as a license or authorization to either Party to utilize Seller Confidential Information or Buyer Confidential

Information, as applicable, except as permitted in accordance with Section 8.17(b),8.17(c), or 8.17(d), as applicable.

- From and after the Closing, upon a Party's request, except as (iii) advised by counsel that such actions would result in a violation of Law or would violate the receiving Party's demonstrable internal document retention policies aimed at legal, corporate governance or regulatory compliance, the other Party shall return or destroy as promptly as practicable, but in a period not to exceed twenty (20) Business Days, (i) all Seller Confidential Information or Buyer Confidential Information (as applicable) provided to such Party, as appropriate, including all copies of such Seller Confidential Information, or Buyer Confidential Information (as applicable) and (ii) all notes or other documents in digital or other format in their possession or in the possession of other persons to whom Seller Confidential Information or Buyer Confidential Information (as applicable) was properly provided by such Party; provided the foregoing does not apply to Transactional Information. Non-destruction of electronic copies of materials or summaries containing or reflecting Seller Confidential Information or Buyer Confidential Information (as applicable) that are automatically generated through data backup or archiving systems and which are not readily accessible by a Party's business personnel shall not be deemed to violate this Agreement, so long as Seller Confidential Information or Buyer Confidential Information (as applicable) contained in or reflected in such electronic backup records is not disclosed or used in violation of the other terms of this Agreement.
- (iv) The obligations of the parties under Section 8.17(b) and Section 8.17(c) shall not apply to the tax treatment or tax structure of the transactions contemplated by this Agreement and each Party (and its Representatives and its Affiliates and their Representatives) may disclose to any and all Persons, without limitation of any kind, the tax treatment and tax structure of the of the transactions contemplated by this Agreement and all other materials of any kind (including opinions or other tax analysis) that are provided to a Party relating to such tax treatment and tax structure (all such information that may be disclosed being the "Tax Information"). However, any such Tax Information is required to be kept confidential to the extent necessary to comply with any applicable securities laws. The preceding sentences are intended to cause the transactions contemplated by this Agreement not to be treated as having been offered under conditions of confidentiality for purposes of Sections 1.6011-4(b)(3) and 301.6111-2(a)(2)(ii) (or any successor provision) of the Treasury Regulations issued under the Code and shall be construed in a manner consistent with such purpose. For purposes of this provision, the Tax Information includes only those facts that may be relevant to understanding the purported or claimed United States federal income tax treatment or tax structure of the transactions contemplated by this Agreement and, to eliminate any doubt, therefore specifically does not include information that either reveals or standing alone or in the aggregate with other information so disclosed tends of itself to reveal or allow the recipient of the information to ascertain the identity of Seller or Buyer, or any third parties involved in any of the transactions contemplated by this Agreement or any other potential transactions with any of the foregoing.

[Signature pages follow]

IN WITNESS WHEREOF, this Agreement has been duly executed and delivered by the duly authorized officer of each Party as of the date first above written.

SELLER:

ESI ENERGY, LLC,

a Delaware limited liability company

Name: Michael O'Sullivan
Title: Senior Vice President

IN WITNESS WHEREOF, this Agreement has been duly executed and delivered by the duly authorized officer of each Party as of the date first above written.

BUYER:

SOUTHWESTERN PUBLIC SERVICE COMPANY, a New Mexico corporation

Name: David T. Hudson

Title: President

EXHIBIT A

Form of Company Assignment Agreement

ASSIGNMENT AND ASSUMPTION OF MEMBERSHIP INTERESTS

This ASSIGNMENT AND ASSUMPTION OF MEMBERSHIP INTERESTS (this "Assignment"), is made and entered on [●] (the "Effective Date"), by and between ESI Energy, LLC, a Delaware limited liability company ("Assignor"), and Southwestern Public Service Company, a New Mexico corporation ("Assignee").

RECITALS

- A. Assignor owns 100% of the membership interest (the "*Membership Interest*") in Hale Petersburg Wind, LLC, a Delaware limited liability company (the "*Company*"); and
- B. Assignee and Assignor entered into a Purchase and Sale Agreement, dated March 6, 2017 (the "*Purchase Agreement*"), pursuant to which, among other things, Assignor has agreed to transfer to Assignee the Membership Interest; and
- C. As of the Effective Date, Assignee desires to be admitted as the sole member of the Company and to become the only party to the Limited Liability Company Agreement of the Company (the "*LLC Agreement*"); and
- D. To effect the sale and purchase of the Membership Interest, Assignor and Assignee are executing and delivering this Assignment.

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignor and Assignee hereby agree as follows:

AGREEMENTS

- 1. <u>Transfer of Interests</u>. Assignor hereby sells, assigns, transfers and delivers unto Assignee (a) all of Assignor's right, title and interest in and to the Membership Interest and (b) all of Assignor's rights under the LLC Agreement and Assignee hereby accepts the same from Assignor as of the Effective Date. Assignor intends to transfer and assign all of its rights and benefits as the sole member of the Company, subject to all of the obligations and burdens with respect to the Membership Interest from and after the Effective Date.
- 2. <u>Assumption of Assignee</u>. Assignee hereby accepts the sale, assignment, and transfer and delivery of the Membership Interest, and assumes (a) the Membership Interest and (b) all obligations and liabilities of the Assignor under the LLC Agreement and agrees to become a party to and to be bound by the terms and conditions of the LLC Agreement to the same extent as if it were an original party thereto. On the Effective Date, in accordance with the LLC Agreement, Assignor ceased to be the sole member of the Company. From and after the

Effective Date of this Assignment, the Assignee shall be the sole member of the Company and the only party to the LLC Agreement.

- 3. <u>Counterparts</u>. This Assignment may be executed in separate counterparts with separate signature pages, all of which when taken together shall constitute one instrument. Delivery by facsimile or other electronic transmission of an executed original or the retransmission of any executed facsimile or other electronic transmission shall be deemed to be the same as delivery of an executed original.
- 4. <u>Further Assurances</u>. The parties hereto agree to take all such further actions and execute, acknowledge and deliver all such further documents, instruments or agreements as may be reasonably necessary to further effectuate the assignment and transfer of the Membership Interest.
- 5. <u>Governing Law.</u> This Assignment shall be governed by and construed in accordance with the laws of the State of New York, without giving effect to any conflict or choice of law provision that would result in the application of another state's law.
- 6. <u>Successors and Assigns</u>. This Assignment shall be binding upon and inure to the benefit of Assignor and Assignee and their respective successors and permitted assigns.
- 7. <u>Conflicts</u>. This Assignment is not intended to, and does not, amend or modify the Purchase Agreement in any respect, and if there is any conflict between this Assignment and the Purchase Agreement, the Purchase Agreement shall control.

[SIGNATURE PAGE FOLLOWS]

Attachment RH-5 Page 85 of 216 Case No. 17-00044-UT

IN WITNESS WHEREOF, Assignor and Assignee have caused this Assignment and Assumption of Membership Interest to be duly executed as of the day and year first above written.

Assignee:	Assignor:
Southwestern Public Service Company, a New Mexico corporation	ESI Energy, LLC, a Delaware limited liability company
Ву:	By:
Name:	Name:
Its:	Its:

EXHIBIT B-1

Form of Secretary's Certificate

ESI Energy, LLC

SECRETARY'S CERTIFICATE

This certificate is delivered pursuant to Section 2.7(b)(iii) of the Purchase and Sale Agreement dated March 6, 2017 (the "Agreement"), between ESI Energy, LLC, a Delaware limited liability company ("ESI Energy"), and Southwestern Public Service Company, a New Mexico corporation. Capitalized terms used but not otherwise defined herein will have the meanings given to them in the Agreement.

The undersigned, [______], Secretary of ESI Energy hereby certifies that:

1. Attached hereto as <u>Exhibit A</u> is a true and correct copy of the Certificate of Formation of the ESI Energy, as amended to the date hereof;

2. Attached hereto as <u>Exhibit B</u> is a true and correct copy of the Limited Liability Company Agreement of ESI Energy, as in effect on the date hereof;

3. Attached hereto as <u>Exhibit C</u> are true and correct copies of resolutions (excluding exhibits, if any) duly adopted by written consent of the

Member of ESI Energy on ______. Such resolutions have not been amended, modified or rescinded and remain in full force and effect on the date

hereof.

Attachment RH-5 Page 87 of 216 Case No. 17-00044-UT

	IN WITNESS WHEREOF, I have hereunto signed my name on this day of
20	
	By:
	Secretary

EXHIBIT A

CERTIFICATE OF FORMATION

EXHIBIT B

LIMITED LIABILITY COMPANY AGREEMENT

EXHIBIT C

RESOLUTIONS

EXHIBIT B-2

Form of Incumbency Certificate

ESI ENERGY, LLC

CERTIFICATE AS TO SIGNATURE AND INCUMBENCY OF OFFICERS

The undersigned, [name], [Secretary][Assistant Secretary] of ESI Energy, LLC, a Delaware limited liability company (the "Company"), hereby certifies that each of the persons whose names, titles and signatures appear below is a duly appointed and acting officer of the Company and holds, on the date hereof, the office set forth opposite his or her name and the signature appearing opposite his or her name is a genuine facsimile of the signature of such officer:

Name	Title	Signature	
 IN WITNESS , 20	S WHEREOF, I have hereafter signed m	ny name this day of	
	[Name of Secretary/Assistant Sec	• -	

EXHIBIT C

Form of Wind Data License

WIND DATA LICENSE AGREEMENT [Met [__] /Met [__]]

This WIND DATA LICENSE AGREEMENT (this "License Agreement") is effective as of ______[__], 2017, by Hale Petersburg Wind, LLC, a Delaware limited liability company ("Licensor"), in favor of and for the benefit of Tower Associates, LLC, a Delaware limited liability company (together with its permitted successors and assigns, the "Licensee"; and together with Licensor, each a "Party" and collectively, the "Parties").

RECITALS

WHEREAS, Southwestern Public Service Company ("Buyer") and ESI Energy, LLC ("Seller") have entered into that certain Purchase and Sale Agreement, dated as of March 6, 2017 (the "Purchase Agreement"), pursuant to which, among other things, Seller has agreed to sell the Shares to Buyer;

WHEREAS, as of the Close under the Purchase Agreement the Company owns the certain historical wind speed data and other relevant wind characteristics identified on Exhibit A attached hereto (the "Wind Data"); and

WHEREAS, it is a closing deliverable under the Purchase Agreement that Buyer causes the Company to execute and deliver to Seller this License Agreement effective as of the Closing.

NOW, THEREFORE, in consideration of the mutual promises and obligations set forth below, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

- 1. Capitalized terms used herein which are not defined herein shall have the meanings ascribed to them in the Purchase Agreement. Effective on the date hereof, on and subject to the terms and conditions set forth herein, Licensor hereby grants to Licensee a perpetual, royalty-free non-exclusive license to use the Wind Data for use solely in the event that Seller shall Implement or cause to be Implemented, or permit any Other Seller Entity to Implement or cause to be Implemented a Subsequent Wind Farm, subject to and in accordance with the terms of the Purchase Agreement and any build-out agreement entered into pursuant to the requirements thereof.
- 2. The rights hereby granted are granted only to the extent that Licensor has the right and authority to grant such rights. The license to use the Wind Data hereunder may be assigned or sub-licensed by Licensee to its Affiliates (as such term is defined below), subject to Licensee's confidentiality obligations in Section 8 and the other terms and conditions of this License Agreement.

- 3. Licensee shall reproduce and include any confidentiality, copyright or other proprietary rights or disclaimer notices contained in the Wind Data on all full and partial copies of the Wind Data.
- 4. The Wind Data is supplied "as is" without any warranty as to their efficacy, accuracy or usefulness and, to the extent permitted by Law, Licensor excludes all warranties, conditions or other terms that may be implied whether by Law, statute or otherwise including, without limitation, ownership, non-infringement, implied warranties of merchantability or fitness for a particular purpose and implied warranties of custom or usage. Licensee (including any of its successors, assigns, sublicensees or transferees) shall not have the benefit of any condition, warranty or other term whatsoever, either express or implied, including any condition, warranty or other term as to merchantability, satisfactory quality, fitness for a particular purpose, title guarantee or use of reasonable care and skill. Licensor assumes no responsibility to correct, update or supplement the Wind Data after the date of their delivery. Licensor shall not be liable in contract, tort or otherwise (including negligence) for any loss or damage, howsoever arising in connection with the Wind Data or this License Agreement. FURTHERMORE, LICENSOR SHALL HAVE NO LIABILITY FOR ANY LOSS OF PROFIT, REVENUE OR OTHER ECONOMIC LOSS, OR FOR ANY INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES, WHETHER SUCH LOSSES OR DAMAGES ARE KNOWN, FORESEEN, FORESEEABLE OR UNFORESEEN.
- 5. This License Agreement shall only be amended or rescinded by the written agreement of the Parties, which amendment or rescission shall be effective without the consent of any third party, even if, as a result, any right of a third party to enforce a term of this License Agreement will be varied or extinguished.
- 6. This License Agreement sets out the entire agreement between the Parties relating to its subject matter and supersedes all prior oral or written agreements, arrangements or understandings between the Parties relating to such subject matter. Licensee acknowledges that it is not relying on any representation, agreement, term or condition which is not set out expressly in this License Agreement.
- 7. Licensee (including any of its successors, assigns, sublicensees or transferees) shall have no rights against, and LICENSEE HEREBY IRREVOCABLY AND FOREVER WAIVES, RELEASES AND COVENANTS NEVER TO SUE OR OTHERWISE ASSERT ANY CLAIM AGAINST LICENSOR OR ANY OF ITS AFFILIATES, WHETHER BASED IN CONTRACT, TORT, RELIANCE, MISREPRESENTATION OR ANY OTHER THEORY OR BASIS OF LAW OR EQUITY, WHETHER STATUTORY, COMMON LAW OR OTHERWISE, BASED ON OR PERTAINING TO, IN WHOLE OR IN PART, ANY OR ALL WIND DATA, INCLUDING ANY ERRORS OR DEFECTS IN, OR INCOMPLETENESS OF, ANY OR ALL OF THE WIND DATA.
- 8. Licensee (including any of its successors, assigns, sublicensees or transferees) agrees to keep confidential the Wind Data, the content of this License Agreement and any confidential information received from Licensor under or as a result of the Parties entering

this License Agreement (the "Confidential Information"). Notwithstanding the foregoing, Licensee shall be allowed to share the Confidential Information with (i) any assignee or sublicensee permitted under the terms of this License Agreement that is subject to this confidentiality obligation; and (ii) its employees, affiliates, attorneys, advisors, consultants and potential or actual lenders, buyers, investors, or power buyers for the purposes of performing work or reviewing information related to this License Agreement, so long as such parties are under an obligation to treat the Wind Data as Confidential Information in accordance with and otherwise on terms at least as restrictive as those set forth in this Agreement and provided that such parties shall not have the right to share such Confidential Information with any other parties.

- 9. THIS LICENSE AGREEMENT AND THE RIGHTS AND OBLIGATIONS OF THE PARTIES HEREUNDER AND THE TRANSACTIONS CONTEMPLATED HEREBY SHALL BE GOVERNED BY, ENFORCED AND INTERPRETED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK, WITHOUT REGARD TO CONFLICTS OF LAWS RULES THAT REQUIRE OR PERMIT THE APPLICATION OF THE LAWS OF ANOTHER JURISDICTION.
- 10. In this License Agreement unless the context otherwise requires:

"Affiliate" means, in relation to Licensor or Licensee, any other entity which directly or indirectly Controls, is Controlled by, or is under direct or indirect common Control with, that Party from time to time;

"Control" means that a person possesses, directly or indirectly, the power to direct or cause the direction of some or all of the management and policies of another person, whether through the ownership of voting shares, by contract or otherwise, and "Controls" and "Controlled" shall be interpreted accordingly;

- 11. To facilitate execution, this License Agreement may be executed in as many separate counterparts as may be convenient or required. It shall not be necessary that the signature of each Party, or that the signature of all persons required to bind any Party, appear on each counterpart. All counterparts shall collectively constitute a single instrument.
- 12. A person who is not a Party to this License Agreement is neither intended to be nor shall be deemed a third party beneficiary of this License Agreement. For purposes of clarification, this preceding sentence shall not operate to restrict or limit the rights of any permitted assignee to exercise the rights and benefits conferred on such assignee by its assignor. Except as set forth herein, Licensee may not assign, sublicense or transfer in any manner any of its rights or obligations under this License Agreement without Licensor's prior written consent, except that Licensee may assign or transfer its rights and obligations under this License Agreement to an entity that acquires all or substantially all of its business or assets to which this Agreement relates (whether by merger, direct or indirect change of control, share exchange, combination or consolidation of any type, operation of law, purchase or otherwise). Any permitted assignee, sublicensee or other transferee shall agree in writing to be bound by the terms hereof.

- 13. The headings of this License Agreement are for purposes of reference only and shall not limit or otherwise affect the meaning or interpretation hereof.
- 14. Notwithstanding anything to the contrary contained herein, including in Section 2 or Section 12 hereof, the Parties acknowledge and agree that Licensee may, without the prior consent of Licensor, assign or pledge this License Agreement and any or all rights hereunder to lenders or other financing parties as collateral or security for financing relating to any Subsequent Wind Farm.
- 15. The Parties acknowledge that remedies at law may be inadequate to protect Licensor against any actual or threatened disclosure of Wind Data and Reports by Licensee, and, without prejudice to any other rights and remedies otherwise available, agree to the immediate granting of preliminary and final injunctive relief (without prior notice and without posting any bond) in favor of Licensor to enjoin and restrain any actual or anticipatory release of Wind Data by Licensee or any assignee, sublicensee or other transferee of Licensee hereunder.

[Signature pages follow]

Attachment RH-5 Page 96 of 216 Case No. 17-00044-UT

IN WITNESS WHEREOF, each of the undersigned has caused this License Agreement to be duly executed on its behalf as of the date first written above.

LICENSOR:
Hale Petersburg Wind, LLC, a Delaware limited liability company
By:
Name:
Title:
LICENSEE:
Tower Associates, LLC, a Delaware limited liability company
Ву:
Name:
Title:

SCHEDULE 1 TO

WIND DATA LICENSE AGREEMENT [Met [•] /Met [•]]

Met Tower and Wind Data

Mast	Site GPS Coordinates (WGS84)		Elevation	Wind Speed Monitoring	
	Latitude	Longitude	(m)	Heights (m)	

<u>Wind Data:</u> All raw wind data collected from the foregoing Met Tower from the measurement commencement date described therein, including but not limited to wind speed, direction, temperature, and barometric pressure.

Attachment RH-5 Pages 98 through 100 of 216 Case No. 17-00044-UT

Attachment RH-5 Pages 98 through 100

Are

Confidential Protected Information

CONFIDENTIAL PROTECTED MATERIALS PROVIDED PURSUANT TO PROTECTIVE ORDER

Attachment RH-5 Page 101 of 216 Case No. 17-00044-UT

EXHIBIT A

Wind Farm Easement Agreement

Attachment RH-5 Pages 102 through 140 of 216 Case No. 17-00044-UT

Attachment RH-5 Pages 102 through 140 Are Confidential Protected Information

CONFIDENTIAL PROTECTED MATERIALS PROVIDED PURSUANT TO PROTECTIVE ORDER

Attachment RH-5 Page 141 of 216 Case No. 17-00044-UT

Exhibit F

Form of Resignation

To Whom It May Concern:

Simultaneously with the Closing (as defined in that certain Purchase and Sale Agreement, dated as of March 6, 2017, by and between ESI Energy, LLC and Southwestern Public Service Company), the undersigned hereby resigns as a *[insert applicable titles/positions]* of Hale Petersburg Wind, LLC.

Dated:	-
	[Officer Name]

Execution Version

Disclosure Schedules To Purchase and Sale Agreement

These disclosure schedules ("Schedules") are furnished pursuant to the Purchase and Sale Agreement, dated as of March 6, 2017 (the "Purchase and Sale Agreement"), by and between Southwestern Public Service Company, a New Mexico corporation ("Buyer") and ESI Energy, LLC, a Delaware limited liability company ("Seller"). Capitalized terms used but not otherwise defined herein have the meanings ascribed to them in the Purchase and Sale Agreement.

Schedule 1.1-DP (Design Package)

Approved EORs	Collection	Substation	Transmission	Geotech
		X	X	
	X	X		
	X	X	X	
	X	X	X	
	X	X		
		X	X	
				X
				X
				X
				X

30 % Collection Design

One-Line

Design Criteria

Cable Quantities

Site Layout with circuit routes in support of permitting

30% Substation Design

Design Criteria

Metering & Relaying One-Line Diagram

General Arrangement

Site Plan

Grading Plan

30% Transmission Line Design

Design Criteria

Transmission Line Plan and Profile

Pole Outlines, Details and Material List

Roads

General Site Plan layout of turbine access roads and public roads identifying any public road intersection improvements required along the haul route, including the required improvements and layouts as required to support permitting, but excluding a full civil design of the intersection improvements.

Identification of ingress/egress

Turning Radii identified

Crossings and avoidance identified

Construction Easements around turbines identified

Preliminary Haul Route identified

Crane walks and other temporary disturbances identified (provided by SPS's contractor)

Schedule 1.1-K (Knowledge)

- 1. Anthony Pedroni, Executive Director-Development
- 2. Daryl Hart, Director -Development
- 3. Dion Watson, Associate Project Manager-Development

Schedule 1.1-PL (Permitted Liens)



Schedule 2.7(b)(vi) (Liens to be Released)

Schedule 2.7(b)(ix) (Required Consents)



2. The assignment of the Generator Interconnection Agreement from Hale Wind Energy, LLC ("HWE") to the Company (an Affiliate of HWE), and the subsequent sale of the Shares to Buyer as contemplated by the Purchase and Sale Agreement (collectively, the "GIA Transfer"), should not trigger consent requirement of Southwest Power Pool (as Transmission Provider "SPP") and Southwestern Public Service Company (as Transmission Owner "SPS") pursuant to Section 19.1 of the Generator Interconnection Agreement. However, if required by SPP and SPS, Seller may seek to obtain the consent of SPP and SPS under Section 19.1 of the Generator Interconnection Agreement in connection with the GIA Transfer.

3.

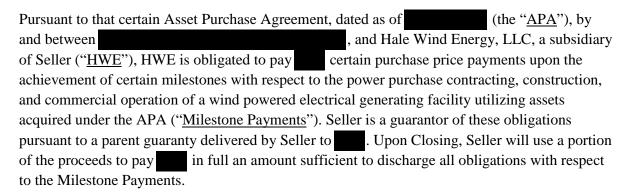
Schedule 3.3(b) (Seller Conflicts)

- 1. See Schedule 2.7(b)(vi) (Lien Release).
- 2. See Schedule 2.7(b)(ix) (Required Consents).
- 3. See Schedule 4.3(b) (Company Conflicts)

Schedule 3.3(c) (Seller Conflicts)

- 1. See Schedule 2.7(b)(vi) (Lien Release).
- 2. See Schedule 2.7(b)(ix) (Required Consents).

Schedule 3.7 (Development Agreements)



Schedule 4.3(b) (Company Conflicts)

- 1. See Schedule 3.3(c) (Seller Conflicts).
- 2. See Schedule 2.7(b)(vi) (Lien Release).
- 3. See Schedule 2.7(b)(ix) (Required Consents).

Attachment RH-5 Page 154 of 216 Case No. 17-00044-UT

Schedule 4.5(c)	(Purchased	Assets)

Schedule 4.5(f) (Meteorological Towers and Equipment)

- 1. Met Tower MET-3296: The tower includes historical meteorological data from approximately April of 2011.
- 2. Met Tower MET-3297: The tower includes historical meteorological data from approximately March of 2010.
- 3. Met Tower MET-7965: The tower includes historical meteorological data from approximately August of 2014.

Attachment RH-5 Page 156 of 216 Case No. 17-00044-UT

Schedule 4.6 (Bank Accoun	ts	S
---------------------------	----	---

Attachment RH-5 Page 157 of 216 Case No. 17-00044-UT

Schedule 4.8 (Legal Pr	oceedings)	
------------------------	------------	--

Schedule 4.10 (Unaudited Balance Sheet)

<u>Unaudited balance sheet:</u>

Will be provided in accordance with the Purchase and Sale Agreement.

Exceptions to no liabilities:

Will be provided in accordance with the Purchase and Sale Agreement.

Attachment RH-5 Page 159 of 216 Case No. 17-00044-UT

Schedule 4.11 (Taxes)

Schedule 4.13(a) (Purchased Contracts)

- 1. Generator Interconnection Agreement, (GEN-2012-020), dated May 29, 2014, among Hale Wind Energy, LLC, SPP, and Southwestern Public Service Company.
- 2. Environmental Purchase Orders issued pursuant to the Master Service Agreement by and between NextEra Energy Resources and the consultant listed.

Consultant	Entity	Services	PO	Date
	Company	Winter Eagle Surveys	2000226515	1/12/2017
	Hale Wind Energy, LLC	Biological Support	2000198208	3/4/2016
	Hale Wind Energy, LLC	Biological Support	2000181082	9/2/2015

- 3. Purchase Order between and NextEra Energy Resources, dated as of January 19, 2017, for services to be rendered with respect to geotechnical support for the Project.
- 4. Property Tax Incentives and Consulting Services Engagement Letter between and NextEra Energy Resources, LLC, dated as of October 29, 2015, for services to be rendered with respect to property tax incentives.
- 5. Delivery and Work Authorization between NextEra Energy Resources, LLC, dated as of October 29, 2015, for services to be rendered with respect to permitting and crossing agreement support.
- 6. Purchase Order between and NextEra Energy Resources, LLC, dated as of November 19, 2015, for services to be rendered with respect to utility locating and micrositing services.
- 7. Development Services Agreement between and Hale Wind Energy, LLC, dated as of May 24, 2016, for services to be rendered with respect to development.
- 8. Tax Abatement Agreement, dated May 23, 2016, between the Hale Wind Energy, LLC.

9. Agreement For Limitation on Appraised Value of Property for School District Maintenance And Operations Taxes, dated November 17, 2016, between and Hale Wind Energy, LLC.

Attachment RH-5 Page 162 of 216 Case No. 17-00044-UT

Schedule 4.13(b) (Support Obligations)

Attachment RH-5 Page 163 of 216 Case No. 17-00044-UT

Schedule 4.13(g) (Shared Contracts)

Attachment RH-5 Pages 164 through 192 of 216 Case No. 17-00044-UT

Attachment RH-5 Pages 164 through 192 Are

Confidential Protected Information

CONFIDENTIAL PROTECTED MATERIALS PROVIDED PURSUANT TO PROTECTIVE ORDER

Schedule 4.14(g) (Zoning)

See Schedule 4.15 (Permits).

Schedule 4.14(1) (Sufficiency of Land Contracts)

Schedule 4.15 (Permits)

Part I of Schedule 4.15 includes all Permits obtained with respect to the Project.

Federal Permits:

- 1. Federal Aviation Administration ("FAA") Determinations of No Hazard to Air Navigation dated February 29, 2016, granted to NextEra Energy HW for the following Aeronautical Study Numbers ("ASNs"):
 - a. 2016-WTW-1117-OE through 2016-WTW-1133-OE
 - b. 2016-WTW-1135OE
 - c. 2016-WTW-1137-OE through 2016-WTW-1153-OE
 - d. 2016-WTW-1156-OE
 - e. 2016-WTW-1181-OE through 2016-WTW-1237-OE
 - f. 2016-WTW-1240-OE
 - g. 2016-WTW-1242-OE through 2016-WTW-1243-OE
 - h. 2016-WTW-1247-OE through 2016-WTW-1251-OE
 - i. 2016-WTW-1254-OE through 2016-WTW-1256-OE
 - j. 2016-WTW-1258-OE through 2016-WTW-1288-OE
 - k. 2016-WTW-1296-OE through 2016-WTW-1300-OE
 - 1. 2016-WTW-1357-OE through 2016-WTW-1360-OE
 - m. 2016-WTW-1362-OE through 2016-WTW-1363-OE
 - n. 2016-WTW-1365-OE
- 2. FAA Determinations of No Hazard to Air Navigation dated August 24, 2016, granted to NextEra Energy HW for the following ASNs:
 - a. 2016-WTW-1115-OE through 2016-WTW-1116-OE
 - b. 2016-WTW-1134-OE
 - c. 2016-WTW-1136-OE
 - d. 2016-WTW-1154-OE through 2016-WTW-1155-OE
 - e. 2016-WTW-1157-OE through 2016-WTW-1180-OE
 - f. 2016-WTW-1238-OE through 2016-WTW-1239-OE
 - g. 2016-WTW-1241-OE
 - h. 2016-WTW-1244-OE through 2016-WTW-1246-OE
 - i. 2016-WTW-1251-OE through 2016-WTW-1253-OE
 - j. 2016-WTW-1257-OE
- 3. FAA Determinations of No Hazard to Air Navigation dated August 25, 2016, granted to NextEra Energy HW for the following ASNs:
 - a. 2016-WTW-1289-OE through 2016-WTW-1295-OE
 - b. 2016-WTW-1301-OE through 2016-WTW-1356-OE
 - c. 2016-WTW-1361-OE
 - d. 2016-WTW-1364-OE

e. 2016-WTW-1366-OE through 2016-WTW-1368-OE

State Permits

1. Texas Certificate of Registration of a Foreign Limited Liability Company to transact business in the State of Texas, dated February 23, 2017.

<u>Part II of Schedule 4.15</u> lists all Permits that have not yet been obtained but for which the Company has filed applications.

None.

<u>Part III of Schedule 4.15</u> lists all Permits that have not yet been obtained but are expected to be obtained on or prior to Closing.

Federal Permits:

1. Federal Aviation Administration Permits

State Permits:

1. None.

Local Permits (if required):

- 1. Utility crossings
- 2. Habitat Species Relocation

<u>Part IV of Schedule 4.15</u> lists required Permits that have not yet been obtained and are not expected to be obtained on or prior to Closing.

- 1. Stormwater Pollution Prevention Plan (SWPP)
- 2. Turning and Radii Permits.
- 3. United States Army Corps of Engineers, Nationwide Permit under § 404 of the Clean Water Act (subject to §401 state certification), if necessary
- 4. County road use agreements
- 5. SPCC Plan for installed equipment
- 6. Building Permits
- 7. Batch Plant Air quality permit
- 8. O&M Building permits

- 9. Any/all temporary laydown trailer building permits, as required
- 10. Transportation plan/permit for contractor provided material and equipment, as required
- 11. Highway and utility permits, as required
- 12. Road entrance, highway crossing, utility permits
- 13. Pipeline crossings
- 14. Administrative/maintenance building well permit for drinking water
- 15. Administrative/maintenance building sanitary sewer/septic system permit
- 16. Small source air permits for tanks, emergency engines, etc.

Schedule 4.15(d) (Notice or Consent with respect to Pern	its
--	-----

Attachment RH-5 Page 199 of 216 Case No. 17-00044-UT

Schedule 4.16 (Environmental Matters)

Schedule 4.17 (Intellectual Property)

See Schedule 4.5(f).

Schedule 4.21 (Wind Data)

Delivered on Closing Date.

Schedule 4.22 (Insurance)

The Company is insured under master insurance programs. The insurance coverage currently in place for the Company consists of:

- 1. Commercial General Liability.
- 2. Business Automobile Liability.
- 3. Workers Compensation & Employers Liability.
- 4. Pollution Liability.
- 5. Umbrella / Excess Liability.

Note that the insurance will be cancelled as of Closing and will not be transferred.

Schedule 4.25(a) (Reports)

Transmission Reports

- 1. Siemens PTI Report Number: R054-16 dated April 29, 2016
- 2. SPP DISIS for Generation Interconnection Requests (DISIS-2012-002) dated January 2013
- SPP Facility Study for Generation Interconnection Request GEN-2012-020 dated August 2013
- Interconnection Agreement between Southwest Power Pool, Inc., Southwestern Public Service Company and Hale Community Energy, LLC GEN-2012-020 dated May 29, 2014

Environmental Reports

- 1. Cottonwind Critical Issues Analysis dated January 13, 2011
- 2. Agency Coordination Memo dated June 2015
- 3. Cottonwind Avian Report dated August 2012
- 4. Hale Avian Use Report dated June 24, 2015
- 5. Cottonwind Bat Monitoring Final Report dated December 2012
- 6. Setbacks JPG
- 7. CRM Memo dated June 29, 2015
- 8. Wetlands Map dated January 12, 2011
- 9. Cottonwind Wetlands Jurisdictional Determination dated June 8, 2011
- 10. Cottonwind T&E Habitat Assessment dated June 6, 2011
- 11. BBCS dated June 25, 2015
- 12. Cottonwind Phase I Environmental Site Assessment dated June 6, 2011
- 13. Phase I Environmental Site Assessment Information Letter
- 14. Hale Phase I Environmental Site Assessment dated July 15, 2015
- 15. Final Avian Report dated April 5, 2016

- 16. Nest Survey Memo dated April 8, 2016
- 17. May Nest Survey Memo dated August 1, 2016
- 18. Desktop Wetlands Analysis dated October 14, 2015
- 19. Cultural Class I Letter dated October 20, 2015
- 20. HPA Memo dated June 16, 2016
- 21. Prairie Dog Memo dated December 20, 2016
- 22. Prairie Dog Options
- 23. Agency Meeting Minutes dated November 15, 2016
- 24. USFWS Letter dated December 14, 2016
- 25. Hale Wind Project Summary dated December 21, 2016
- 26. Bat Report dated February 7, 2017
- 27. All GIS constraint files including environmental, site control, houses, roads, pipelines, waterbodies, oil wells, railroads, etc.

Additional Reports

1. Federal Aviation Administration (FAA) Determinations of No Hazard for turbine and permanent met tower locations.

Schedule 4.25(b) (Material Reports)

- 1. Shadow Flicker Study Report
- 2. Noise Modeling and Baseline Noise Study
- 3. Geotechnical Report
- 4. Wind Resource Assessment

Attachment RH-5 Page 206 of 216 Case No. 17-00044-UT

Schedule 4.26	(Affiliate	Transactions)	

Schedule 6.4 (Buyer's Consent Individuals)

- Alan J. Davidson
 Director of Capital Projects
 600 South Tyler Street, Suite 2200
 Amarillo Texas 79101-2337
 alan.davidson@xcelenergy.com
- Bruce Gomm
 Project Manager
 600 South Tyler Street, Suite 2100
 Amarillo Texas 79101-2337
- Chris Whiteside
 Project Manager
 600 South Tyler Street, Suite 2100
 Amarillo Texas 79101-2337

Schedule 6.6 (Uncompleted Development Work)

To be determined in connection with Closing.

Attachment RH-5 Pages 209 through 216 of 216 Case No. 17-00044-UT

Attachment RH-5

Pages 209 through 216

Are

Confidential Protected Information

CONFIDENTIAL PROTECTED MATERIALS PROVIDED PURSUANT TO PROTECTIVE ORDER

Attachment RH-6 Page 1 of 1 Case No. 17-00044-UT

Attachment RH-6(CONF) Page 1 of 1

Is Confidential Protected Information

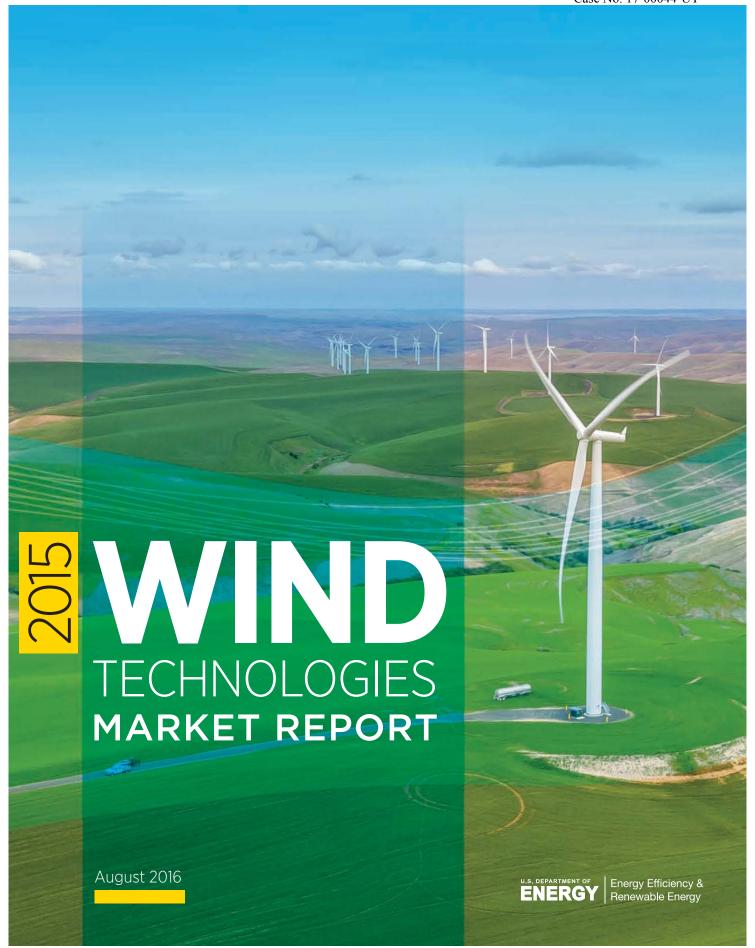
CONFIDENTIAL PROTECTED MATERIALS PROVIDED PURSUANT TO PROTECTIVE ORDER

Attachment RH-7 Page 1 of 1 Case No. 17-00044-UT

Attachment RH-7(CONF) Page 1 of 1

Is Confidential Protected Information

CONFIDENTIAL PROTECTED MATERIALS PROVIDED PURSUANT TO PROTECTIVE ORDER



This report is being disseminated by the U.S. Department of Energy (DOE). As such, this document was prepared in compliance with Section 515 of the Treasury and General Government Appropriations Act for fiscal year 2001 (public law 106-554) and information quality guidelines issued by DOE. Though this report does not constitute "influential" information, as that term is defined in DOE's information quality guidelines or the Office of Management and Budget's Information Quality Bulletin for Peer Review, the study was reviewed both internally and externally prior to publication. For purposes of external review, the study benefited from the advice and comments of six wind industry and trade association representatives, two utility-sector representatives, three federal laboratory staff, and four U.S. government employees and contractors.

NOTICE

This report was prepared as an account of work sponsored by an agency of the United States government. Neither the United States government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States government or any agency thereof.

Available electronically at osti.gov/bridge

Available for a processing fee to U.S. Department of Energy and its contractors, in paper, from:

U.S. Department of Energy Office of Scientific and Technical Information P.O. Box 62 Oak Ridge, TN 37831-0062 phone: 865.576.8401

fax: 865.576.5728

email: reports@adonis.osti.gov

Available for sale to the public, in paper, from:

U.S. Department of Commerce National Technical Information Service 5285 Port Royal Road Springfield, VA 22161 phone: 800.553.6847

fax: 703.605.6900

email: orders@ntis.fedworld.gov

online ordering: ntis.gov

2015 Wind Technologies Market Report

Primary Authors

Ryan Wiser, Lawrence Berkeley National Laboratory Mark Bolinger, Lawrence Berkeley National Laboratory

With Contributions From

Galen Barbose, Naïm Darghouth, Ben Hoen, Andrew Mills, Joe Rand,
Dev Millstein (Lawrence Berkeley National Laboratory)
Kevin Porter, Rebecca Widiss (Exeter Associates)
Frank Oteri, Suzanne Tegen, Tian Tian (National Renewable Energy Laboratory)

Table of Contents

Acknowledgments	
Acronyms and Abbreviations	iii
Executive Summary	v
1. Introduction	1
2. Installation Trends	3
3. Industry Trends	
4. Technology Trends	30
5. Performance Trends	39
6. Cost Trends	51
7. Wind Power Price Trends	60
8. Policy and Market Drivers	68
9. Future Outlook	79
Appendix: Sources of Data Presented in this Report	
References	86

Acknowledgments

For their support of this ongoing report series, the authors thank the entire U.S. Department of Energy (DOE) Wind Power Technologies Office team. In particular, we wish to acknowledge Patrick Gilman, Mark Higgins, Rich Tusing, and Jose Zayas. For reviewing elements of this report or providing key input, we acknowledge: Andrew David (U.S. International Trade Commission); Patrick Gilman, Charlton Clark, Rich Tusing, John Coggin, Daniel Beals, Devan Willemsen (DOE staff and contractors); Michael Goggin, John Hensley, Hannah Hunt (American Wind Energy Association, AWEA); Eric Lantz, Walt Musial, Christopher Moné (National Renewable Energy Laboratory, NREL); Erik Ela (Electric Power Research Institute); Charlie Smith (Utility Variable-Generation Integration Group); Liz Salerno (Siemens); Ed Weston (GLWN); Chris Namovicz, Cara Marcy, Manussawee Sukunta (Energy Informational Administration, EIA); and Matt McCabe (Clear Wind). We greatly appreciate AWEA for the use of their comprehensive database of wind power projects. We also thank Amy Grace (Bloomberg New Energy Finance) for the use of Bloomberg NEF data; Donna Heimiller and Billy Roberts (NREL) for assistance with the wind project and wind manufacturing maps as well as for assistance in mapping wind resource quality; and Carol Laurie and Alex Lemke (NREL) for assistance with layout, formatting, production, and communications. Lawrence Berkeley National Laboratory's contributions to this report were funded by the Wind Power Technologies Office, Office of Energy Efficiency and Renewable Energy of the DOE under Contract No. DE-AC02-05CH11231. The authors are solely responsible for any omissions or errors contained herein.

Acronyms and Abbreviations

AWEA American Wind Energy Association
Bloomberg NEF Bloomberg New Energy Finance
BPA Bonneville Power Administration
BOEM Bureau of Ocean Energy Management
CAISO California Independent System Operator

DOE U.S. Department of Energy

EDPR EDP Renováveis

EEI Edison Electric Institute

EIA U.S. Energy Information Administration ERCOT Electric Reliability Council of Texas FERC Federal Energy Regulatory Commission

GE General Electric Corporation

GW gigawatt

HTS Harmonized Tariff Schedule
ICE Intercontinental Exchange
IOU investor-owned utility
IPP independent power producer

ISO independent system operator

ISO-NE New England Independent System Operator

ITC investment tax credit

kV kilovolt kW kilowatt kWh kilowatt-hour m² square meter

MISO Midcontinent Independent System Operator

MW megawatt MWh megawatt-hour

NERC North American Electric Reliability Corporation

NREL National Renewable Energy Laboratory NYISO New York Independent System Operator

O&M operations and maintenance OEM original equipment manufacturer

PJM PJM Interconnection
POU publicly owned utility
PPA power purchase agreement
PTC production tax credit

REC renewable energy certificate

RGGI Regional Greenhouse Gas Initiative RPS renewables portfolio standard

RTO regional transmission organization

SPP Southwest Power Pool

USITC U.S. International Trade Commission

W watt

WAPA Western Area Power Administration

Executive Summary

Annual wind power capacity additions in the United States surged in 2015 and are projected to continue at a rapid clip in the coming five years. Recent and projected near-term growth is supported by the industry's primary federal incentive—the production tax credit (PTC)—as well as a myriad of state-level policies. Wind additions are also being driven by improvements in the cost and performance of wind power technologies, yielding low power sales prices for utility, corporate, and other purchasers. At the same time, the prospects for growth beyond the current PTC cycle remain uncertain: growth could be blunted by declining federal tax support, expectations for low natural gas prices, and modest electricity demand growth.

Key findings from this year's Wind Technologies Market Report include:

Installation Trends

- Wind power additions surged in 2015, with 8,598 MW of new capacity added in the United States and \$14.5 billion invested. Supported by favorable tax policy and other drivers, cumulative wind power capacity grew by 12%, bringing the total to 73,992 MW.
- Wind power represented the largest source of U.S. electric-generating capacity additions in 2015. Wind power constituted 41% of all U.S. generation capacity additions in 2015, up sharply from its 24% market share the year before and close to its all-time high. Over the last decade, wind power represented 31% of all U.S. capacity additions, and an even larger fraction of new generation capacity in the Interior (54%) and Great Lakes (48%) regions. Its contribution to generation capacity growth over the last decade is somewhat smaller in the West (22%) and Northeast (21%), and considerably less in the Southeast (2%).
- The United States ranked second in annual wind additions in 2015, but was well behind the market leaders in wind energy penetration. A record high amount of new wind capacity, roughly 63,000 MW, was added globally in 2015, yielding a cumulative total of 434,000 MW. The United States remained the second-leading market in terms of cumulative capacity, but was the leading country in terms of wind power production. A number of countries have achieved high levels of wind penetration; end-of-2015 wind power capacity is estimated to supply the equivalent of roughly 40% of Denmark's electricity demand, and between 20% to 30% of Portugal, Ireland, and Spain's demand. In the United States, the wind power capacity installed by the end of 2015 is estimated, in an average year, to equate to 5.6% of electricity demand.
- Texas installed the most capacity in 2015 with 3,615 MW, while twelve states meet or exceed 10% wind energy penetration. New utility-scale wind turbines were installed in 20 states in 2015. On a cumulative basis, Texas remained the clear leader, with 17,711 MW. Notably, the wind power capacity installed in Iowa and South Dakota supplied more than 31% and 25%, respectively, of all in-state electricity generation in 2015, with Kansas close behind at nearly 24%. A total of twelve states have achieved wind penetration levels of 10% or higher.
- The first commercial offshore turbines are expected to be commissioned in the United States in 2016 amid mixed market signals. At the end of 2015, global offshore wind capacity stood at roughly 12 GW. In the United States, the 30 MW Block Island project off

the coast of Rhode Island will be the first plant to be commissioned, anticipated by the end of 2016. Projects in Massachusetts, New Jersey, Virginia, and Oregon, meanwhile, all experienced setbacks. Strides continued to be made in the federal arena in 2015, both through the U.S. Department of the Interior's responsibilities in issuing offshore leases, and the U.S. Department of Energy's (DOE's) funding for demonstration projects. A total of 23 offshore wind projects totaling more than 16 GW are in various stages of development in the United States.

• Data from interconnection queues demonstrate that a substantial amount of wind power capacity is under consideration. At the end of 2015, there were 110 GW of wind power capacity within the transmission interconnection queues reviewed for this report, representing 31% of all generating capacity within these queues—higher than all other generating sources except natural gas. In 2015, 45 GW of wind power capacity entered interconnection queues (the largest annual sum since 2010), compared to 58 GW of natural gas and 24 GW of solar.

Industry Trends

- GE and Vestas captured 73% of the U.S. wind power market in 2015. Continuing their recent dominance as the three largest turbine suppliers to the U.S., in 2015 GE captured 40% of the market, followed by Vestas (33%) and Siemens (14%). Globally, Goldwind and Vestas were the top two suppliers, followed by GE, Siemens, and Gamesa. Chinese manufacturers continued to occupy positions of prominence in the global ratings, with five of the top 10 spots; to date, however, their growth has been based almost entirely on sales in China.
- The manufacturing supply chain continued to adjust to swings in domestic demand for wind equipment. With growth in the U.S. market, wind sector employment reached a new high of 88,000 full-time workers at the end of 2015. Moreover, the profitability of turbine suppliers has rebounded over the last three years. Although there have been a number of recent plant closures, each of the three major turbine manufacturers serving the U.S. market has one or more domestic manufacturing facilities. Domestic nacelle assembly capability stood at roughly 10 GW in 2015, and the United States also had the capability to produce approximately 7 GW of blades and 6 GW of towers annually. Despite the significant growth in the domestic supply chain over the last decade, conflicting pressures remain, such as: an upswing in near- to medium-term expected growth, but also strong international competitive pressures and possible reduced demand over time as the PTC is phased down. As a result, though many manufacturers increased the size of their U.S. workforce in 2015, expectations for significant supply-chain expansion have become more pessimistic.
- Domestic manufacturing content is strong for some wind turbine components, but the U.S. wind industry remains reliant on imports. The U.S. is reliant on imports of wind equipment from a wide array of countries, with the level of dependence varying by component. Domestic content is highest for nacelle assembly (>85%), towers (80-85%), and blades and hubs (50-70%), but is much lower (<20%) for most components internal to the nacelle. Exports of wind-powered generating sets from the United States rose from \$16 million in 2007 to \$544 million in 2014, but fell to \$149 million in 2015.
- The project finance environment remained strong in 2015. Spurred on by the December 2014 and March 2015 single-year extensions of the PTC's construction start deadline and

Attachment RH-8 Page 8 of 102 Case No. 17-00044-UT

IRS safe harbor guidance, respectively, the U.S. wind market raised ~\$6 billion of new tax equity in 2015—the largest single-year amount on record. Debt finance increased slightly to \$2.9 billion, with plenty of additional availability. Tax equity yields drifted slightly lower to just below 8% (in unlevered, after-tax terms), while the cost of term debt fell to just 4% by the end of the year—perhaps the lowest it has ever been. Looking ahead, 2016 should be another busy year, given the recent 5-year PTC extension and phase down.

- IPPs own the vast majority of wind assets built in 2015. Independent power producers (IPPs) own 85% of the new wind capacity installed in the United States in 2015, with the remaining assets owned by investor-owned utilities (12%) and other entities (3%). On a cumulative basis through 2015, IPPs own 83% and utilities own 15% of U.S. wind capacity, with the remaining 2% owned by entities that are neither IPPs nor utilities (e.g., towns, schools, businesses, farmers).
- Long-term contracted sales to utilities remained the most common off-take arrangement, but direct retail sales gained ground. Electric utilities continued to be the dominant off-takers of wind power in 2015, either owning (12%) or buying (48%) power from 60% of the new capacity installed last year. Merchant/quasi-merchant projects accounted for another 29%, while direct retail purchasers including corporate off-takers are buying the remaining 10% (a share that should increase next year). On a cumulative basis, utilities own (15%) or buy (53%) power from 68% of all wind capacity in the United States, with merchant/quasi-merchant projects accounting for 24%, power marketers 6%, and direct retail buyers just 2% (though likely to increase in the coming years).

Technology Trends

- Turbine nameplate capacity, hub height, and rotor diameter have all increased significantly over the long term. The average nameplate capacity of newly installed wind turbines in the United States in 2015 was 2.0 MW, up 180% since 1998–1999. The average hub height in 2015 was 82.0 meters, up 47% since 1998-1999, while the average rotor diameter was 102 meters, up 113% since 1998–1999.
- Growth in rotor diameter has outpaced growth in nameplate capacity and hub height in recent years. Rotor scaling has been especially significant in recent years, and more so than increases in nameplate capacity and hub heights, both of which have seen a stabilization of the long-term trend since at least 2011. In 2008, no turbines employed rotors that were 100 meters in diameter or larger; by 2015, 86% of new installed wind capacity featured rotor diameters of at least 100 meters.
- Turbines originally designed for lower wind speed sites have rapidly gained market share. With growth in average swept rotor area outpacing growth in average nameplate capacity, there has been a decline in the average "specific power" (in W/m²) over time, from 394 W/m² among projects installed in 1998–1999 to 246 W/m² among projects installed in 2015. In general, turbines with low specific power were originally designed for lower wind speed sites. Another indication of the increasing prevalence of lower wind speed turbines is that, in 2015, the vast majority of new installations used IEC Class 3 and Class 2/3 turbines.

ⁱ A wind turbine's specific power is the ratio of its nameplate capacity rating to its rotor-swept area. All else equal, a decline in specific power should lead to an increase in capacity factor.

• Turbines originally designed for lower wind speeds are now regularly employed in both lower and higher wind speed sites; taller towers predominate in the Great Lakes and Northeast. Low specific power and IEC Class 3 and 2/3 turbines are now regularly employed in all regions of the United States, and in both lower and higher wind speed sites. In parts of the Interior region, in particular, relatively low wind turbulence has allowed turbines designed for lower wind speeds to be deployed across a wide range of site-specific resource conditions. The tallest towers, meanwhile, have principally been deployed in the Great Lakes and Northeastern regions, in lower wind speed sites, with specific location decisions likely driven by the wind shear of the site.

Performance Trends

- Sample-wide capacity factors have gradually increased, but have been impacted by curtailment and inter-year wind resource variability. Wind project capacity factors have generally increased over time. For a large sample of projects built from 1998 through 2014, capacity factors averaged 32.8% between 2011 and 2015 versus 31.8% between 2006 and 2010 versus 30.3% between 2000 and 2005. That being said, time-varying influences—such as inter-year variations in the strength of the wind resource or changes in the amount of wind energy curtailment—have partially masked the positive influence of turbine scaling on capacity factors. For example, wind speeds throughout the interior and western U.S. were significantly below normal for much of 2015, which negatively impacted fleet-wide capacity factors. Positively, the degree of wind curtailment has declined recently in what historically have been the most problematic areas. For example, only 1.0% of all wind generation within ERCOT was curtailed in 2015, down sharply from the peak of 17% in 2009.
- The impact of technology trends on capacity factor becomes more apparent when parsed by project vintage. Focusing only on performance in 2015 (to partially control for time-varying influences) and parsing capacity factors by project vintage tells a more interesting story, wherein rotor scaling over the past few years has clearly begun to drive capacity factors higher. The average 2015 capacity factor among projects built in 2014 reached 41.2%, compared to an average of 31.2% among projects built from 2004–2011 and just 25.8% among projects built from 1998–2003. The ongoing decline in specific power has been offset to some degree by a trend—especially from 2009 to 2012—towards building projects at lower-quality wind sites. Controlling for these two competing influences confirms this offsetting effect and shows that turbine design changes are driving capacity factors significantly higher over time among projects located within given wind resource regimes. Performance degradation over time is a final driver examined in this section: though many caveats are in order, older wind projects appear to suffer from performance degradation, particularly as they approach and enter their second decade of operations.
- Regional variations in capacity factors reflect the strength of the wind resource and adoption of new turbine technology. Based on a sub-sample of wind projects built in 2014, average capacity factors in 2015 were the highest in the Interior region (42.7%). Not surprisingly, the regional rankings are roughly consistent with the relative quality of the wind resource in each region, and they reflect the degree to which each region has adopted turbines with lower specific power or taller towers. For example, the Great Lakes has thus far adopted these new designs to a much larger extent than has the West, with corresponding implications for average capacity factors in each region.

Cost Trends

- Wind turbine prices remained well below levels seen several years ago. After hitting a low of roughly \$750/kW from 2000 to 2002, average turbine prices increased to more than \$1,500/kW by the end of 2008. Wind turbine prices have since dropped substantially, despite increases in hub heights and especially rotor diameters. Recently announced transactions feature pricing in the \$850–\$1,250/kW range. These price reductions, coupled with improved turbine technology, have exerted downward pressure on project costs and wind power prices.
- Lower turbine prices have driven reductions in reported installed project costs. The capacity-weighted average installed project cost within our 2015 sample stood at roughly \$1,690/kW—down \$640/kW from the apparent peak in average reported costs in 2009 and 2010. Early indications from a preliminary sample of projects currently under construction and anticipating completion in 2016 suggest no material change in installed costs in 2016.
- Installed costs differed by project size, turbine size, and region. Installed project costs exhibit some economies of scale, at least at the lower end of the project and turbine size range. Additionally, among projects built in 2015, the windy Interior region of the country was the lowest-cost region, with a capacity-weighted average cost of \$1,640/kW.
- Operations and maintenance costs varied by project age and commercial operations date. Despite limited data availability, it appears that projects installed over the past decade have, on average, incurred lower operations and maintenance (O&M) costs than older projects in their first several years of operation, and that O&M costs increase as projects age.

Wind Power Price Trends

- Wind PPA prices remain very low. After topping out at nearly \$70/MWh for PPAs executed in 2009, the national average level-through price of wind PPAs within the Berkeley Lab sample has dropped to around the \$20/MWh level, inclusive of the federal production tax credit (PTC), though this latest nationwide average is admittedly focused on a sample of projects that largely hail from the lowest-priced Interior region of the country, where most of the new capacity built in recent years is located. Focusing only on the Interior region, the PPA price decline has been more modest, from ~\$55/MWh among contracts executed in 2009 to ~\$20/MWh today. Today's low PPA prices have been enabled by the combination of higher capacity factors, declining costs, and record-low interest rates documented elsewhere in this report.
- The relative economic competitiveness of wind power declined in 2015 with the drop in wholesale power prices. A sharp drop in wholesale power prices in 2015 made it somewhat harder for wind power to compete, notwithstanding the low wind energy PPA prices available to purchasers. This is particularly true in light of the continued expansion of wind development in the Interior region of the U.S., where wholesale power prices are among the lowest in the nation. That said, the price stream of wind PPAs executed in 2014-2016 compares very favorably to the EIA's latest projection of the fuel costs of gas-fired generation extending out through 2040.

Policy and Market Drivers

- A long-term extension and phase down of federal incentives for wind projects is leading to a resurgent domestic market. In December 2015, Congress passed a 5-year phased-down extension of the PTC. To qualify, projects must begin construction before January 1, 2020. In May 2016, the IRS issued favorable guidance allowing four years for project completion after the start of construction, without the burden of having to prove continuous construction. In extending the PTC, Congress also included a progressive reduction in the value of the credit for projects starting construction after 2016. Specifically, the PTC will phase down in increments of 20 percentage points per year for projects starting construction in 2017 (80% PTC), 2018 (60%), and 2019 (40%).
- State policies help direct the location and amount of wind power development, but current policies cannot support continued growth at recent levels. As of July 2016, RPS policies existed in 29 states and Washington D.C. Of all wind capacity built in the United States from 2000 through 2015, roughly 51% is delivered to load-serving entities with RPS obligations. Among just those wind projects built in 2015, however, this proportion fell to 24%. Existing RPS programs are projected to require average annual renewable energy additions of roughly 3.7 GW/year through 2030, only a portion of which will come from wind. These additions are well below the average growth rate in wind power capacity in recent years.
- System operators are implementing methods to accommodate increased penetrations of wind energy, but transmission and other barriers remain. Studies show that wind energy integration costs are almost always below \$12/MWh—and often below \$5/MWh—for wind power capacity penetrations of up to or even exceeding 40% of the peak load of the system in which the wind power is delivered. System operators and others continue to implement a range of methods to accommodate increased wind energy penetrations and reduce barriers to deployment: treating wind as dispatchable, increasing wind's capability to provide grid services, revising ancillary service market design, balancing area coordination, and new transmission investment. About 1,500 miles of transmission lines came on-line in 2015—less than in previous years. The wind industry, however, has identified 15 near-term transmission projects that—if all were completed—could carry 52 GW of additional wind capacity.

Future Outlook

With the five-year phased-down extension of the PTC, annual wind power capacity additions are projected to continue at a rapid clip for several years. Near-term additions will also be driven by improvements in the cost and performance of wind power technologies, which continue to yield very low power sales prices. Growing corporate demand for wind energy and state-level policies are expected to play important roles as well, as might utility action to proactively stay ahead of possible future environmental compliance obligations. As a result, various forecasts for the domestic market show expected capacity additions averaging more than 8,000 MW/year from 2016 to 2020. Projections for 2021 to 2023, however, show a downturn in additions as the PTC progressively delivers less value to the sector. Expectations for continued low natural gas prices, modest electricity demand growth, and lower near-term demand from state RPS policies also put a damper on growth expectations, as do inadequate transmission infrastructure and competition from solar energy in certain regions of the country. At the same time, the potential for continued

technological advancements and cost reductions enhance the prospects for longer-term growth, as does burgeoning corporate demand for wind energy and longer-term state RPS requirements. EPA's Clean Power Plan, depending on its ultimate fate, may also create new markets for wind. Moreover, new transmission in some regions is expected to open up high-quality wind resources to development. Given these diverse underlying potential trends, wind capacity additions—especially after 2020—remain uncertain.

1. Introduction

Annual wind power capacity additions in the United States surged in 2015 and are projected to continue at a rapid clip in the coming five years. Recent and projected near-term growth is supported by the industry's primary federal incentive—the production tax credit (PTC)—having been extended for several years (though with a phase-down schedule, described further on pages 68-69), as well as a myriad of state-level policies. Wind additions are also being driven by improvements in the cost and performance of wind power technologies, yielding low power sales prices for utility, corporate, and other purchasers. At the same time, the prospects for growth beyond the current PTC cycle remain uncertain: growth could be blunted by declining federal tax support, expectations for low natural gas prices, and modest electricity demand growth.

This annual report—now in its tenth year—provides a detailed overview of developments and trends in the U.S. wind power market, with a particular focus on 2015. The report begins with an overview of key installation-related trends: trends in U.S. wind power capacity growth; how that growth compares to other countries and generation sources; the amount and percentage of wind energy in individual states; the status of offshore wind power development; and the quantity of proposed wind power capacity in various interconnection queues in the United States. Next, the report covers an array of wind power industry trends: developments in turbine manufacturer market share; manufacturing and supply-chain developments; wind turbine and component imports into and exports from the United States; project financing developments; and trends among wind power project owners and power purchasers. The report then turns to a summary of wind turbine technology trends: turbine size, hub height, rotor diameter, specific power, and IEC Class. After that, the report discusses wind power performance, cost, and pricing trends. In so doing, it describes trends in project performance, wind turbine transaction prices, installed project costs, and operations and maintenance (O&M) expenses. It also reviews the prices paid for wind power in the United States and how those prices compare to short-term wholesale electricity prices and forecasts of future natural gas prices. Next, the report examines policy and market factors impacting the domestic wind power market, including federal and state policy drivers as well as transmission and grid integration issues. The report concludes with a preview of possible near-term market developments.

This edition of the annual report updates data presented in previous editions while highlighting key trends and important new developments from 2015. The report concentrates on larger, utility-scale wind turbines, defined here as individual turbines that *exceed* 100 kW in size. The U.S. wind power sector is multifaceted, however, and also includes smaller, customer-sited wind turbines used to power residences, farms, and businesses. Further information on *distributed wind power*, which includes smaller wind turbines as well as the use of larger turbines in distributed applications, is available through a separate annual report funded by the U.S. Department of Energy (DOE). Additionally, because this report has an historical focus, and all

¹ This 100-kW threshold between "smaller" and "larger" wind turbines is applied starting with 2011 projects to better match AWEA's historical methodology, and is also justified by the fact that the U.S. tax code makes a similar distinction. In years prior to 2011, different cut-offs are used to better match AWEA's reported capacity numbers and to ensure that older utility-scale wind power projects in California are not excluded from the sample.

² As used by the DOE, distributed wind is defined in terms of technology application based on a wind project's location relative to end use and power distribution infrastructure, rather than on technology size or project size. Distributed wind systems are connected either on the customer side of the meter (to meet the onsite load) or directly

Attachment RH-8 Page 14 of 102 Case No. 17-00044-UT

U.S. wind power projects have been land-based, its treatment of trends in the offshore wind power sector is limited to a brief summary of recent developments.

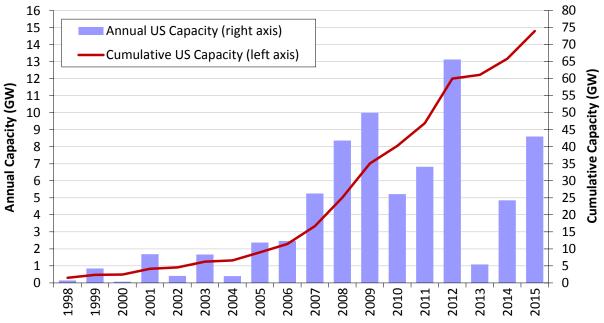
Much of the data included in this report were compiled by Lawrence Berkeley National Laboratory (Berkeley Lab) from a variety of sources, including the American Wind Energy Association (AWEA), the U.S. Energy Information Administration (EIA), and the Federal Energy Regulatory Commission (FERC). The Appendix provides a summary of the many data sources used in the report, and a list of specific references follows the Appendix. Data on wind power capacity additions in the United States (as well as wind power projects) are based largely on information provided by AWEA, although minor methodological differences may yield slightly different numbers from AWEA (2016a) in some cases. In other cases, the data shown here represent only a sample of actual wind power projects installed in the United States; furthermore, the data vary in quality. As such, emphasis should be placed on overall trends, rather than on individual data points. Finally, each section of this document primarily focuses on historical market information, with an emphasis on 2015. With some limited exceptions—including the final section of the report—the report does not seek to forecast trends.

to the local grid (to support grid operations or offset large loads nearby). For the DOE distributed wind report, see: Orrell and Foster (2016).

2. Installation Trends

Wind power additions surged in 2015, with 8,598 MW of new capacity added in the United States and \$14.5 billion invested

The U.S. wind power market surged in 2015, with 8,598 MW of new capacity added, bringing the cumulative total to 73,992 MW (Figure 1).³ This growth required \$14.5 billion of investment in wind power project installations in 2015, for a cumulative investment total of more than \$150 billion since the beginning of the 1980s.⁴⁵ With a record 484 MW of wind power capacity decommissioned in 2015, growth in cumulative "net" capacity in 2015 was 12%.



Source: AWEA project database

Figure 1. Annual and cumulative growth in U.S. wind power capacity

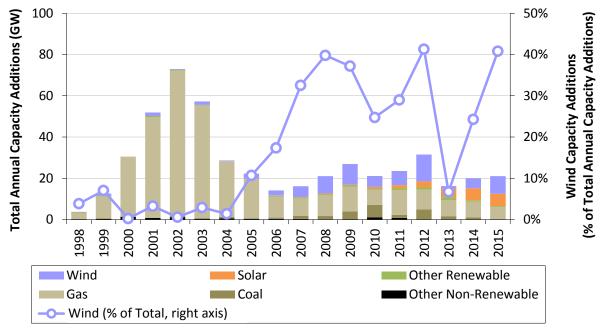
In 2015, growth was driven by recent improvements in the cost and performance of wind power technologies. State renewables portfolio standards (RPS) and corporate demand for wind power also played a role. Another key factor was the PTC, which, in December 2015, was extended for an additional 5 years—applying now to projects that begin construction before January 1, 2020, but with a progressive reduction in the value of the credit for projects starting construction after 2016. Substantial additional capacity additions are anticipated in the near term—in part due to the PTC extension.

³ When reporting annual wind power capacity additions, this report focuses on *gross* capacity additions of large wind turbines. The *net* increase in capacity each year can be somewhat lower, reflecting turbine decommissioning. ⁴ All cost and price data are reported in real 2015\$.

⁵ These investment figures are based on an extrapolation of the average project-level capital costs reported later in this report and do not include investments in manufacturing facilities, research and development expenditures, or O&M costs.

Wind power represented the largest source of U.S. electric-generating capacity additions in 2015

Wind power has comprised a sizable share of generation capacity additions in recent years. In 2015, wind power constituted 41% of all U.S. generation capacity additions, up sharply from its 24% market share the year before and close to its all-time high (Figure 2). For the second time, wind power was the largest source of annual new generating capacity, well ahead of the next two leading sources, solar power and natural gas.

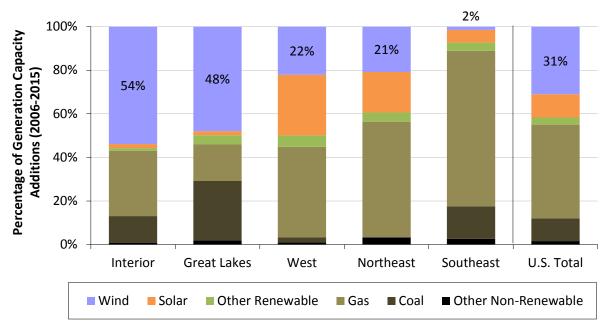


Source: ABB, AWEA, GTM Research, Berkeley Lab

Figure 2. Relative contribution of generation types in annual capacity additions

Over the last decade, wind power represented 31% of total U.S. capacity additions, and an even larger fraction of new generation capacity in the Interior (54%) and Great Lakes (48%) regions (Figure 3; see Figure 29, later, for regional definitions). Its contribution to generation capacity growth over the last decade is somewhat smaller—but still significant—in the West (22%) and Northeast (21%), and considerably less in the Southeast (2%).

⁶ Data presented here are based on gross capacity additions, not considering retirements. Furthermore, they include only the 50 U.S. states, not U.S. territories.



Source: ABB, AWEA, GTM Research, Berkeley Lab

Figure 3. Generation capacity additions by region (2006–2015)

The United States ranked second in annual wind additions in 2015, but was well behind the market leaders in wind energy penetration

Global wind additions yet again reached a new high in 2015, with roughly 63,000 MW of new capacity, 23% above the previous record of 51,000 MW added in 2014. Cumulative global capacity stood at approximately 434,000 MW at the end of the year (Navigant 2016a; Table 1). The United States ended 2015 with 17% of total global wind power capacity, a distant second to China by this metric (Table 1). On the basis of wind power production, however, the United States remained the leading country globally in 2015 (AWEA 2016a). Annual growth in cumulative capacity in 2015 was 23% for the United States and 17% globally.

After leading the world in annual wind power capacity additions from 2005 through 2008, and then losing the mantle to China from 2009 through 2011, the United States narrowly regained the global lead in 2012. In 2013, the United States dropped precipitously to 6th place in annual additions, but then regained ground, rising to 3rd place in 2014 and 2nd place in 2015 (Table 1). The U.S. wind power market represented 14% of global installed capacity in 2015.

⁷ Yearly and cumulative installed wind power capacity in the United States are from the present report, while global wind power capacity comes from Navigant (2016a) but are updated with the U.S. data presented here. Some disagreement exists among these data sources and others.

⁸ Wind power additions and cumulative capacity in China include capacity that was installed but that had not yet begun to deliver electricity by the end of 2015, due to a lack of coordination between wind developers and transmission providers and the lengthier time that it takes to build transmission and interconnection facilities. All of the U.S. capacity reported here, on the other hand, was capable of electricity delivery.

Table 1. International Rankings of Wind Power Capacity

Annual Ca (2015, N		Cumulative Capacity (end of 2015, MW)			
China	30,293	China	145,053		
United States	8,598	United States	73,992		
Germany	6,013	Germany	44,986		
Brazil	2,754	India	25,352		
India	2,623	Spain	22,665		
Canada	1,506	United Kingdom	13,388		
Poland	1,266	Canada	11,190		
France	1,073	France	10,243		
United Kingdom	975	Brazil	9,346		
Turkey	956	Italy	8,851		
Rest of World	7,078	Rest of World	68,464		
TOTAL	63,135	TOTAL	433,530		

Source: Navigant; AWEA project database for U.S. capacity

A number of countries have achieved relatively high levels of wind energy penetration in their electricity grids. Figure 4 presents data on end-of-2015 (and end-of-2014) installed wind power capacity, translated into projected annual electricity supply based on assumed country-specific capacity factors and then divided by projected 2016 (and 2015) electricity consumption. Using this approximation for the contribution of wind power to electricity consumption, and focusing only on those countries with the greatest cumulative installed wind power capacity, end-of-2015 installed wind power is estimated to supply the equivalent of roughly 40% of Denmark's electricity demand, and between 20% to 30% of Portugal, Ireland, and Spain's demand. In the United States, the cumulative wind power capacity installed at the end of 2015 is estimated, in an average year, to equate to 5.6% of the nation's electricity demand. On a global basis, wind energy's contribution is estimated to be approximately 4.3%.

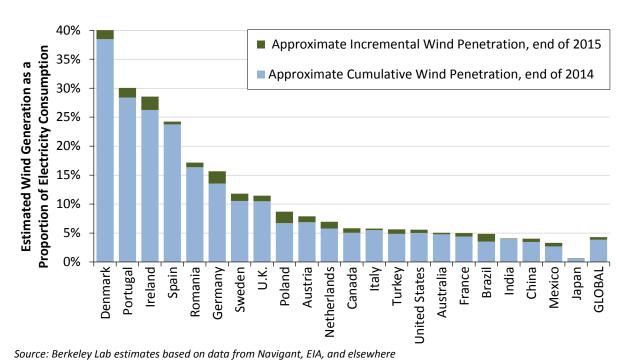


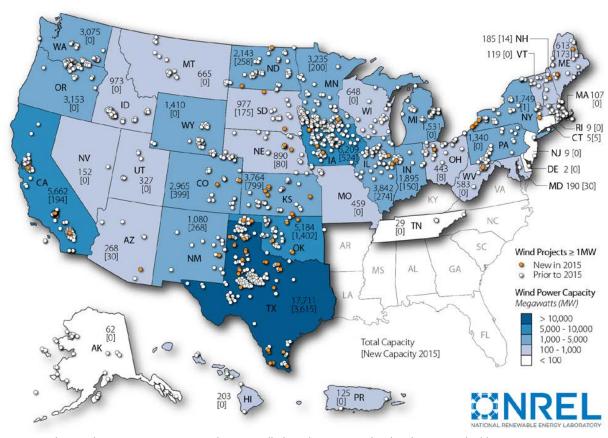
Figure 4. Approximate wind energy penetration in the countries with the greatest installed wind

Texas installed the most capacity in 2015 with 3,615 MW, while twelve states meet or exceed 10% wind energy penetration

power capacity

New utility-scale wind turbines were installed in 20 states in 2015. Texas installed the most new wind capacity of any state, with 3,615 MW. As shown in Figure 5 and Table 2, other leading states in terms of new capacity included Oklahoma (1,402 MW), Kansas (799 MW), Iowa (524 MW), and Colorado (399 MW).

On a cumulative basis, Texas remained the clear leader among states, with 17,711 MW installed at the end of 2015—nearly three times as much as the next-highest state (Iowa, with 6,209 MW). In fact, Texas has more wind capacity than all but five countries—including the rest of the United States—worldwide. States distantly following Texas in cumulative installed capacity include Iowa, California, Oklahoma, Illinois, Kansas, Minnesota, Oregon, and Washington—all with more than 3,000 MW. Thirty-five states, plus Puerto Rico, had more than 100 MW of wind capacity as of the end of 2015, with 24 of these topping 500 MW, 17 topping 1,000 MW, and 11 topping 2,000 MW. Although all commercial wind projects in the United States to date have been installed on land, offshore development activities continued in 2015, as discussed in the next section.



Note: Numbers within states represent cumulative installed wind capacity and, in brackets, annual additions in 2015.

Figure 5. Location of wind power development in the United States

Some states have realized high levels of wind energy penetration. The right half of Table 2 lists the top 20 states based on actual wind electricity generation in 2015 divided by total in-state electricity generation in 2015. Iowa leads the list, with 31.3% wind penetration, followed by South Dakota (25.5%) and Kansas (23.9%). A total of twelve states have achieved wind penetration levels of 10% or higher.

⁹ Wind energy penetration can either be expressed as a percentage of in-state load or in-state generation. In-state generation is used here, primarily because wind energy (like other energy resources) is often sold across state lines, which tends to distort penetration levels expressed as a percentage of in-state load. Also note that by focusing on generation in 2015, Table 2 does not fully capture the impact of new wind power capacity added during 2015 (particularly if added towards the end of the year).

Ins	stalled Ca _l	Percentage of				
	In-State Generation					
Annual (20)15)	Cumulative (er	nd of 2015)	Actual (2015)*		
Texas	3,615	Texas	17,711	Iowa	31.3%	
Oklahoma	1,402	Iowa	6,209	South Dakota	25.5%	
Kansas	799	California	5,662	Kansas	23.9%	
Iowa	524	Oklahoma	5,184	Oklahoma	18.4%	
Colorado	399	Illinois	3,842	North Dakota	17.7%	
Illinois	274	Kansas	3,764	Minnesota	17.0%	
New Mexico	268	Minnesota	3,235	Idaho	16.2%	
North Dakota	258	Oregon	3,153	Vermont	15.4%	
Minnesota	200	Washington	3,075	Colorado	14.2%	
California	194	Colorado	2,965	Oregon	11.3%	
South Dakota	175	North Dakota	2,143	Maine	10.5%	
Maine	173	Indiana	1,895	Texas	10.0%	
Indiana	150	New York	1,749	Nebraska	8.0%	
Nebraska	80	Michigan	1,531	Wyoming	7.7%	
Arizona	30	Wyoming	1,410	Montana	6.6%	
Maryland	30	Pennsylvania	1,340	Washington	6.5%	
New Hampshire	14	New Mexico	1,080	New Mexico	6.3%	
Ohio	8	South Dakota	977	California	6.2%	
Connecticut	5	Idaho	973	Hawaii	6.1%	
New York	1	Nebraska	890	Illinois	5.5%	
Rest of U.S.	0	Rest of U.S.	5,203	Rest of U.S.	1.0%	
TOTAL	8,598	TOTAL	73,992	TOTAL	4.7%	

Table 2. U.S. Wind Power Rankings: the Top 20 States

Source: AWEA project database, EIA

The first commercial offshore turbines are expected to be commissioned in the United States in 2016 amid mixed market signals

At the end of 2015, global cumulative offshore wind power capacity stood at roughly 12,000 MW (Navigant 2016a), with Europe continuing as the primary center of activity. Navigant (2016a) reports more than 3,500 MW of new offshore wind capacity being commissioned in 2015, with more than 3,000 MW under construction at the end of 2015.

The 30 MW Block Island project, developed by Deepwater Wind, began construction in 2015. All five jacket foundations were installed in 2015 and cable installation was expected to be complete by June 2016. Once installed, the project will consist of five GE Haliade 6 MW offshore wind turbines. The project is expected to be commissioned by the end of 2016, becoming the first commercial offshore wind power plant to operate in the United States.

 $^{^{*}}$ Based on 2015 wind and total generation by state from EIA's *Electric Power Monthly*.

¹⁰ Various data sources report different figures, in part due to differing perspectives on when to consider a project "completed."

A number of other high-profile projects have run into legal and political headwinds:

- National Grid and NSTAR canceled their power purchase agreements (PPA) with the 468 MW Cape Wind project after it failed to meet contractual deadlines. The Bureau of Ocean Energy Management (BOEM) approved the project's application to suspend the 28-year operations term of its offshore area lease, but denied the project's request to stop its annual lease payments (Hopper 2015). The Massachusetts Energy Facilities Siting Board denied Cape Wind's request for permit extension for its electricity transmission lines in April 2016.
- New Jersey passed the Offshore Wind Economic Development Act in 2010, creating a program for offshore renewable energy credits. However, as of the end of 2015, the New Jersey Board of Public Utilities (BPU) had twice rejected the 25 MW **Fishermen's Energy Atlantic City Windfarm's** application for the state's Offshore Renewable Energy Credit program. The State Supreme Court subsequently upheld the decision of the BPU. Fishermen's Energy continues to face roadblocks; legislative efforts to allow the project to reapply for BPU approval were vetoed by the governor. In 2012, DOE selected Fishermen's Energy as one of seven demonstration projects to receive \$4 million in funding, and chose it as one of three projects eligible for an additional \$46.7 million in funding in 2014. That eligibility was renewed in 2016 upon evaluation of the project against established milestones.
- Dominion Virginia Power announced that it would delay the 12 MW Virginia Offshore Wind Technology Advancement Project (VOWTAP) after initial bids for construction came in at 63%-74% above initial estimates. A second round of bidding reduced the cost of the project to 30%-65% above the initial estimate. BOEM approved a research lease for the project in March 2016. DOE chose VOWTAP as one of seven offshore projects (including Fishermen's Energy) to receive \$4 million in 2012 and, in 2014, up to an additional \$46.7 million in funding. However, DOE withdrew the offer in May 2016 upon evaluation of the project, determining that VOWTAP could not guarantee commissioning prior to 2020.

The high cost of offshore wind coupled with the complex regulatory environment serve as key challenges for the U.S. offshore wind industry. The mechanisms for planning, siting, and permitting offshore wind projects are fragmented, requiring developers to engage with multiple local, state, and federal agencies and stakeholders. Furthermore, regulatory processes to secure site control and construction authorization are mostly decoupled from offtake agreements that support the economics of an offshore wind project. U.S. developers with competitive lease auctions must separately negotiate PPAs, which increases uncertainty relative to European markets. Meanwhile, due to the lack of sufficient policy support to cover the high cost of offshore wind in most states, offtake agreements and financing have been hard to obtain. NREL estimates that the levelized cost of fixed-bottom offshore wind energy in 2014 was \$193/MWh in the United States (Moné et al. 2015).

Despite these challenges, the United States remains interested in offshore wind project development. Key drivers include the close proximity of offshore wind resources to population centers, which could address transmission congestion, the potential for local economic development benefits, and superior capacity factors and larger potential project sizes compared to limited developable land-based wind resources in some coastal regions.

¹¹ The initial projection for VOWTAP was \$230 million, the first round of bidding came in at \$375-400 million, and the second round of bidding came in at \$300-380 million.

Policy support for offshore wind originates in state initiatives and policies as well as federal incentives and programs. Of those states with RPS requirements, Maryland, New Jersey, and Maine have offshore-specific carve-out mandates or goals. At the federal level, the recent extension of the PTC and ITC may help support offshore projects that are able to meet the relevant deadlines. In addition, federal support in the form of regulatory approvals and technology investment is boosting commercial interest. BOEM had granted five leases for sites in Rhode Island, Massachusetts, Maryland, and Virginia as of the end of 2015. In 2015, BOEM issued four additional leases from competitive auctions for offshore wind areas in Massachusetts and New Jersey. In January 2015, the Massachusetts auction received bids for two of the four available zones, potentially adding up to 1.4 GW of offshore development. In November 2015, the New Jersey auction resulted in two lease areas totaling more than 3 GW of announced potential offshore wind power. Further competitive leases are planned in New York, North Carolina, and South Carolina.

DOE has also made significant investments in offshore wind energy, including funding for advanced technology demonstration partnerships. In 2012, DOE launched the Offshore Wind Advanced Technology Demonstration program by selecting seven offshore demonstration projects to receive up to \$4 million to complete engineering, design, and permitting phases of development. In 2014, DOE selected three innovative projects from the seven demonstration projects for additional federal funding of \$6.7 million each to finalize the initial development phase. These three projects, Dominion Power's VOWTAP (12 MW, Virginia), Principle Power's WindFloat Pacific (up to 30 MW, Oregon), and Fishermen's Energy Atlantic City Windfarm (at least 24 MW, New Jersey), also received eligibility to receive up to \$40 million in funding for future phases. In addition, DOE selected two alternate projects, University of Maine's 12 MW Aqua Ventus project in Maine and Lake Erie Energy Development Corporation's 18 MW Icebreaker Project in Ohio, to receive \$3 million each to complete the engineering designs of their technology concepts.

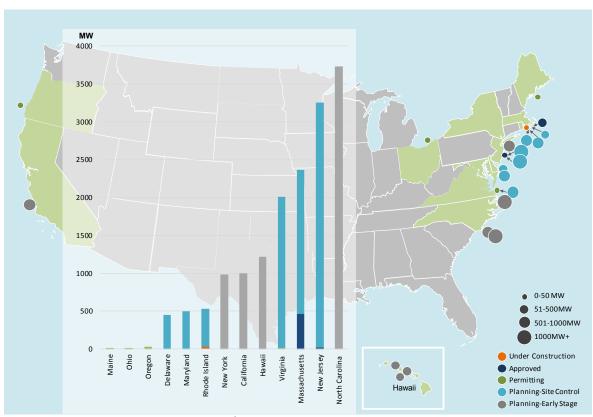
In May 2016, DOE decided that Principle Power's WindFloat Pacific project in Oregon and Dominion's VOWTAP in Virginia would no longer be eligible for the funding due to their inability to guarantee project milestones. Instead, DOE selected the two alternate projects in Maine and Ohio to receive the additional funding as part of the demonstration program.

Figure 6 identifies 23 proposed offshore wind projects in the United States in various stages of development. These projects total more than 16 GW of potential capacity, of which approximately 10 GW have obtained site control through leases or determinations of no competitive interest. ¹⁴ The proposed projects are primarily located in the Northeast and Mid-Atlantic, with one project each in the Great Lakes, Pacific Northwest, and California. Developers have also filed lease requests to BOEM for three areas in Hawaii in 2015 and 2016.

¹² The potential capacity for the two lease areas is based on announced estimated capacity by the developers, Offshore MW LLC (400 MW) and DONG Energy (1000 MW).

¹³ The potential capacity of 3 GW is based on the announced capacity by DONG Energy (1000 MW) and estimates by NREL for US Wind's lease area (2230 MW).

¹⁴ A project reaches the site control phase when the developer obtains exclusive development rights to a site.



Note: Capacities of projects are based on owner/developer announced capacity. In cases where announced capacity is unavailable, the capacity refers to the estimated maximum potential, which assumes an average capacity density of 3 MW/ km² based on spacing of 9 to 10 rotor diameters developed. For methodology of estimated maximum potential, please refer to Musial et al. (2013a, 2013b). For definitions of the different stages of development, please refer to Smith et al. (2015).

Figure 6. Offshore wind power projects under development in the United States as of June 2016

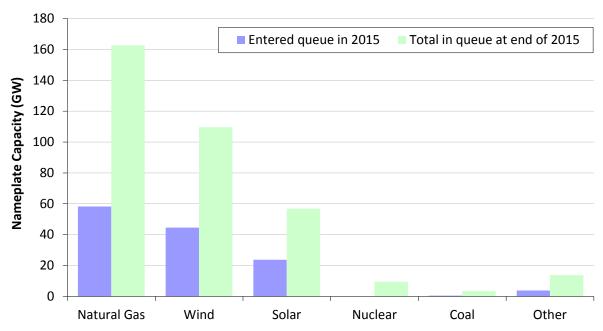
Of the projects identified in Figure 6, Deepwater Wind's Block Island project off the coast of Rhode Island is the only one that has a PPA. Achievement of this milestone enabled the project to close financing and to begin construction in spring 2015. Other projects are working with regulators to finalize design, secure permits, and/or establish power sales agreements. The recent challenges highlighted above suggest that the schedules for these projects are subject to uncertainty.

Data from interconnection queues demonstrate that a substantial amount of wind power capacity is under consideration

One testament to the continued interest in land-based wind energy is the amount of wind power capacity currently working its way through the major transmission interconnection queues across the country. Figure 7 provides this information for wind power and other resources aggregated across 34 different interconnection queues administered by independent system operators (ISOs), regional transmission organizations (RTOs), and utilities. ¹⁵ These data should be interpreted with

¹⁵ The queues surveyed include PJM Interconnection (PJM), Midcontinent Independent System Operator (MISO), New York ISO (NYISO), ISO-New England (ISO-NE), California ISO (CAISO), Electric Reliability Council of Texas (ERCOT), Southwest Power Pool (SPP), Western Area Power Administration (WAPA), Bonneville Power

caution: placing a project in the interconnection queue is a necessary step in project development, but being in the queue does not guarantee that a project will be built. Efforts have been made by FERC, ISOs, RTOs, and utilities to reduce the number of speculative projects that have clogged these queues in past years. One consequence of those efforts is that the total amount of wind power capacity in the nation's interconnection queues has declined dramatically since 2009.



Source: Exeter Associates review of interconnection queues

Figure 7. Generation capacity in 34 selected interconnection queues, by resource type

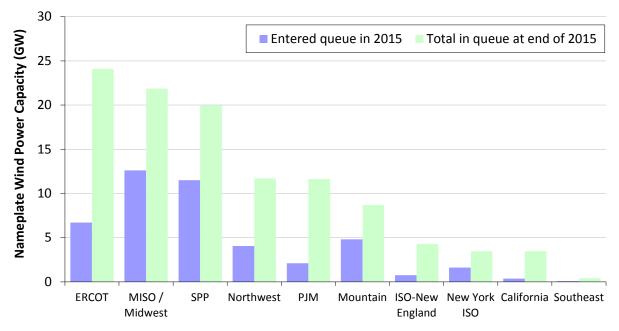
Even with this important caveat, the amount of wind capacity in the nation's interconnection queues still provides at least some indication of the amount of planned development. At the end of 2015, there were 110 GW of wind power capacity within the interconnection queues reviewed for this report—almost one-and-a-half times the installed wind power capacity in the United States. This 110 GW is an increase from the end of 2014 (96 GW), and represented 31% of all generating capacity within these selected queues at that time, higher than all other generating sources except for natural gas. In 2015, 45 GW of wind power capacity entered the interconnection queues, compared to 58 GW of natural gas and 24 GW of solar. The 45 GW of new wind capacity entering the queues in 2015 is the largest annual sum since 2010.

Of note, however, is that the total amount of wind, coal, and nuclear power in the sampled interconnection queues (considering gross additions and project drop-outs) has generally declined in recent years, whereas natural gas and solar capacity has increased or held steady.

Administration (BPA), Tennessee Valley Authority (TVA), and 24 other individual utilities. To provide a sense of sample size and coverage, the ISOs, RTOs, and utilities whose queues are included here have an aggregated non-coincident (balancing authority) peak demand of about 88% of the U.S. total. Figures 7 and 8 only include projects that were active in the queue at the end of 2015 but that had not yet been built; suspended projects are not included.

Since 2009, for example, the amount of wind power capacity has dropped by 64%, coal by 89%, and nuclear by 67%, whereas solar capacity has increased by 68% and natural gas by 47%.

The wind capacity in the interconnection queues is spread across the United States, as shown in Figure 8, with larger amounts in ERCOT (22%), the Midwest (20%), Southwest Power Pool (SPP) (18%), the Northwest (11%), and the PJM Interconnection (11%). Somewhat smaller amounts are found in the Mountain region (8%), ISO-New England (4%), New York ISO (3%), California (3%), and the Southeast (0.5%).



Source: Exeter Associates review of interconnection queues

Figure 8. Wind power capacity in 34 selected interconnection queues, by region

As a measure of the near-term development pipeline, ABB (2016) estimates that—as of June 2016—approximately 29 GW of wind power capacity could be characterized in one of three ways: (a) under construction or in site preparation (8 GW); (b) in development and permitted (11 GW); or (c) in development with a pending permit and/or regulatory applications (9 GW). These totals are similar to last year at approximately the same time (June 2015), indicating that the development pipeline remains strong. AWEA (2016b), meanwhile, reports that more than 15 GW of wind power capacity was under construction or at an advanced stage of development at the end of the first quarter of 2016. Supporting these figures, EIA (2016c) reports over 15 GW of planned wind power additions for 2016 and 2017.

3. Industry Trends

GE and Vestas captured 73% of the U.S. wind power market in 2015

Of the 8,598 MW of wind installed in 2015, 40% (3,468 MW) deployed turbines from GE Wind, with Vestas coming in second (2,870 MW, 33% market share), followed by Siemens (1,219 MW, 14%) (Figure 9 and Table 3). ¹⁶ Other suppliers included Acciona (465 MW), Gamesa (402 MW), Nordex (138 MW), Sany (20 MW), and Goldwind (8 MW). Some recent OEM consolidation has also occurred, with Nordex merging with Acciona, GE acquiring Alstom, and more recently in mid-2016, Siemens merging with Gamesa.

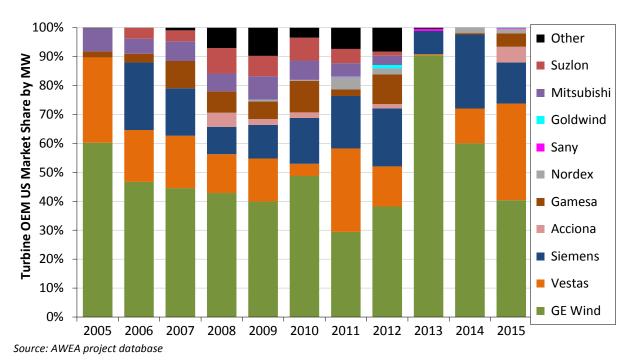


Figure 9. Annual U.S. market share of wind turbine manufacturers by MW, 2005–2015

According to Navigant (2016a), Goldwind and Vestas were the top two suppliers of turbines worldwide in 2015, followed by GE, Siemens, and Gamesa. On a worldwide basis, Chinese turbine manufacturers continued to occupy positions of prominence, with five of the top 10 spots in the ranking; to date, however, the growth of Chinese turbine manufacturers has been based almost entirely on sales to the Chinese market (though both Goldwind and Sany turbines were installed in the U.S. in 2015, with a limited number of Chinese turbines also installed in earlier years). Other than GE, no other U.S.-owned utility-scale turbine manufacturer plays a meaningful role in global or U.S. large-wind-turbine supply.

¹⁶ Market share is reported in MW terms and is based on project installations in the year in question.

Manufacturer	Turbine Installations (MW)										
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
GE Wind	1,431	1,146	2,342	3,585	3,995	2,543	2,006	5,016	984	2,912	3,468
Vestas	699	439	948	1,120	1,489	221	1,969	1,818	4	584	2,870
Siemens	0	573	863	791	1,162	828	1,233	2,638	87	1,241	1,219
Acciona	0	0	0	410	204	99	0	195	0	0	465
Gamesa	50	74	494	616	600	566	154	1,341	0	23	402
Nordex	0	0	3	0	63	20	288	275	0	90	138
Sany	0	0	0	0	0	0	10	2	8	0	20
Goldwind	0	0	0	0	5	0	5	155	0	0	8
Mitsubishi	190	128	356	516	814	350	320	420	0	0	0
Suzlon	0	92	198	738	702	413	334	187	0	0	0
Other	4	2	50	587	973	180	502	1,086	4	2	2
TOTAL	2,374	2,457	5,253	8,362	10,005	5,216	6,820	13,131	1,087	4,854	8,598

Table 3. Annual U.S. Turbine Installation Capacity by Manufacturer

Source: AWEA project database

The manufacturing supply chain continued to adjust to swings in domestic demand for wind equipment

As the cumulative capacity of U.S. wind projects has grown over the last decade, foreign and domestic turbine equipment manufacturers have localized and expanded operations in the United States. Yet, the wind industry's domestic supply chain continues to deal with conflicting pressures: an upswing in near- to medium-term expected growth, but also strong international competitive pressures and possible reduced demand over time as the PTC is phased down. As a result, though many manufacturers increased the size of their U.S. workforce in 2015, market expectations for significant supply-chain expansion have become more pessimistic.

Figure 10 presents a non-exhaustive list of the more than 145 wind turbine and component manufacturing and assembly facilities operating in the United States at the end of 2015, focusing on the utility-scale wind market. ¹⁷ Figure 11 segments those facilities by major component.

Only one new wind-related manufacturing facility opened in 2015: MM Composite, a composite parts manufacturer that had previously operated solely within the Siemens Fort Madison, Iowa blade facility. Located in Mount Pleasant, Iowa, the new facility will allow MM Composites to increase its overall workforce. Also announced in 2015 was a planned 2016 opening of a tower manufacturing facility in Amarillo, Texas by GRI Renewables. That facility is expected to employ up to 300 workers and manufacture up to 400 towers annually when it reaches full

¹⁷ The data on existing, new, and announced manufacturing facilities presented here differ from those presented in AWEA (2016a) due, in part, to methodological differences. For example, AWEA includes data on a large number of smaller component suppliers that are not included in this report; the figure presented here also does not include research and development and logistics centers, or materials suppliers. As a result, AWEA (2016a) reports a much larger number of wind-related manufacturing facilities, over 500 in total.

production. At the same time, at least three existing wind turbine or component manufacturing facilities were consolidated, closed, or stopped serving the industry in 2015.

Notwithstanding the recent supply chain consolidation and slow additions of new facilities, there remain a large number of domestic manufacturing facilities. Additionally, several manufacturers either expanded their workforce in 2015 to meet demand (e.g., Vestas, LM Windpower, MFG Aberdeen), remodeled facilities to meet industry standards (e.g., LM Windpower,), or began expansions of existing facilities (e.g., Vestas, MFG Aberdeen). As also shown in Figure 10, turbine and component manufacturing facilities are spread across the country. Many manufacturers have chosen to locate in markets with substantial wind power capacity or near already established large-scale original equipment manufacturers (OEMs). However, even states that are relatively far from major wind power markets have manufacturing facilities. Most states in the Southeast, for example, have wind manufacturing facilities despite the fact that there are few wind power projects in that region. Workforce considerations, transportation costs, and state and local incentives are among the factors that typically drive location decisions.

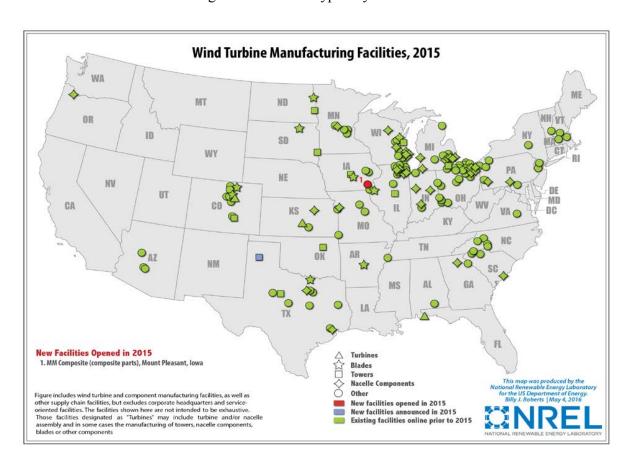
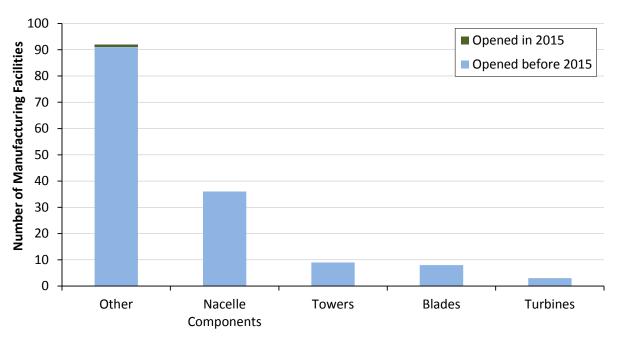


Figure 10. Location of existing and new turbine and component manufacturing facilities

Among the many other facets of the domestic supply chain, in 2010, 9 of the 11 wind turbine OEMs with the largest shares of the U.S. market owned at least one domestic manufacturing

facility (Acciona, Clipper, DeWind, Gamesa, GE, Nordex, Siemens, Suzlon, and Vestas). Since that time, a number of these facilities have been closed, in part reflecting the increased concentration of the U.S. wind industry among the three top OEMs, demand uncertainty, and a desire to consolidate production at centralized facilities overseas in order to gain economies of scale. For example, though no final decision has been announced regarding Alstom's Amarillo, Texas facility, the plant was idled when the GE/Alstom merger was announced. Similarly, the Nordex/Acciona merger has left the future of the Acciona West Branch, Iowa facility in question. The plant is currently idled. Nonetheless, the three major OEMs active in the U.S. market (GE, Vestas, Siemens) still had one or more operating manufacturing facilities in the United States at the end of 2015. In contrast, a decade earlier (2004), there was only one active utility-scale wind energy OEM assembling nacelles in the United States (GE).



Note: Manufacturing facilities that produce multiple components are included in multiple bars. "Other" includes facilities that produce items such as: enclosures, power converters, slip-rings, inverters, electrical components, tower internals, climbing devices, couplings, castings, rotor hubs, plates, walkways, doors, bearing cages, fasteners, bolts, magnetics, safety rings, struts, clamps, transmission housings, embed rings, electrical cable systems, yaw/pitch control systems, bases, generator plates, slew bearings, flanges, anemometers, and template rings.

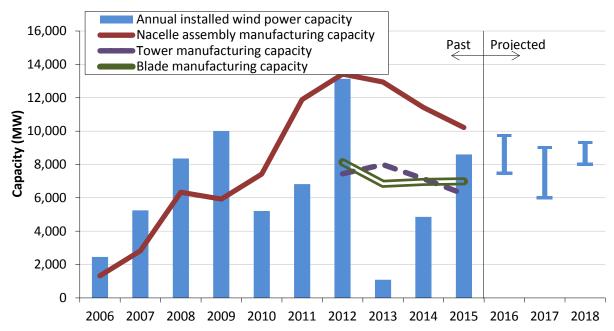
Source: National Renewable Energy Laboratory

Figure 11. Number of operating wind turbine and component manufacturing facilities in the U.S.

In aggregate, domestic turbine nacelle assembly capability—defined here as the "maximum" nacelle assembly capability of U.S. plants if all were operating at maximum utilization—grew from less than 1.5 GW in 2006 to more than 13 GW in 2012, before dropping to roughly 10 GW in 2015 (Figure 12; Bloomberg NEF 2015a, AWEA 2016a). In addition, AWEA (2016a) reports that U.S. manufacturing facilities have the capability to produce 10,500 individual blades (~7 GW) and more than 3,100 towers (~6.2 GW) annually. Figure 12 contrasts this

¹⁸ Nacelle assembly is defined here as the process of combining the multitude of components included in a turbine nacelle to produce a complete turbine nacelle unit.

equipment manufacturing capability with past U.S. wind additions as well as near-term forecasts of future U.S. installations (see Chapter 9, "Future Outlook"). It demonstrates that domestic manufacturing capability for blades, towers, and nacelle assembly is reasonably well balanced against anticipated near-term market demand. Such comparisons should be made with care, however, because maximum factory utilization is uncommon, and because turbine imports into and exports from the United States also impact the balance of supply and demand.



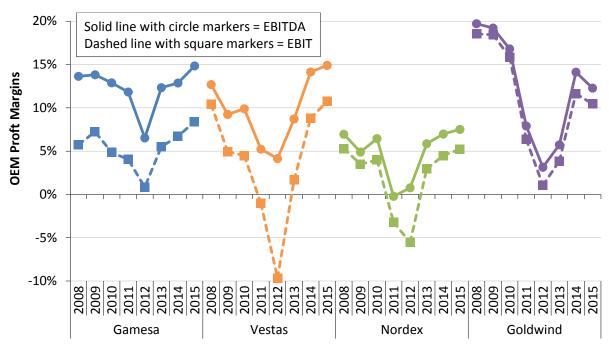
Source: AWEA, Bloomberg NEF, EIA, IHS, Navigant, MAKE, UBS, Berkeley Lab

Figure 12. Domestic wind manufacturing capability vs. U.S. wind power installations

Fierce competition throughout the supply chain has caused many manufacturers to execute cost-cutting measures globally and domestically in recent years. As a result of these cost savings, coupled with booming demand, the profitability of turbine OEMs has generally rebounded over the last three years, after a number of years in decline (Figure 13). Moreover, with recent and near-term expected continued strong growth in U.S. wind installations, wind-related job totals in the U.S. reached a new all-time high in 2015. AWEA (2016a) estimates that the wind industry employed 88,000 full-time workers in the United States at the end of 2015—an increase of more than 15,000 from the end of 2014. The 88,000 jobs include, among others, those in the manufacturing and supply chain (~21,000); construction, development, and transportation (~38,000); and plant operations (~19,000). Consistent with the growth in wind power construction activity, the largest increase from 2014 to 2015 was seen in the construction, development, and transportation category.

¹⁹ Figure 13 only reports data for those OEMs that are "pure-play" wind turbine manufacturers. GE and Siemens—among the largest turbine suppliers in the U.S. market (along with Vestas)—are not included because they are multinational conglomerates that do not report segmented financial data for their wind turbine divisions. Figure 13 depicts both EBIT (i.e., "earnings before interest and taxes," also referred to as "operating profit") and EBITDA (i.e., "earnings before interest, taxes, depreciation, and amortization") margins.

Jobs are reported as full-time equivalents. For example, two people working full-time for 6 months are equal to one full-time job in that year.



Note: EBITDA = earnings before interest, taxes, depreciation and amortization

Source: OEM annual reports and financial statements

Figure 13. Turbine OEM global profitability over time

Domestic manufacturing content is strong for some wind turbine components, but the U.S. wind industry remains reliant on imports

The U.S. wind sector is reliant on imports of wind equipment, though the level of dependence varies by component: some components have a relatively high domestic share, whereas other components remain largely imported. These trends are revealed, in part, by data on wind power equipment trade from the U.S. Department of Commerce.²¹

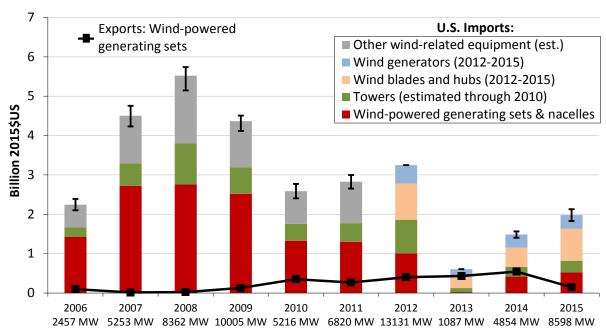
Figure 14 presents data on the dollar value of estimated imports to the United States of wind-related equipment that can be tracked through trade codes. Specifically, the figure shows imports of wind-powered generating sets and nacelles (i.e., nacelles with blades, nacelles without blades, and, when imported as part of the same transaction, other turbine components) as well as imports of select turbine components that are shipped separately from the generating sets and nacelles. The selected wind turbine components included in the figure consist only of those that can be tracked through trade codes: towers, generators (and generator parts), and blades and hubs.

Import estimates should be viewed with particular caution because the underlying data used to produce the Figure 14 are based on trade categories that are not all exclusive to wind energy (e.g., they could include generators for non-wind applications). Some of the import estimates

²¹ See the appendix for further details on data sources and methods used in this section, including the specific trade codes considered.

²² Wind turbine components such as blades, towers, and generators are included in the data on wind-powered generating sets and nacelles if shipped in the same transaction. Otherwise, these component imports are reported separately.

shown in Figure 14 therefore required assumptions about the fraction of larger trade categories likely to be represented by wind turbine components. The error bars in Figure 14 account for uncertainty in these assumed fractions. In 2012 and 2013, all trade categories shown were either specific to or largely restricted to wind power, and so no error bars are shown. After 2013, only nacelles (when shipped alone) are included in a trade category that is not largely exclusive to wind, and so the error bars shown for 2014 and 2015 only reflect the uncertainty in nacelle imports. More generally, as noted earlier, Figure 14 excludes comprehensive data on the import of wind equipment, as not all such equipment is clearly identified in trade categories. The impact of this omission on import and domestic content is discussed later.



Source: Berkeley Lab analysis of data from USITC DataWeb: http://dataweb.usitc.gov

Figure 14. Estimated imports of wind-powered generating sets, towers, generators, and blades and hubs, as well as exports of wind-powered generating sets and towers and lattice masts

As shown, the estimated imports of tracked wind-related equipment into the United States substantially increased from 2006–2008, before falling through 2010, increasing somewhat in 2011 and 2012, and then dropping sharply in 2013 with the simultaneous drop in U.S. wind installations. In 2014 and 2015, as U.S. wind installations bounced back, so did imports of wind-related turbine equipment. These overall trends are driven by a combination of factors: changes in the share of domestically manufactured wind turbines and components (versus imports), changes in the annual rate of wind power capacity installations, and changes in wind turbine prices. Because imports of wind turbine component parts occur in additional, broad trade categories different from those included in Figure 14, the data presented here understate the aggregate amount of wind equipment imports into the United States.

Figure 14 also shows that exports of wind-powered generating sets from the United States have generally increased over time, rising from just \$16 million in 2007 to \$544 million in 2014. The year 2015 was a notable exception to this trend, however, with exports falling to \$149 million. The largest destination markets for these exports over the entire 2006–2015 timeframe were

Canada (60%) and Brazil (27%); 2015 exports were also dominated by Canada (52%) and Brazil (19%). U.S. exports of 'towers and lattice masts' in 2015 totaled an additional \$63 million (down from a peak of \$170 million in 2012), with 41% of these exports going to Canada and 28% going to Uruguay. The trade data for tower exports do not differentiate between tubular towers (primarily used in wind power applications) and other types of towers, unlike the import classification for towers from 2011–2015, which does differentiate. Although some of the tower exports are wind-related, the exact proportion is not known. Other wind turbine component exports are not reported because such exports are likely a small and/or uncertain fraction of broader trade category totals. Despite overall growth in exports from 2007 to 2014, the United States remained a sizable net importer of wind turbine equipment over this period. The sharp decrease in exports in 2015 may indicate that the fast-rising U.S. wind market absorbed much of the local production of wind turbine equipment.

Figure 15 shows the total value of selected, tracked wind-specific imports to the United States in 2015, by country of origin, as well as the main "districts of entry"²³: forty percent of the import value in 2015 came from Asia (led by China), 38% from Europe (led by Spain), and 22% from the Americas (led by Brazil). The principal districts of entry for this wind equipment were Houston-Galveston, TX (29%), Great Falls, MT (16%), and Laredo, TX (9%).

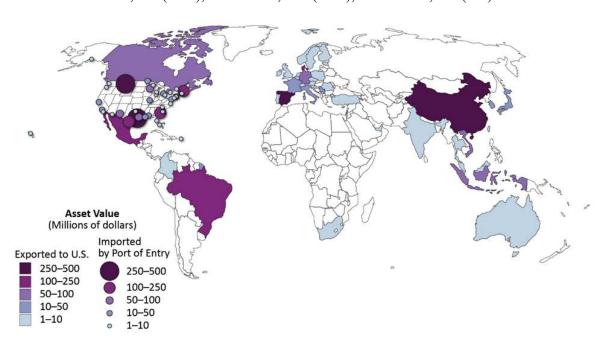
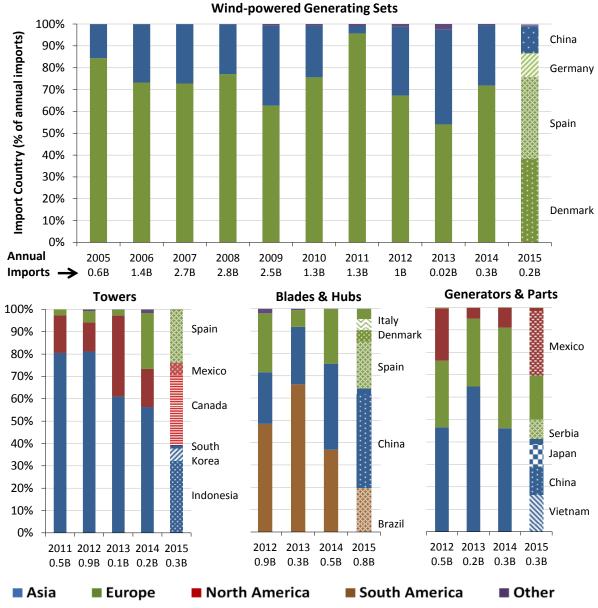


Figure 15. Summary map of tracked wind-specific imports in 2015: countries of origin and U.S. districts of entry

²³ The trade categories included here are all of the wind-specific import categories for 2015 (see the appendix for details), and so the 2015 total import volume considered in Figure 15 differs from that in Figure 14. As noted earlier, imports of many wind turbine component parts occur in broad trade categories not captured by those included in this analysis; additionally, in the case of nacelles without blades, the trade code is not exclusive to wind and so related imports are not included in Figure 15 (though they are included in Figure 14). As such, the data presented in Figure 15 understate the aggregate amount of wind equipment imports into the United States. Note also that "districts of entry" as used here refers to, in some cases, multiple points of entry located in the same geographic region; note also that goods may arrive at districts of entry by land, air, or sea.

Looking behind the import data in more detail, and focusing on those trade codes that are largely exclusive to wind equipment, Figure 16 shows a number of trends over time in the origin of U.S. imports of wind-powered generating sets, tubular towers, wind blades and hubs, and wind generators and parts.



Source: Berkeley Lab analysis of data from USITC DataWeb: http://dataweb.usitc.gov

Figure 16. Origins of U.S. imports of selected wind turbine equipment

For wind-powered generating sets, the primary source markets during 2005–2015 have been Europe and—to a lesser extent—Asia, with leading countries largely being those that are home to the major international turbine manufacturers: Denmark, Spain, Japan, India, and Germany. In 2015, imports of wind-powered generating sets were dominated by Denmark, Spain, Germany,

and China, though the total import value was relatively low (\$227 million). The share of imports of tubular towers from Asia was over 80% in 2011 and 2012 (almost 50% from China), with much of the remainder from Canada and Mexico. From 2013-2015, not only did the total import value decline relative to earlier years, but there were almost no imports from China and Vietnam—likely a result of the tariff measures that were imposed on wind tower manufacturers from these countries. Tower imports in 2015 came from a mix of countries from Asia (e.g., Indonesia and South Korea), Europe (e.g., Spain), and North America (e.g., Canada and Mexico). With regards to wind blades and hubs, China, Spain, and Brazil dominate as source markets (various other European countries play a somewhat lesser role), with China steadily increasing its market share over time. Finally, the import origins for wind-related generators and generator parts were distributed across a number of largely Asian and European countries, in addition to Mexico, from 2012 through 2015.

Because trade data do not track all imports of wind equipment, it is not possible to use those data to establish a clear overall distinction between import and domestic content. The trade data also do not allow for a precise estimate of the domestic content of specific wind turbine components. Nonetheless, based on those data and a variety of assumptions, Table 4 presents rough estimates of the domestic content for a subset of the major wind turbine components used in U.S. wind power projects in 2015. As shown, domestic content is strong for large, transportation-intensive components such as towers, blades and hubs, and nacelle assembly.

Table 4. Approximate Domestic Content of Major Components in 2015

Towers	Blades & Hubs	Nacelle Assembly
80-85%	50-70%	> 85% of nacelle assembly

These figures, however, understate the wind industry's reliance on turbine and component imports. This is because significant wind-related imports occur under trade categories not captured in Table 4, including wind equipment (such as generator, mainframe, converter, pitch and yaw systems, main shaft, bearings, bolts, controls) and manufacturing inputs (such as foreign steel and oil used in domestic manufacturing). ²⁴

An alternative interview-based approach to estimating domestic content indicates overall domestic content of all wind turbine equipment used in the United States of about 40% in 2012. When considering balance-of-plant costs as well, overall project-level domestic content in 2012 reached roughly 60%. These interviews further revealed that domestic content is relatively high for blades, towers, nacelle assembly and nacelle covers, supporting the more recent analysis presented in Table 4. The domestic content of most of the equipment internal to the nacelle—much of which is not specifically tracked in wind-specific trade data—is considerably lower, typically well below 20%. ²⁵

²⁴ On the other hand, this analysis also assumes that all components imported into the United States are used for the domestic market and not used to assemble wind-powered generating sets that are exported from the United States. If this were not the case, the resulting domestic fraction would be higher than that presented here.

²⁵ The interviews and analysis were conducted by GLWN, under contract to Berkeley Lab.

The project finance environment remained strong in 2015

Most of the financing deals that closed in 2015 stemmed from the Tax Increase Prevention Act of 2014, which in late December 2014 extended the PTC's "construction start" deadline for one additional year, from the end of 2013 to the end of 2014 (effectively providing developers with just two weeks during which to start construction in order to qualify for the PTC). Subsequently, in March 2015, the IRS extended its safe harbor guidance for another year as well, enabling wind projects that had met the end-of-2014 construction start deadline to qualify for the PTC (without having to prove continuous effort) if online by the end of 2016.

As a result, 2015 was a big, somewhat rushed year for wind project finance. This was particularly true in the tax equity market, where project sponsors raised anywhere from \$5.9 billion (AWEA 2016a) to \$6.4 billion (Chadbourne & Parke 2016b) of new tax equity in 2015—up slightly from \$5.7-\$5.8 billion in 2014 and the largest single-year amount on record. On the debt side, AWEA (2016a) reports that 2,078 MW of new and existing wind capacity raised \$2.9 billion in debt in 2015, up from the \$2.2 billion raised in 2014, but well below the higher levels seen in previous years when the Section 1603 grant was available. Given the short lead time with the December 2014 PTC extension, most of the projects financed in 2015 will achieve commercial operations in 2016.

As shown in Figure 17, tax equity yields drifted slightly lower in 2015, to just below 8% on an after-tax unlevered basis. Debt interest rates bounced around somewhat, but ultimately headed lower throughout the year, with the 15-year benchmark fixed all-in interest rate starting off 2016 below 4% (~2.5% on a post-tax basis²⁷) for the first time in the more-than-eleven-year history of the graph. As a result, the spread between tax equity yields and 15-year term debt (on a post-tax basis) stood at more than 5% as of May 2016—its highest level since 2009. The intransigence of this spread continues to vex those wind project owners that lack tax appetite, and so must finance their projects with relatively expensive tax equity rather than increasingly cheap debt (Chadbourne & Parke 2016a). Partnership flip structures²⁸ remained the dominant tax equity vehicle, while banks continued to focus more on shorter-duration loans (7–10 year mini-perms

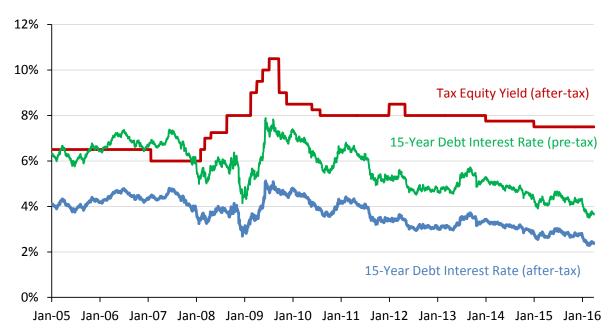
_

²⁶ From 2009–2012 (i.e., the years in which the Section 1603 grant was available), some project sponsors who lacked tax appetite financed their projects using the grant in combination with project-level term debt, carrying forward depreciation losses as necessary and foregoing tax equity altogether. With the grant no longer available, most projects now elect the PTC (instead of the ITC), and rely upon third-party tax equity investors to monetize the losses and credits. Because most tax equity investors will not allow leverage on projects in which they invest (Chadbourne & Parke 2016a, 2016b), the expiration of the Section 1603 grant for wind and the correspondingly greater reliance on the PTC could be a contributor to the decline in debt raised by new wind projects in 2013 through 2015.

²⁷ The returns of equity investors in renewable projects are often expressed on an after-tax basis, because of the significant value that federal tax benefits provide to such projects (e.g., after-tax returns can be higher than pre-tax returns). In order to accurately compare the cost of debt (which is quoted on a pre-tax basis) to tax equity (described in after-tax terms), one must convert the pre-tax debt interest rate to its after-tax equivalent (to reflect the tax-deductibility of interest payments) by multiplying it by 65%, or 100% minus an assumed marginal tax rate of 35%.

²⁸ A "partnership flip" is a project finance structure in which the developer or project sponsor partners with a third-party tax equity investor to jointly invest in and own the project. Initially, allocations of tax benefits are skewed heavily in favor the tax equity partner (which is able to efficiently monetize the tax benefits), but eventually "flip" in favor of the project sponsor partner once the tax benefits have been largely exhausted. Cash is also allocated between the partners, with one or more "flip" events, but in recent years has been increasingly directed towards the project sponsor to the extent possible, in order to support back leverage or dividend payments to YieldCo investors.

remained the norm²⁹), leaving longer-duration, fully amortizing loans to institutional lenders (Chadbourne & Parke 2016b).



Source: Federal Reserve Board (2016), Bloomberg NEF (2016e)

Figure 17. Cost of 15-year debt and tax equity for utility-scale wind projects over time

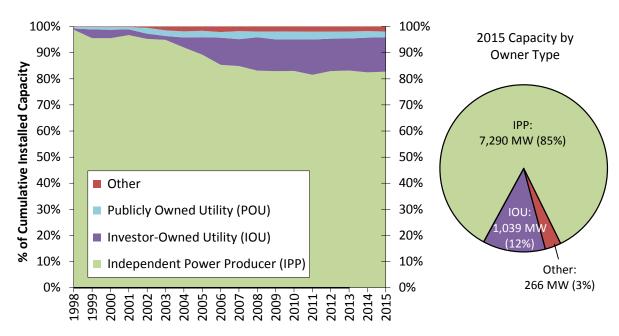
Looking ahead, financing in both the tax equity and debt markets is likely to remain active in 2016 and beyond, thanks to the five-year tax credit extension (with phase down) that became law in late December 2015 (see Chapter 8, Policy and Market Drivers, for more details on this long-term extension and phase-down). In May 2016, the IRS also increased the safe harbor window from two years to four years, effectively allowing a wind project that starts construction before the end of 2016 and achieves commercial operations before the end of 2020 to qualify for the PTC at full value. The tax credit will progressively diminish for projects that start construction in 2017-2019 (and that achieve commercial operations from 2021-2023), which suggests that 2016 and 2017 could represent the peak of project finance activity for the foreseeable future (see pages 68-69 for a lengthier discussion of the PTC phase down schedule).

IPPs own the vast majority of wind assets built in 2015

Independent power producers (IPPs) own 7,290 MW or 85% of the 8,598 MW of new wind capacity installed in the United States in 2015 (Figure 18). More than 1,000 MW are owned by investor-owned utilities (IOUs), including MidAmerican (502 MW), Xcel Energy (350 MW), Montana-Dakota Utilities (107.5 MW), and Northwestern Energy (80 MW), while publicly

²⁹ A "mini-perm" is a relatively short-term (e.g., 7–10 years) loan that is sized based on a much longer tenor (e.g., 15–17 years) and therefore requires a balloon payment of the outstanding loan balance upon maturity. In practice, this balloon payment is often paid from the proceeds of refinancing the loan at that time. Thus, a 10-year mini-perm might provide the same amount of leverage as a 17-year fully amortizing loan but with refinancing risk at the end of 10 years. In contrast, a 17-year fully amortizing loan would be repaid entirely through periodic principal and interest payments over the full tenor of the loan (i.e., no balloon payment required and no refinancing risk).

owned utilities (POUs) do not own any of the new wind power capacity brought online in 2015. Finally, 266 MW (3%) fall into the "other" category of projects owned by neither IPPs nor utilities (e.g., towns, schools, businesses, farmers); notably, IKEA owns most of this capacity (263 MW) through two wind projects – one in Illinois and one in Texas. ³⁰ Of the cumulative installed wind power capacity at the end of 2015, IPPs own 83% and utilities own 15% (13% IOU and 2% POU), with the remaining 2% falling into the "other" category.



Source: Berkeley Lab estimates based on AWEA project database

Figure 18. Cumulative and 2015 wind power capacity categorized by owner type

Long-term contracted sales to utilities remained the most common off-take arrangement, but direct retail sales gained ground

Electric utilities continued to be the dominant off-takers of wind power in 2015 (Figure 19), either owning (12%) or buying (48%) power from 60% of the new capacity installed last year (with the 60% split between 37% IOU and 23% POU). On a cumulative basis, utilities own (15%) or buy (53%) power from 68% of all wind power capacity installed in the United States (with the 68% split between 48% IOU and 20% POU).

Merchant/quasi-merchant projects accounted for 29% of all new 2015 capacity and 24% of cumulative capacity. Merchant/quasi-merchant projects are those whose electricity sales revenue is tied to short-term contracts and/or wholesale spot electricity market prices (with the resulting

³⁰ Many of the "other" projects, along with some IPP- and POU-owned projects, might also be considered "community wind" projects that are owned by or benefit one or more members of the local community to a greater extent than typically occurs with a commercial wind project. According to AWEA (2016a), just 16.9 MW (0.2%) of 2015 wind capacity additions qualified as community wind projects.

price risk commonly hedged over a 10- to 12-year period³¹) rather than being locked in through a long-term PPA.

Perhaps the biggest story of 2015 with respect to off-take agreements was the rise of direct retail purchasers of wind (and solar) power, including both corporate and non-corporate off-takers, which together are characterized in Figure 19 as "direct retail" off-takers. Though barely visible in the cumulative portion of Figure 19, direct retail purchases accounted for 844 MW or 10% of the new wind power capacity installed in the United States in 2015. This modest 10% portion is well below the 52% of total wind capacity contracted through PPAs in 2015 that involve non-utility buyers, as reported by AWEA (2016a). The difference is that the 10% pertains to projects that achieved commercial operation in 2015, whereas the 52% pertains to PPAs that were executed in 2015—in many cases for projects that will come online in 2016 or 2017 (or beyond). According to AWEA (2016a), this 52% is up from 23% in 2014 and just 5% in 2013, suggesting that the direct retail segment of Figure 19 should continue to expand in future years.

Power marketers are defined here to include commercial intermediaries that purchase power under contract and then resell that power to others. ³² Though power marketers were very active throughout the first decade of this century following the initial wave of electricity market restructuring, their influence has waned in recent years: just 6% of cumulative wind power capacity in the United States sells to power marketers, down from more than 20% in the early 2000s

Finally, just 3 MW (0.0%) of the wind power additions in 2015 that used turbines larger than 100 kW were interconnected on the customer side of the utility meter, with the power being consumed on site rather than sold.

³¹ Hedges are often structured as a "fixed-for-floating" power price swap—a purely financial arrangement whereby the wind power project swaps the "floating" revenue stream that it earns from spot power sales for a "fixed" revenue stream based on an agreed-upon strike price. For some projects, the hedge is structured in the natural gas market rather than the power market.

³² These intermediaries include the wholesale marketing affiliates of large IOUs, which may buy wind on behalf of their load-serving affiliates.

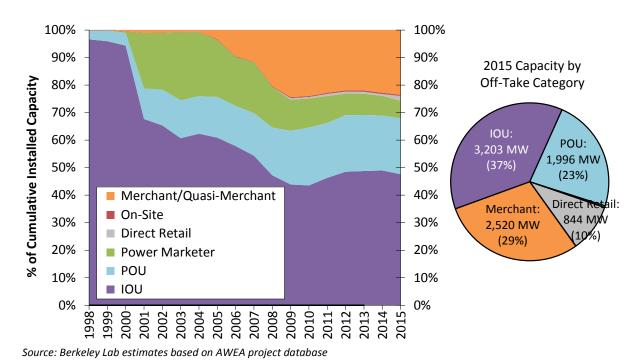


Figure 19. Cumulative and 2015 wind power capacity categorized by power off-take arrangement

4. Technology Trends

Turbine nameplate capacity, hub height, and rotor diameter have all increased significantly over the long term

The average nameplate capacity of the newly installed wind turbines in the United States in 2015 was 2.0 MW, up 180% since 1998–1999 (Figure 20). The average hub height of turbines installed in 2015 was 82.0 meters, up 47% since 1998–1999. Average rotor diameters have increased at a more rapid pace than hub heights in the United States, especially in recent years. The average rotor diameter of wind turbines installed in 2015 was 102.0 meters, up 113% since 1998–1999, which translates into a 355% growth in rotor swept area. These trends in hub height and rotor scaling are two of several factors impacting the project-level capacity factors highlighted later in this report.

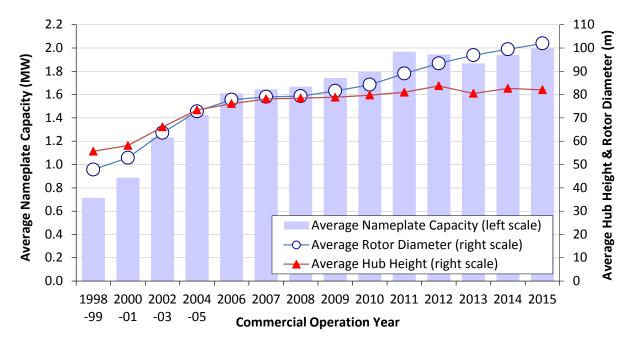


Figure 20. Average turbine nameplate capacity, rotor diameter, and hub height installed during period

Growth in rotor diameter has outpaced growth in nameplate capacity and hub height in recent years

As indicated in Figure 20, and as detailed in Figures 21–23, rotor diameter scaling has been especially significant over the last six years—more so than increases in nameplate capacity and hub heights, both of which have seen a stabilization of the long-term trend in recent years.

³³ Figure 20 (as well as a number of the other figures and tables included in this report) combines data into both 1-and 2-year periods in order to avoid distortions related to small sample size in the PTC lapse years of 2000, 2002, and 2004; although not a PTC lapse year, 1998 is grouped with 1999 due to the small sample of 1998 projects. Though 2013 was a slow year for wind additions, it is shown separately here despite the small sample size.

Starting with turbine nameplate capacity, Figure 21 presents not only the trend in average nameplate capacity (as also shown earlier, in Figure 20) but also how the prevalence of different turbine capacity ratings has changed over time. The average nameplate capacity of newly installed wind turbines has largely held steady since 2011, and the longer-term pace of growth started to slow after 2006. While it took just six years (2000–2005) for MW-class turbines to almost totally displace sub-MW-class turbines, it took another seven years (2006–2012) for multi-MW-class turbines (i.e., 2 MW and above) to gain nearly equal market share with MW-class turbines. The years 2013 and 2014 showed some reversal of that trend, but 2015 was the first year in which > 2 MW turbines were the majority of those installed.

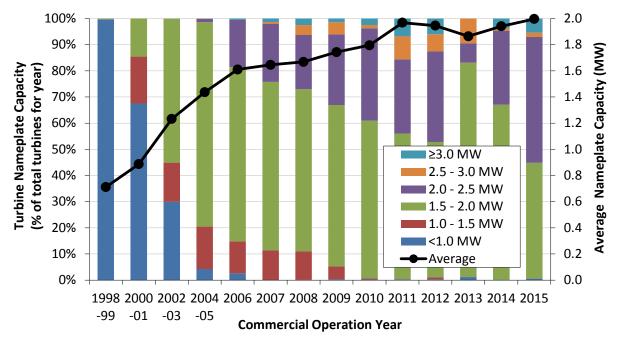


Figure 21. Trends in turbine nameplate capacity

As with nameplate capacity, the average hub height of wind turbines has largely held constant since 2011 (Figure 22). More generally, growth in average hub height has been slow since 2005, with 80 meter towers dominating the overall market. Towers that are 90 meters and taller started to penetrate the market in 2011, however, a trend that has remained steady into 2015, equating to roughly 15% of the market in that year. Finally, although we saw the emergence of >100 meter towers as early as 2007, that segment of the market peaked in 2012 when 16% of newly installed turbines were taller than 100 meters; since 2012, only 1% or less of newly installed turbines in each year (including 2015) have featured towers that tall.

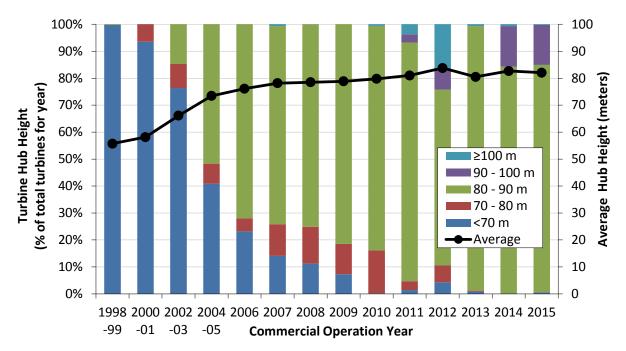


Figure 22. Trends in turbine hub height

The movement towards larger-rotor machines has dominated the U.S. industry in recent years, with OEMs progressively introducing larger-rotor options for their standard turbine offerings and introducing new turbines that feature larger rotors, despite steady average nameplate capacity (Figure 21) and hub heights (Figure 22). As shown in Figure 23, this recent increase has been especially apparent since 2009. In 2008, no turbines employed rotors that were 100 meters in diameter or larger. By 2012, 47% of newly installed turbines featured rotors of at least that diameter, and in 2015 the percentage grew to 86%. Rotor diameters of 110 meters or larger, meanwhile, started penetrating the market in 2012; in 2015, 20% of newly installed turbines featured rotors of that size.

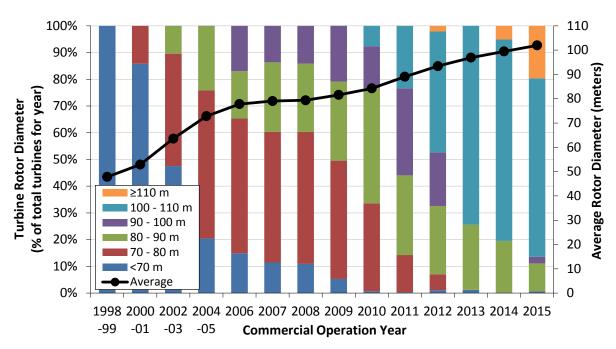


Figure 23. Trends in turbine rotor diameter

Turbines originally designed for lower wind speed sites have rapidly gained market share

Though trends in the average nameplate capacity, hub height, and rotor diameter of turbines have been notable, the growth in the swept area of the rotor has been particularly rapid. With growth in average swept area (in m²) outpacing growth in average nameplate capacity (in W), there has been a decline in the average "specific power" (in W/m²) among the U.S. turbine fleet over time, from 394 W/m² among projects installed in 1998–1999 to 246 W/m² among projects installed in 2015 (Figure 24). The decline in specific power was especially rapid from 2001 to 2005 and, more recently, from 2011 to 2015.

All else equal, a lower specific power will boost capacity factors, because there is more swept rotor area available (resulting in greater energy capture) for each watt of rated turbine capacity, meaning that the generator is likely to run closer to or at its rated capacity more often. In general, turbines with low specific power were originally designed for lower wind speed sites; they were intended to maximize energy capture in areas where the wind resource is modest, and where large rotor machines would not be placed under undue physical stress. As suggested in Figure 24 and as detailed in the next section, however, such turbines are now in widespread use in the United States—even in sites with high wind speeds. The impact of lower specific-power turbines on project-level capacity factors is discussed in more detail in Chapter 5.

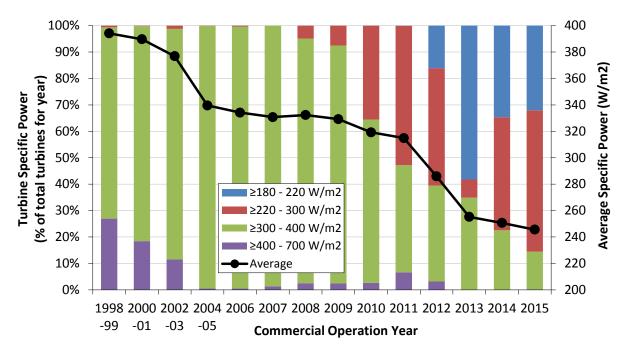


Figure 24. Trends in turbine specific power

Another indication of the increasing prevalence of machines initially designed for lower wind speeds is revealed in Figure 25, which presents trends in wind turbine installations by IEC Class. The IEC classification system considers multiple site characteristics, including wind speed, gusts, and turbulence. Class 3 turbines are generally designed for lower wind speed sites (7.5 m/s and below), Class 2 turbines for medium wind speed sites (up to 8.5 m/s), and Class 1 turbines for higher wind speed sites (up to 10 m/s). Some turbines are designed at the margins of two classifications, and are labeled as such (e.g., Class 2/3). Additionally, 9% of the turbines installed in 2015 were Class S, which is outside IEC rating system.³⁴

The U.S. wind market has clearly become increasingly dominated by IEC Class 3 turbines in recent years. In 2000–2001, Class 1 machines were prevalent. From 2002 through 2011, Class 2 machines dominated the market. Since 2011, there has been a substantial decline in the use of Class 2 turbines, and a concomitant increasing market share of Class 3 and Class 2/3 turbines. In 2015, 55% of the newly installed turbines were Class 3 machines, 33% were Class 2/3 machines, and less than 3% of turbines were Class 2 or lower.

2015 Wind Technologies Market Report

³⁴ The IEC 61400 Class "S" turbines in 2015 were GE Wind 1.7 MW turbines with 103 meter rotors on 80 meter towers, installed in five states. These turbines are not included in the reported average IEC class over time.

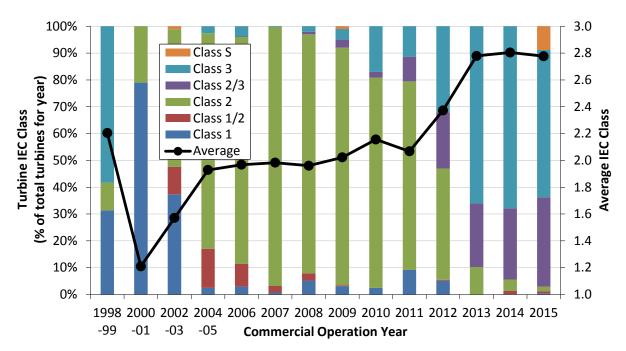
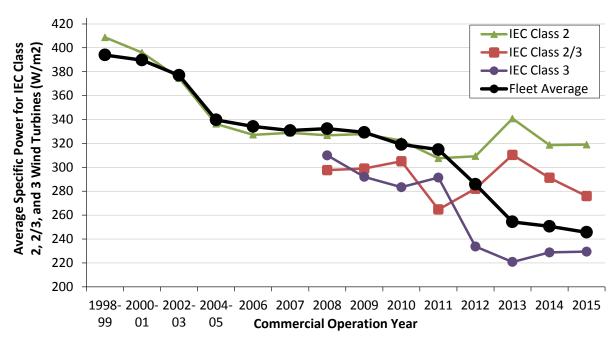


Figure 25. Trends in turbine IEC class

Moreover, Class 2, 2/3, and 3 turbine technology has not remained stagnant. Figure 26 shows the trend in average specific power across all turbines installed in each year (regardless of IEC Class, matching the average line shown in Figure 24) and also the average specific power ratings of Class 2, 2/3, and 3 (i.e., medium and lower wind speed) turbines installed in the United States. Through 2011, the progressively lower specific power of Class 2 turbines, which dominated the market, drove the overall decline in fleet-wide specific power. Since 2012, though, the continued drop in fleet-wide specific power has been driven by the penetration of the even-lower specific power of Class 3 and Class 2/3 machines. The overall trend in fleet-wide specific power has, therefore, been driven not only by the increased penetration of, initially, Class 2 and then, later, Class 2/3 and 3 turbines, but also by the progressively lower specific power ratings of turbines within each of these IEC classes.³⁵

³⁵ The average specific power for the Class S turbines installed in 2015 was 205 W/m², which further drove down the fleet-wide average for specific power in 2015.



Note: specific power averages are shown only for years where there were at least 40 turbines in the respective IEC Class

Figure 26. Trends in specific power for IEC class 2, 2/3, and 3 turbines installed in the U.S.

Turbines originally designed for lower wind speeds are now regularly employed in both lower and higher wind speed sites; taller towers predominate in the Great Lakes and Northeast

One might expect that the increasing market share of turbines designed for lower wind speeds would be due to a movement by wind developers to deploy turbines in lower wind speed sites. Though there is some evidence of this movement historically (see Chapter 5), it is clear in Figures 27 and 28 that turbines originally designed for lower wind speeds are now regularly employed in all regions of the United States, and in both lower and higher wind speed sites.

Figure 27 presents the percentage of turbines installed in four distinct regions of the United States³⁶ (see Figure 29 for regional definitions) that have one or more of the following three attributes: (a) a higher hub height, (b) a lower specific power, and (c) a higher IEC Class. It focuses solely on turbines installed in the 2012–2015 time period. Figure 28 presents similar information, but segments the data by the wind resource quality of the site rather than by the region in which the turbines are located.

³⁶ Due to very limited sample size, we exclude the Southeast region from these graphs and related discussion.

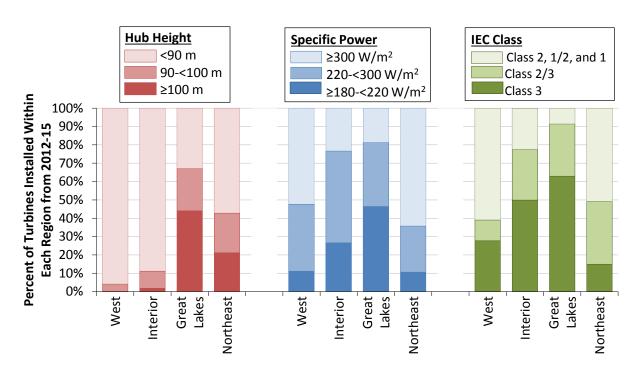
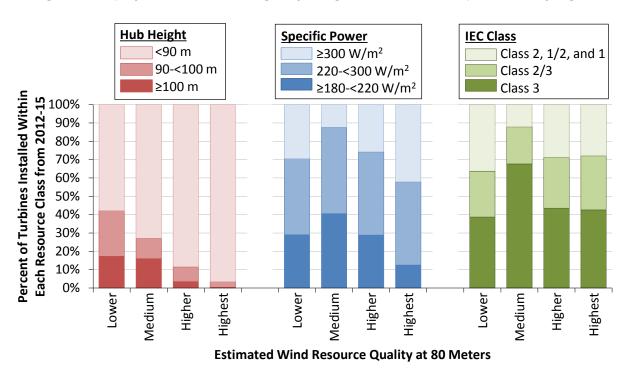


Figure 27. Deployment of turbines originally designed for lower wind speed sites, by region



Note: Wind resource quality is based on site estimates of gross capacity factor at 80 meters by AWS Truepower. The "lower" category includes all projects with an estimated gross capacity factor of <40%, the "medium" category corresponds to 40%–45%, the "higher" category corresponds to 45%-50%, and the "highest" category includes any project at or exceeding 50%.

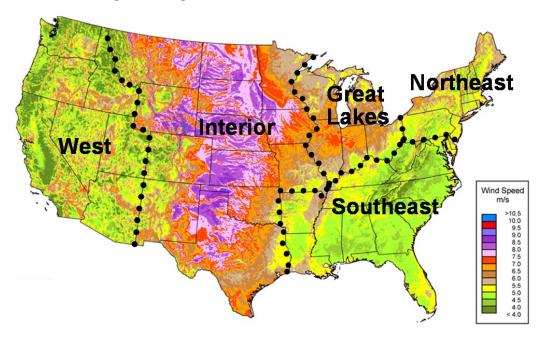
Figure 28. Deployment of turbines originally designed for lower wind speed sites, by estimated wind resource quality

Taller towers (i.e., 90 meters and above) have seen higher market share in the Great Lakes (67%) and Northeast (43%) than in the Interior (11%) and West (4%), often in sites with lower wind speeds. This is largely due to the fact that such towers are most commonly used in sites with higher-than-average wind shear (i.e., greater increases in wind speed with height) to access the better wind speeds that are typically higher up. Sites with higher wind shear are prevalent in the Great Lakes and Northeast.

Low specific power machines installed over this four-year period have been regularly deployed in all regions of the country, though their market share in the Great Lakes (81%) and Interior (77%) exceeds that in the West (48%) and Northeast (36%). Similarly, these turbines have been commonly used in all resource regimes including at sites with very high wind speeds, as shown in Figure 28. Turbines with the lowest specific power ratings (180–220 W/m²), however, have been installed in greater proportions at lower, medium, and higher wind speed sites than at the highest wind speed sites, and are more prevalent in the Great Lakes.

Turning to IEC Class, we see a somewhat similar story. Over this period, Class 3 and Class 2/3 machines have had the largest market share in the Great Lakes (91%) and Interior (78%) regions, but have also gained significant market in the Northeast (49%) and West (39%). Moreover, these turbines have been regularly deployed in both lower- and higher-quality resources sites.

In combination, these findings demonstrate that low specific power and Class 3 and 2/3 turbines, originally designed for lower wind speed sites, have established a strong foothold across the nation and over a wide range of wind speeds. In many parts of the Interior region, in particular, relatively low wind turbulence has allowed turbines designed for low wind speeds to be deployed across a wide range of site-specific resource conditions.



Source: AWS Truepower, National Renewable Energy Laboratory

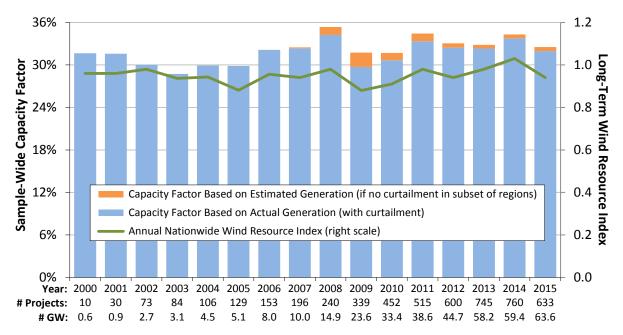
Figure 29. Regional boundaries overlaid on a map of average annual wind speed at 80 meters

5. Performance Trends

Following the previous discussion of technology trends, this chapter presents data from a Berkeley Lab compilation of project-level capacity factors. The full data sample consists of 633 wind projects built between 1998 and 2014 totaling 63,556 MW (96.5% of nationwide installed wind capacity at the end of 2014). Excluded from this assessment are older projects, installed prior to 1998. The discussion is divided into three subsections: the first analyzes trends in sample-wide capacity factors over time; the second looks at variations in capacity factors by project vintage; and the third focuses on regional variations. Unless otherwise noted, all capacity factors in this chapter are reported on a net (i.e., taking into account losses from curtailment, less-than-full availability, wake effects, icing and soiling, etc.) rather than gross basis.

Sample-wide capacity factors have gradually increased, but have been impacted by curtailment and inter-year wind resource variability

The blue bars in Figure 30 show the average sample-wide capacity factor of wind projects in each calendar year among a progressively larger cumulative sample in each year, focusing on projects installed from 1998 through 2014.³⁸



Source: Berkeley Lab

Figure 30. Average cumulative sample-wide capacity factors by calendar year

³⁷ Although some performance data for wind power projects installed in 2015 are available, those data do not span an entire year of operations. As such, for the purpose of this section, the focus is on projects with commercial operation dates from 1998 through 2014.

³⁸ There are fewer individual projects—although more capacity—in the 2015 cumulative sample than there are in 2014. This is due to the sampling method used by EIA, which focuses on a subset of larger projects throughout the year, before eventually capturing the entire sample some months after the year has ended. As a result, it might be late 2016 before EIA reports 2015 performance data for all of the wind power projects that it tracks, and in the meantime this report is left with a smaller sample consisting mostly of the larger projects in each state.

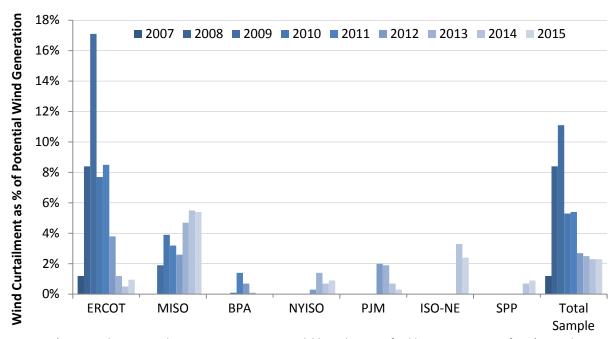
Viewed this way—on a cumulative, sample-wide basis—one might expect to see a gradual improvement in capacity factor over time, as newer turbines with taller towers and lower specific power are added to the fleet. In general, the data support this trend; capacity factors averaged 32.8% between 2011 and 2015 versus 31.8% between 2006 and 2010 versus 30.3% between 2000 and 2005. However, several factors influence the apparent strength of this time-based trend. Two of those factors are discussed below—wind energy curtailment and inter-year variability in the strength of the wind resource. Two additional factors—the average quality of the resource in which projects are located and performance degradation as projects age—are discussed in the next section.

Wind Power Curtailment. Curtailment of wind project output can occur due to transmission inadequacy, minimum generation limits, other forms of grid inflexibility, and/or environmental restrictions—all but the last of which could help to push local wholesale power prices negative, thereby potentially triggering curtailment for economic reasons, particularly among wind projects that do not receive the PTC. Curtailment might be expected to increase as wind energy penetrations rise. That said, in areas where curtailment has been particularly problematic in the past—principally in Texas—steps taken to address the issue have significantly mitigated the concern. For example, Figure 31 shows that only 1.0% of potential wind energy generation within ERCOT was curtailed in 2015, down sharply from 17% in 2009, roughly 8% in both 2010 and 2011, and nearly 4% in 2012. Primary causes for the decrease were the Competitive Renewable Energy Zone transmission line upgrades, most of which were completed by the end of 2013, and a move to more-efficient wholesale electric market designs.

Elsewhere, the only regions shown in Figure 31 in which wind curtailment exceeded 1% in 2015 were MISO at 5.4% (as much of the new wind buildout continues to be located within this ISO) and ISO-NE at 2.4% (a rough estimate that the grid operator suspects is understated). Except for BPA, all of the regions shown in Figure 31 track both "forced" (i.e., required by the grid operator for reliability reasons) and "economic" (i.e., voluntary as a result of wholesale market prices) curtailment. BPA (which did not report in 2014 or 2015) tracks only forced curtailment, which means that its modest curtailment estimates for 2010–2013 may understate the true level of curtailment experienced by wind power projects in the region.

In aggregate, assuming a 33% average capacity factor, the total amount of curtailed wind generation tracked in Figure 31 for 2015 equates to the annual output of roughly 1,125 MW of wind power capacity. Looked at another way, wind power curtailment has reduced sample-wide average capacity factors in recent years. While the blue bars in Figure 30 reflect actual capacity factors—i.e., including the negative impact of curtailment events—the orange bars add back in the estimated amount of wind generation that has been forced to curtail in recent years within the seven areas shown in Figure 31, to estimate what the sample-wide capacity factors would have been absent this curtailment. As shown, sample-wide capacity factors would have been on the order of 0.5–2 percentage points higher nationwide from 2008 through 2015 absent curtailment in just this subset of regions. Estimated capacity factors would have been even higher if comprehensive forced and economic curtailment data were available for all regions.³⁹

³⁹ Excluding BPA (for which 2015 data were not available), the six regions included in Figure 31 collectively contributed 72% of total U.S. wind generation in 2015.



Note: BPA's 2014 and 2015 curtailment estimates were unavailable at the time of publication. A portion of BPA's curtailment from 2010-13 is estimated assuming that each curtailment event lasts for half of the maximum possible hour for each event. SPP's 2014 curtailment estimate is for March through December only. PJM's 2012 curtailment estimate is for June through December only. Except for BPA, which tracks only forced curtailment, all other percentages shown in the figure represent both forced and economic curtailment.

Source: ERCOT, MISO, BPA, NYISO, PJM, ISO-NE, SPP

Figure 31. Estimated wind curtailment by region as a percentage of potential wind generation

Inter-Year Wind Resource Variability. The strength of the wind resource varies from year to year, partly in response to significant persistent weather patterns such as El Niño/La Niña. A relatively strong El Niño had a significant impact in the first two quarters of 2015, contributing to wind speeds that were significantly below normal throughout much of the U.S. Although wind speeds recovered in the third and fourth quarters, annual average deviations of 6% or more for all of 2015 were common, particularly in the West and southern Great Plains states, where much of the wind capacity in the U.S. is located (AWS Truepower 2016).

The green line in Figure 30 also shows that 2015 was generally a bad wind year, at least in terms of the national average wind energy resource as measured by one large project sponsor. ⁴⁰ It is also evident from the figure that movements in sample-wide capacity factor from year to year are influenced by the natural inter-year variability in the strength of the national wind resource.

⁴⁰ The green line in Figure 30 estimates changes in the strength of the average nationwide wind resource from year to year and is derived from data presented by NextEra Energy Resources in its quarterly earnings reports.

The impact of technology trends on capacity factor becomes more apparent when parsed by project vintage

One way to partially control for the time-varying influences described in the previous section (e.g., annual wind resource variations or changes in the amount of wind curtailment) is to focus exclusively on capacity factors in a single year, such as 2015. 41 As such, while Figure 30 presents sample-wide capacity factors in each calendar year, Figure 32 instead shows only capacity factors in 2015, broken out by project vintage. Wind power projects built in 2015 are again excluded, as full-year performance data are not yet available for those projects.

Figure 32 shows an increase in weighted-average 2015 capacity factors when moving from projects installed in the 1998–1999 period to those installed in the 2004–2005 period. Subsequent project vintages through 2011, however, show little if any improvement in average capacity factors recorded in 2015. This pattern of stagnation is finally broken by projects installed in 2012, and even more so by 2013- and 2014-vintage projects. The average 2015 capacity factor among projects built in 2014 reached 41.2%, compared to an average of 31.2% among all projects built from 2004–2011, and 25.8% among all projects built from 1998–2003.

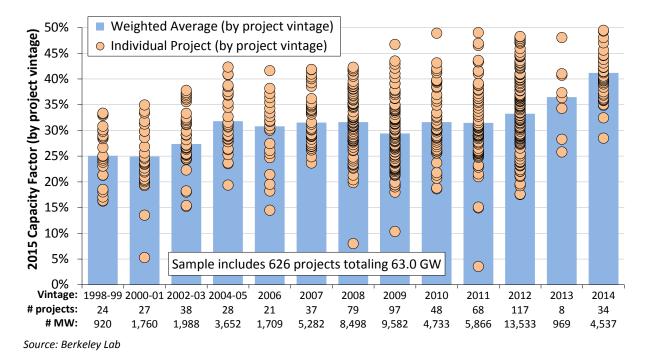


Figure 32. Calendar year 2015 capacity factors by project vintage

The trends in average capacity factor by project vintage seen in Figure 32 can largely be explained by three underlying influences shown in Figure 33: a trend towards progressively lower specific power ratings (note that Figure 33 actually shows the inverse of specific power, so

⁴¹ Although focusing just on 2015 does control (at least loosely) for some of these known time-varying impacts, it also means that the *absolute* capacity factors shown in Figure 32 may not be representative over longer terms if 2015 was not a representative year in terms of the strength of the wind resource (as mentioned above, it was not – wind speeds were well below normal across much of the U.S. in 2015) or wind power curtailment.

that a declining specific power is correlated directionally with a higher capacity factor) and higher hub heights—both of which should boost capacity factors, all else equal—as well as a progressive build-out of lower-quality wind resource sites through 2012 (which should hurt capacity factors, all else equal), followed by deployment at more energetic sites in 2013 and 2014. In addition, as shown later in Figure 36, project vintage itself could be a fourth driver, given the possible degradation in performance among older projects.

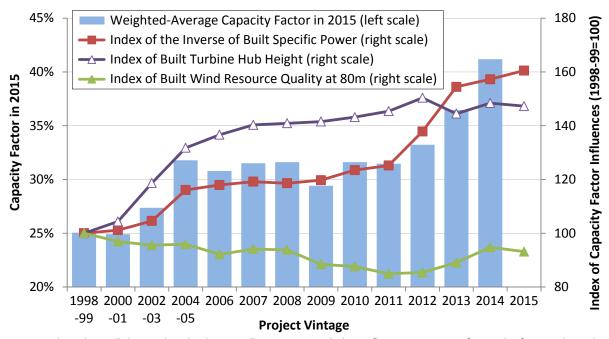
The first two of these influences—the decline in average "specific power" (i.e., W/m² of rotor swept area) and the increase in average hub height among more recent turbine vintages—have already been well-documented in Chapter 4, but are shown yet again in Figure 33 (again, with specific power shown in inverse form, to correlate with capacity factor movements) in index form, relative to projects built in 1998-99. All else equal, a lower average specific power will boost capacity factors, because there is more swept rotor area available (resulting in greater energy capture) for each watt of rated turbine capacity, meaning that the generator is likely to run closer to or at its rated capacity more often. Meanwhile, at sites with positive wind shear, increasing turbine hub heights can help the rotor to access higher wind speeds.

Counterbalancing the decline in specific power and the increase in hub height, however, has been a tendency to build new wind projects in lower-quality wind resource areas, ⁴² at least through 2012—and especially among projects installed from 2009 through 2012⁴³—as shown by the wind resource quality index in Figure 33. This trend reversed course in 2013 and even more so in 2014, as deployment increasingly shifted to the Interior region.

⁴² Estimates of wind resource quality are based on site estimates of *gross* capacity factor at 80 meters, as derived from nationwide wind resource maps created for NREL by AWS Truepower. We index the values to those projects

built in 1998-99. Further details are found in the Appendix.

⁴³ Several factors could have driven this trend, especially in the 2009 to 2012 period. First, the increased availability of low-wind-speed turbines that feature higher hub heights and a lower specific power may have enabled the economic build-out of lower-wind-speed sites. Second, developers may have reacted to increasing transmission constraints over this period (or other siting constraints, or even just regionally differentiated wholesale electricity prices) by focusing on those projects in their pipeline that may not be located in the best wind resource areas but that do have access to transmission (or higher-priced markets, or readily available sites without long permitting times). Finally, federal and/or state policy could be partly responsible. For example, wind projects built in the 4-year period from 2009 through 2012 were able to access a 30% cash grant (or ITC) in lieu of the PTC. Because the dollar amount of the grant (or ITC) was not dependent on how much electricity a project generates, it is possible that developers seized this limited opportunity to build out the less-energetic sites in their development pipelines. Additionally, state RPS requirements sometimes require or motivate in-state or in-region wind development in lower wind resource regimes.



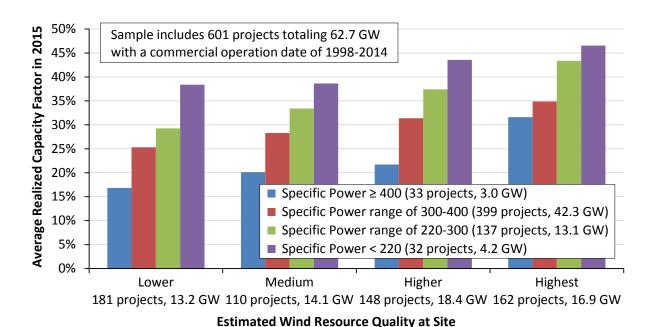
Note: In order to have all three indices be directionally consistent with their influence on capacity factor, this figure indexes the inverse of specific power (i.e., a decline in specific power causes the index to increase rather than decrease).

Source: Berkeley Lab

Figure 33. 2015 capacity factors and various drivers by project vintage

In Figure 33, the significant improvement in average 2015 capacity factors from those projects built in 1998-2001 to those built in 2004-2005 is driven by both an increase in hub height and a decline in specific power, and despite a shift towards somewhat-lower-quality wind resource sites. The stagnation in average capacity factor that subsequently persisted through 2011-vintage projects reflects relatively flat trends in both hub height and specific power, coupled with an ongoing decline in wind resource quality at built sites. Finally, capacity factors began to move higher among 2012-vintage projects, and continued even higher among 2013- and 2014-vintage projects, driven by a sharp reduction in average specific power coupled with a marked improvement in the quality of wind resource sites (average hub height stayed relatively constant over this period). Looking ahead to 2016, 2015-vintage projects are likely to perform similarly to those built in 2014 on average, given only modest changes in these three underlying drivers among the 2015 fleet.

To help disentangle the competing influences of turbine design evolution and lower wind resource quality on capacity factor, Figure 34 controls for each. Across the x-axis, projects are grouped into four different categories, depending on the wind resource quality estimated for each site. Within each wind resource category, projects are further differentiated by their specific power. As one would expect, projects sited in higher wind speed areas generally realized higher 2015 capacity factors than those in lower wind speed areas, regardless of specific power. Likewise, within each of the four wind resource categories along the x-axis, projects that fall into a lower specific power range realized significantly higher 2015 capacity factors than those in a higher specific power range.



Note: Wind resource quality is based on site estimates of gross capacity factor at 80 meters by AWS Truepower. The "lower" category includes all projects with an estimated gross capacity factor of <40%, the "medium" category corresponds to 40%–45%, the "higher" category corresponds to 45%-50%, and the "highest" category includes any project at or exceeding 50%.

Source: Berkeley Lab

Figure 34. Calendar year 2015 capacity factors by wind resource quality and specific power

As a result, it is clear that turbine design changes (specifically, lower specific power, but also, to a lesser extent, higher hub heights) are driving realized capacity factors higher among projects located within a given wind resource regime. This finding is further illustrated in Figure 35, which again groups projects into the same four different categories of wind resource quality, and then reports average realized 2015 capacity factors by commercial operation date within each category. As before, projects sited in higher wind speed areas have, on average, higher capacity factors. More importantly, although there is some variability in the year-to-year trends, it is clear that within each of the four wind resource categories there has been an improvement in capacity factors over time, by commercial operation date.

⁴⁴ The figure only includes those data points representing at least three projects in any single resource-year pair. Among 2013-vintage projects, only the "lower" wind resource quality grouping meets this sample size threshold. In addition, the "medium" wind resource quality grouping lacks sufficient sample size in both 2006 and 2014. In years where insufficient sample size prohibits the inclusion of a data point, dashed lines are used to interpolate from the prior year to the subsequent year.

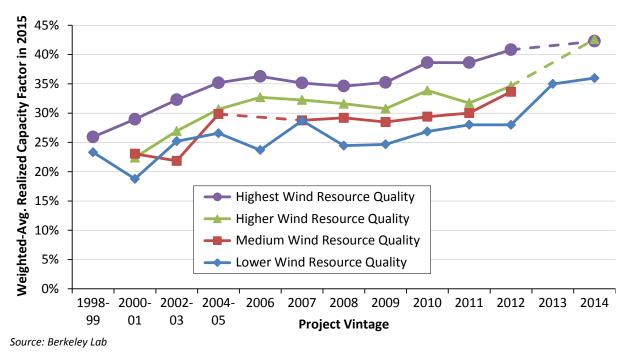


Figure 35. Calendar year 2015 capacity factors by project vintage and wind resource quality

One final variable that could be influencing the apparent improvement in 2015 capacity factors among more recent project vintages is project age. If wind turbine (and project) performance tends to degrade over time, then older projects—e.g., those built from 1998-2001—may have performed worse than more recent vintages in 2015 simply due to their relative age. Figure 36 explores this question by graphing both median (with 10th and 90th percentile bars) and capacity-weighted average capacity factors over time, where time is defined as the number of full calendar years after each individual project's commercial operation date (COD), and where each project's capacity factor is indexed to 100% in year one (in order to focus solely on changes to each project's capacity factor over time, rather than on absolute capacity factor values).

Figure 36 suggests some amount of performance degradation, particularly once projects age beyond 7-10 years—i.e., a period that roughly corresponds to the initial warranty period, as well as the PTC period. Such degradation among older projects could help to partially explain why, for example, in Figure 30 the sample-wide capacity factors in 2000 and 2001 exceeded 30%, while in Figure 32 the 1998-2001 project vintages (i.e., consisting of essentially the same set of projects) posted average capacity factors of just 25% in 2015.

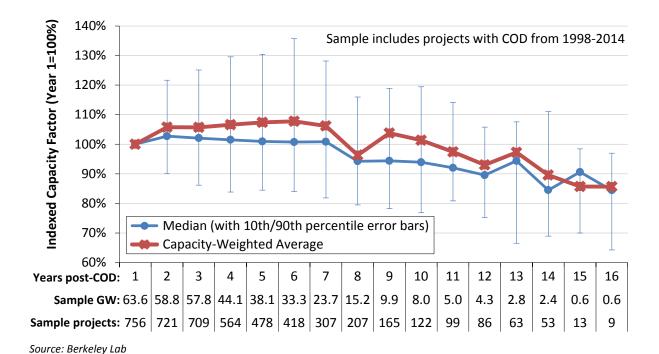


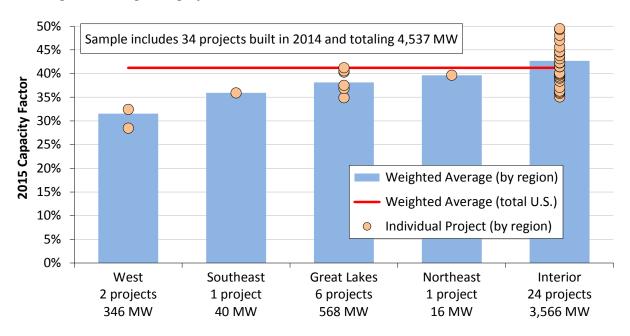
Figure 36. Post-COD changes in capacity factors over time suggest performance degradation

The median values in Figure 36 regularly fall below the capacity-weighted average values, suggesting that smaller projects tend to degrade more, and more rapidly, than larger projects. This difference could perhaps be attributable to less-stringent or -responsive O&M protocols among smaller projects. The PTC could be another influence, if smaller projects have instead more commonly opted for the ITC or its cash counterpart, the Section 1603 grant—neither of which depends on performance. Finally, the up-tick in year two for both the median and capacity-weighted average values could partly reflect the initial production ramp-up period that is commonly experienced by wind projects as they work through and resolve initial "teething" issues during their first year of operations.

Although all of these suppositions surrounding Figure 36 are intriguing and worthy of further study, a number of caveats are in order. First, no attempt was made to correct for inter-year variation in the strength of the wind resource. Although the potential impact of this omission is likely muted by the fact that year five (for example) for one project will be a different calendar year than year five for another project, inter-year resource variation could still play a role. Second, the sample is not the same in each year. The sample shrinks as the number of post-COD years increases, and is increasingly dominated by older projects using older turbine technology that may not be representative of today's turbines. Third, as with all figures presented in this chapter, turbine decommissioning is accounted for by adjusting the nameplate project capacity as appropriate over time (all the way to zero if a project is fully decommissioned), such that each figure, including Figure 36, shows the performance of those turbines that are operating in each period, rather than relative to the original nameplate capacity.

Regional variations in capacity factors reflect the strength of the wind resource and adoption of new turbine technology

The project-level spread in capacity factors shown in Figure 32 is enormous, with 2015 capacity factors ranging from a minimum of 28.5% to a maximum of 49.5% among those projects built in 2014 (this spread is even wider for projects built in earlier years). Some of the spread in project-level capacity factors—for projects built in 2014 and earlier—is attributable to regional variations in average wind resource quality. As such, Figure 37 shows the regional variation in 2015 capacity factors (using the regional definitions shown in Figure 29, earlier) based on just the sample of wind power projects built in 2014.



Source: Berkeley Lab

Figure 37. Calendar year 2015 capacity factors by region: 2014 vintage projects only

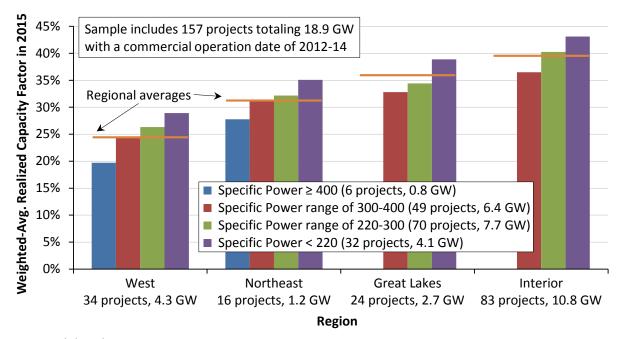
Although four of the five regions have a very limited sample (attributable to the fact that nearly 80% of the total capacity installed in 2014 was located in the Interior region), focusing only on this most recent vintage of projects is nevertheless appropriate in light of the significant disparity in average 2015 capacity factors among 2014 projects versus earlier vintages (see Figures 32 or 33). In other words, were Figure 37 to include vintages prior to 2014 in an effort to boost sample size, the stark differences in 2015 capacity factor across vintages could partially mask any regional differences. Focusing on just the two regions that include more than two projects in Figure 37, generation-weighted average capacity factors are the highest in the Interior region (42.7%) and a bit lower in the Great Lakes (38.1%). Even within these regions, however, there

⁴⁵ Given the relatively small sample size in many regions, as well as the possibility that certain regions may have experienced a particularly good or bad wind resource year or different levels of wind energy curtailment in 2015, care should be taken in extrapolating these results. For example, many projects (of various vintages) located in Wyoming and Idaho – both states that faced significantly below-normal wind speeds in 2015 (AWS Truepower 2016) – experienced 2015 capacity factors that were as much as 8 to 9 percentage points below normal, while at the

can still be considerable spread—e.g., 2015 capacity factors range from 35% up to 49.5% among projects installed in the Interior region in 2014.

Some of this intra-regional variation can be explained by turbine technology. Figure 38 also provides a regional breakdown, although in this case it includes projects built from 2012-2014, which are further differentiated by average specific power. Including older vintages in Figure 38 is both more necessary (i.e., in order to have sufficient sample within each region to enable a specific power breakout) and less problematic (i.e., given that Figure 38 controls for the impact of specific power) than it would have been for Figure 37.

As one would expect, within each of the four regions along the x-axis, projects using turbines that fall into a lower specific power range generally have higher realized capacity factors than those in a higher specific power range.



Source: Berkeley Lab

Figure 38. Calendar year 2015 capacity factors by region and specific power

As shown earlier in Chapter 4 ("Technology Trends"), the rate of adoption of turbines with lower specific power ratings has varied by region. For example, Figure 27 (earlier) shows that 46% of all turbines installed in the Great Lakes region from 2012–2015 have a specific power rating of less than 220 W/m², while the comparable number in the West is 11%. Similarly, 67% of all turbines installed in the Great Lakes region from 2012–2015 have tower heights of at least 90 meters, compared to 4% in the West. The relative degree to which these regions have embraced these turbine design enhancements influences, to some extent, their ranking in Figures 37 and 38.

other extreme many projects in Minnesota, Wisconsin, and Michigan – states that were largely spared the weak winds of 2015 (AWS Truepower 2016) – reported higher-than-normal capacity factors in 2015.

Taken together, Figures 30–38 suggest that, in order to understand trends in empirical capacity factors, one needs to consider (and ideally control for) a variety of factors. These include not only wind power curtailment and the evolution in turbine design, but also a variety of spatial and temporal wind resource considerations—such as the quality of the wind resource where projects are located, inter-year wind resource variability, and even project age.

6. Cost Trends

This chapter presents empirical data on both the upfront and operating costs of wind projects in the United States. It begins with a review of wind turbine prices, followed by total installed project costs, and then finally O&M costs. Sample size varies among these different datasets, and is therefore discussed within each section of this chapter.

Wind turbine prices remained well below levels seen several years ago

Wind turbine prices have dropped substantially since 2008, despite continued technological advancements that have yielded increases in hub heights and especially rotor diameters. Prices maintained their low levels in 2015, aided in part by the strength of the U.S. dollar.

Berkeley Lab has gathered price data for 121 U.S. wind turbine transactions totaling 30,480 MW announced from 1997 through 2015, but this sample includes only nine transactions (1,460 MW) announced in 2014 or 2015. Sources of turbine price data vary, including SEC and other regulatory filings, as well as press releases and news reports. Most of the transactions included in the Berkeley Lab dataset include turbines, towers, delivery to site, and limited warranty and service agreements. An Nonetheless, wind turbine transactions differ in the services included (e.g., whether towers and installation are provided, the length of the service agreement, etc.), turbine characteristics (and therefore performance), and the timing of future turbine delivery, driving some of the observed intra-year variability in transaction prices.

Unfortunately, collecting data on U.S. wind turbine transaction prices is a challenge, in that only a fraction of the announced turbine transactions have publicly revealed pricing data. Partly as a result, Figure 39—which depicts these U.S. wind turbine transaction prices—also presents data from two other sources: (1) Vestas on that company's global average turbine pricing from 2005 through 2015, as reported in Vestas' financial reports; and (2) Bloomberg NEF (2016a) on that company's global average turbine price index by contract signing date.

After hitting a low of roughly \$750/kW from 2000 to 2002, average wind turbine prices increased by approximately \$800/kW (more than 100%) through 2008, rising to an average of more than \$1,500/kW. The increase in turbine prices over this period was caused by several factors, including a decline in the value of the U.S. dollar relative to the Euro; increased materials, energy, and labor input prices; a general increase in turbine manufacturer profitability due in part to strong demand growth; increased costs for turbine warranty provisions; and an upscaling of turbine size, including hub height and rotor diameter (Bolinger and Wiser 2011).

⁴⁶ Because of data limitations, the precise content of many of the individual transactions is not known.

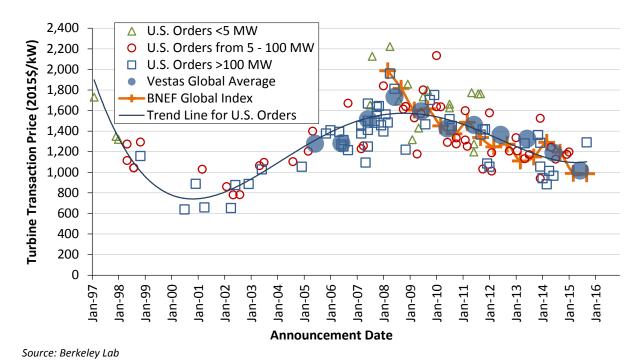


Figure 39. Reported wind turbine transaction prices over time

Since 2008, wind turbine prices have declined substantially, reflecting a reversal of some of the previously mentioned underlying trends that had earlier pushed prices higher as well as increased competition among manufacturers and significant cost-cutting measures on the part of turbine and component suppliers. As shown in Figure 39, our limited sample of recently announced U.S. turbine transactions shows pricing in the \$850–\$1,250/kW range. Bloomberg NEF (2016b) reports average pricing for recent North American contracts of roughly \$1,000/kW. Data from Vestas confirm these pricing points, with average global sales prices in 2015 of \$1,020/kW, when denominated in U.S. dollars.

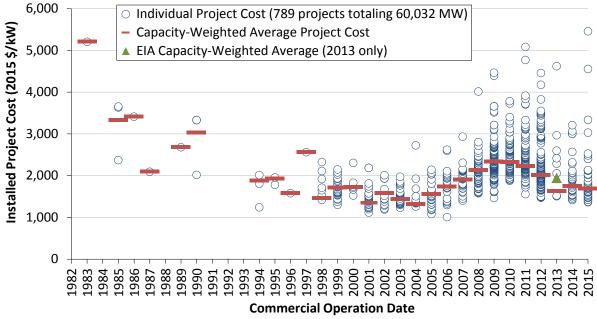
Overall, these figures suggest price declines of 20%–40% since late 2008. Moreover, these declines have been coupled with improved turbine technology (e.g., the recent growth in average hub heights and rotor diameters shown in Chapter 4) and more favorable terms for turbine purchasers (e.g., reduced turbine delivery lead times and less need for large frame-agreement orders, longer initial O&M contract durations, improved warranty terms, and more-stringent performance guarantees). These price reductions and improved terms have exerted downward pressure on total project costs and wind power prices, whereas increased rotor diameters and hub heights are improving capacity factors and further reducing wind power prices.

Lower turbine prices have driven reductions in reported installed project costs

Berkeley Lab also compiles data on the total installed cost of wind power projects in the United States, including data on 44 projects completed in 2015 totaling 5,772 MW, or 67% of the wind power capacity installed in that year. In aggregate, the dataset (through 2015) includes 789 completed wind power projects in the continental United States totaling 60,032 MW and equaling roughly 81% of all wind power capacity installed in the United States at the end of 2015. In general, reported project costs reflect turbine purchase and installation, balance of plant,

and any substation and/or interconnection expenses. Data sources are diverse, however, and are not all of equal credibility, so emphasis should be placed on overall trends in the data rather than on individual project-level estimates.

As shown in Figure 40, the average installed costs of projects declined from the beginning of the U.S. wind industry in the 1980s through the early 2000s, and then increased—reflecting turbine price changes—through the latter part of the last decade. Whereas turbine prices peaked in 2008/2009, however, project-level installed costs appear to have peaked in 2009/2010, with substantial declines since that time. That changes in average installed project costs would lag behind changes in average turbine prices is not surprising and reflects the normal passage of time between when a turbine supply agreement is signed (the time stamp for Figure 39) and when those turbines are actually installed and commissioned (the time stamp for Figure 40).



Source: Berkeley Lab (some data points suppressed to protect confidentiality), Energy Information Administration

Figure 40. Installed wind power project costs over time

In 2015, the capacity-weighted average installed project cost within our sample stood at roughly \$1,690/kW, down \$640/kW or 27% from the apparent peak in average reported costs in 2009 and 2010. Early indications from a limited sample of 18 projects (totaling 3.4 GW) currently under construction and anticipating completion in 2016 suggest no material change in capacity-weighted average installed costs in 2016. 48

⁴⁷ For projects placed in service from 2009 through 2012, Figure 40 partly reflects installed cost estimates derived from publicly available data from the Section 1603 cash grant program. In some cases (although exactly which are unknown), the Section 1603 grant data likely reflect the fair market value rather than the installed cost of wind power projects; in such cases, the installed cost estimates shown in Figure 40 will be artificially inflated.

⁴⁸ Learning curves have been used extensively to understand past cost trends and to forecast future cost reductions

⁴⁸ Learning curves have been used extensively to understand past cost trends and to forecast future cost reductions for a variety of energy technologies, including wind energy. Learning curves start with the premise that increases in the cumulative production or installation of a given technology lead to a reduction in its costs. The principal

Also included in Figure 40 is a single weighted-average data point for 2013 from the EIA, which has recently begun to collect installed cost data through its Form 860 survey instrument. Although the EIA's capacity-weighted average cost for 2013 is higher than that derived from our sample (which is perhaps skewed to the low side by one sizable project in a year when little capacity was built), it is nevertheless aligned with the declining cost trend from 2009 to 2015. The EIA plans to report average data for 2014 and 2015 later in 2016; we will include these additional data points in future editions of this report.

Installed costs differed by project size, turbine size, and region

Average installed project costs exhibit economies of scale, especially at the lower end of the project size range. Figure 41 shows that among the sample of projects installed in 2015, there is a substantial drop in per-kW average installed costs when moving from projects of 5 MW or less to projects in the 5–20 MW range. As project size increases further, however, economies of scale appear to be somewhat less prevalent. A few notable high-cost projects are called out in Figure 41; all are from the high-cost Northeast region, with the two highest-cost projects either using sub-MW turbines (NY) or representing the first utility-scale wind installation in a state (CT).

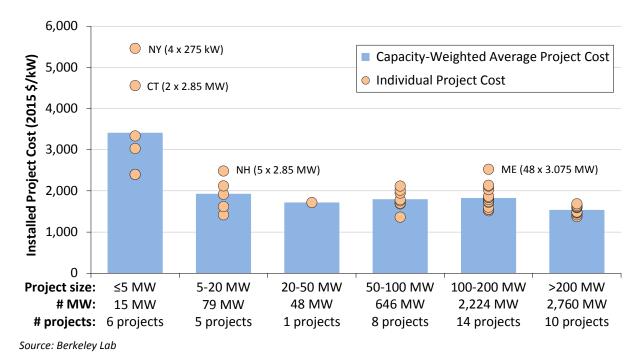


Figure 41. Installed wind power project costs by project size: 2015 projects

parameter calculated by learning curve studies is the learning rate: for every doubling of cumulative production/installation, the learning rate specifies the associated percentage reduction in costs. Considering the full time series of installed cost data presented in Figure 40 (from 1982 through 2015) in conjunction with global cumulative wind power installations over that same period results in a learning rate of 6.5%.

⁴⁹ The relatively high \$/kW cost of the Connecticut project is also partly due to the fact that the project's nameplate capacity—which serves as the denominator of the \$/kW cost estimate—is capped at 5 MW, even though the two 2.85 MW turbines are capable of generating a total of 5.7 MW. If \$/kW costs were based on 5.7 MW rather than 5 MW, the cost of this project would be \$3,995/kW rather than \$4,554/kW.

Another way to look for economies of scale is by turbine size (rather than by project size), on the theory that a given amount of wind power capacity may be built less expensively using fewer, larger turbines as opposed to more, smaller turbines. Figure 42 explores this relationship and illustrates that here too some economies of scale are evident as turbine size increases—particularly moving from sub-MW turbines to MW class turbines. The same apparent high-cost projects are noted in Figure 42, with the Connecticut project seemingly more of an outlier in this case, viewed within the context of turbine capacity rather than project capacity.

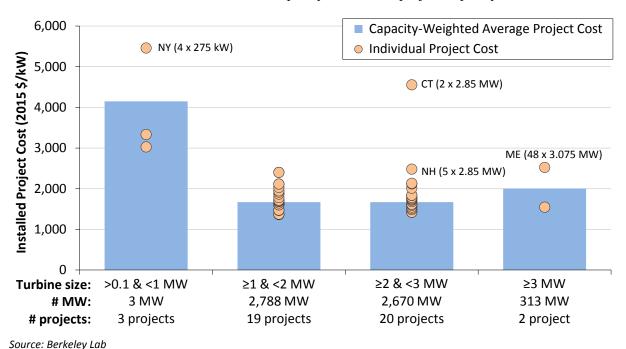


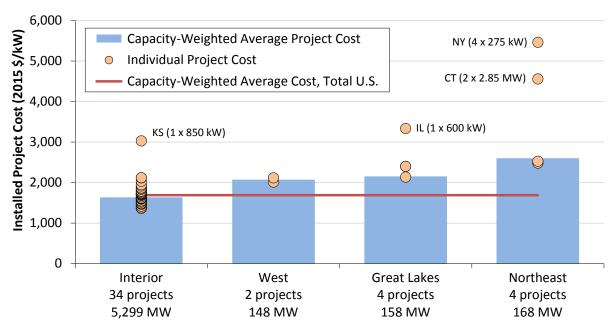
Figure 42. Installed wind power project costs by turbine size: 2015 projects

Regional differences in average project costs are also apparent and may occur due to variations in development costs, transportation costs, siting and permitting requirements and timeframes, and other balance-of-plant and construction expenditures—as well as variations in the turbines deployed in different regions (e.g., use of low-wind-speed technology in regions with lesser wind resources). Considering only projects in the sample that were installed in 2015, Figure 43 breaks out project costs among four of the five regions defined in Figure 29 (there were no projects built in the Southeast region in 2015). The Interior region—with by far the largest sample—was the lowest-cost region on average, with an average cost of \$1,640/kW, while the Northeast was the

⁵⁰ There is likely some correlation between turbine size and project size, at least at the low end of the range of each. In other words, projects of 5 MW or less are more likely than larger projects to use individual turbines of less than 1 MW. As such, Figures 41 and 42—both of which show scale economies at small project or turbine sizes, diminishing as project or turbine size increases—could both be reflecting the same influence, making it difficult to tease out the unique influences of turbine size from project size.

⁵¹ For reference, the 73,992 MW of wind installed in the United States at the end of 2015 is apportioned among the five regions shown in Figure 29 as follows: Interior (63%), West (19%), Great Lakes (11%), Northeast (6%), and Southeast (1%). The remaining installed U.S. wind power capacity is located in Hawaii, Alaska, and Puerto Rico and is typically excluded from our analysis sample due to the unique issues facing wind development in these three isolated states/territories.

highest-cost region (although with a sample of just four projects, two of which stand out as unusually high-cost projects). ⁵² Viewed within this regional context, the Maine and New Hampshire projects identified as high-cost in Figures 41 and 42 no longer appear as such in Figure 43, while two new single-turbine projects involving sub-MW turbines in the Interior and Great Lakes regions now stand out as high-cost projects for the first time.

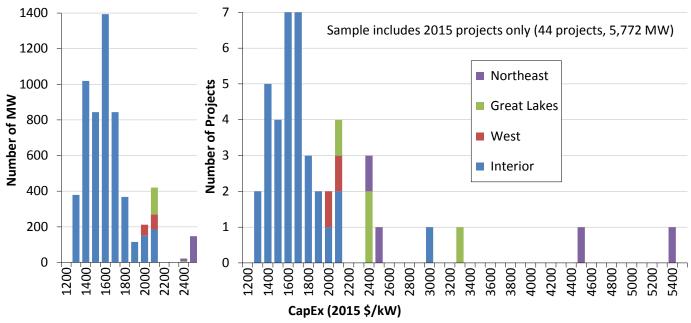


Source: Berkeley Lab

Figure 43. Installed wind power project costs by region: 2015 projects

Finally, Figure 44 shows two histograms that present the distribution of installed project costs among 2015-vintage projects, in terms of both capacity and number of projects. The four projects with costs above \$3,000/kW are evident in the histogram of projects, but given their small size, they do not really show up in the capacity histogram; hence it is truncated at \$2,500/kW. More generally, it is clear that most of the projects—and all of the low-cost projects—are located in the Interior region, where the distribution is centered on the \$1,600-\$1,700/kW bin. Projects in other regions have higher costs.

⁵² Graphical presentation of the data in this way should be viewed with some caution, as numerous other factors also influence project costs, and those are not controlled for in Figure 43.



Note: The capacity histogram is truncated at \$2,500/kW as a space-saving measure, given that the four projects that have higher costs are all very small and hence imperceptible on the capacity histogram.

Source: Berkeley Lab

Figure 44. Histogram of installed costs by MW and projects: 2015 projects

Operations and maintenance costs varied by project age and commercial operations date

Operations and maintenance costs are an important component of the overall cost of wind energy and can vary substantially among projects. Unfortunately, publicly available market data on actual project-level O&M costs are not widely available. Even where data are available, care must be taken in extrapolating historical O&M costs given the dramatic changes in wind turbine technology that have occurred over the last two decades (see Chapter 4).

Berkeley Lab has compiled limited O&M cost data for 154 installed wind power projects in the United States, totaling 12,080 MW with commercial operation dates of 1982 through 2014. These data cover facilities owned by both IPPs and utilities, although data since 2004 are exclusively from utility-owned projects. A full time series of O&M cost data, by year, is available for only a small number of projects; in all other cases, O&M data are available for just a subset of years of project operations. Although the data sources do not all clearly define what items are included in O&M costs, in most cases the reported values include the costs of wages and materials associated with operating and maintaining the facility, as well as rent. ⁵³ Other ongoing expenses, including general and administrative expenses, taxes, property insurance,

⁵³ The vast majority of the recent data derive from FERC Form 1, which uses the Uniform System of Accounts to define what should be reported under "operating expenses"—namely, those operational costs associated with supervision and engineering, maintenance, rents, and training. Though not entirely clear, there does appear to be some leeway within the Uniform System of Accounts for project owners to capitalize certain replacement costs for turbines and turbine components and report them under "electric plant" accounts rather than maintenance accounts.

depreciation, and workers' compensation insurance, are generally not included. As such, the following figures are not representative of total operating expenses for wind power projects; the last paragraphs in this section include data from other sources that demonstrate higher total operating expenses. Given the scarcity, limited content, and varying quality of the data, the results that follow should be taken as indicative of potential overall trends. Note finally that the available data are presented in \$/MWh terms, as if O&M represents a variable cost; in fact, O&M costs are in part variable and in part fixed. Although not presented here, expressing O&M costs in units of \$/kW-year yields qualitatively similar results to those presented in this section.

Figure 45 shows project-level O&M costs by commercial operation date. ⁵⁴ Here, each project's O&M costs are depicted in terms of its average annual O&M costs from 2000 through 2015, based on however many years of data are available for that period. For example, for projects that reached commercial operation in 2014, only year 2015 data are available, and that is what is shown in the figure. ⁵⁵ Many other projects only have data for a subset of years during the 2000–2015 timeframe, either because they were installed after 2000 or because a full time series is not available, so each data point in the chart may represent a different averaging period within the overall 2000–2015 timeframe. The chart highlights the 71 projects, totaling 8,465 MW, for which 2015 O&M cost data were available; those projects have either been updated or added to the chart since the previous edition of this report.

The data exhibit considerable spread, demonstrating that O&M costs (and perhaps also how O&M costs are reported by respondents) are far from uniform across projects. However, Figure 45 also suggests that projects installed within the past decade have, on average, incurred lower O&M costs than those installed earlier. Specifically, capacity-weighted average 2000–2015 O&M costs for the 24 projects in the sample constructed in the 1980s equal \$35/MWh, dropping to \$24/MWh for the 37 projects installed in the 1990s, to \$10/MWh for the 65 projects installed in the 2000s, and to \$9/MWh for the 28 projects installed since 2010. This drop in O&M costs may be due to a combination of at least two factors: (1) O&M costs generally increase as turbines age, component failures become more common, and manufacturer warranties expire; 57

⁴ For projects installed i

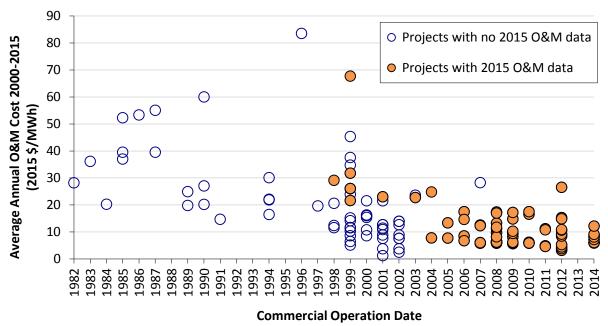
⁵⁴ For projects installed in multiple phases, the commercial operation date of the largest phase is used; for repowered projects, the date at which re-powering was completed is used.
⁵⁵ Projects installed in 2015 are not shown because only data from the first full year of project operations (and

³³ Projects installed in 2015 are not shown because only data from the first full year of project operations (and afterwards) are used, which in the case of projects installed in 2015 would be year 2016.

⁵⁶ If expressed instead in terms of \$/kW-year, capacity-weighted average 2000–2015 O&M costs were \$68/kW-year for projects in the sample constructed in the 1980s, dropping to \$57/kW-year for projects constructed in the 1990s, to \$28/kW-year for projects constructed in the 2000s, and to \$26/kW-year for projects constructed since 2010. Somewhat consistent with these observed O&M costs, Bloomberg NEF (2016c) shows a general reduction in the cost of a sample of initial full-service O&M contracts (pertaining to the first years of turbine life, and only about 4 GW of which are from North America) since 2008, reaching 21.6 Euro/kW-year in 2015 (~\$24/kW-year). An NREL analysis based on data from DNV KEMA and GL Garrad Hassan covering roughly 5 GW of operating wind projects (with only about half that amount having been operable for longer than five years) also shows average levels of expenditure consistent with the Berkeley Lab dataset, at least when focusing on turbine and balance-of-plant O&M costs for projects commissioned in the 2000s (Lantz 2013).

⁵⁷ Many of the projects installed more recently may still be within their turbine manufacturer warranty period, and/or may have capitalized O&M service contracts within their turbine supply agreement. Projects choosing the Section 1603 cash grant over the PTC may have had a particular incentive to capitalize service contracts (29 projects totaling 44% of the sample capacity installed since 2000 were installed from 2009-2012—i.e., within the period of eligibility for the Section 1603 grant—though only five of these 29 projects actually elected the grant over the PTC). In either case, reported O&M costs will be artificially low.

and (2) projects installed more recently, with larger turbines and more sophisticated designs, may experience lower overall O&M costs on a per-MWh basis.

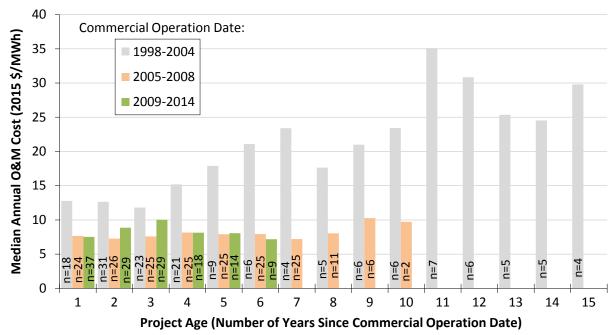


Source: Berkeley Lab; seven data points suppressed to protect confidentiality

Figure 45. Average O&M costs for available data years from 2000–2015, by commercial operation date

Although limitations in the underlying data do not permit the influence of these two factors to be unambiguously distinguished, to help illustrate key trends, Figure 46 shows median annual O&M costs over time, based on project age (i.e., the number of years since the commercial operation date) and segmented into three project-vintage groupings. Data for projects under 5 MW in size are excluded, to help control for the confounding influence of economies of scale, which reportedly can be significant (Bloomberg NEF 2016c). Note that, at each project age increment and for each of the three project vintage groups, the number of projects used to compute median annual O&M costs is limited and varies substantially.

With these limitations in mind, Figure 46 shows an upward trend in project-level O&M costs as projects age, at least among the oldest projects in our sample – i.e., those built from 1998-2004 – although the sample size after year 4 is rather limited for these earliest projects. This upward trend is consistent with Bloomberg NEF (2016c) data showing that O&M contract renewals are more expensive than initial service agreements. In addition, the figure shows that projects installed more recently (from 2005–2008 and/or 2009-2014) have had, in general, lower O&M costs than those installed in earlier years (from 1998–2004), at least for the first 10 years of operation. Parsing the "recent project" cohort into two sub-periods, however, reveals that this trend towards lower costs has not necessarily continued with the most recent projects in the sample; cost differences between the 2005-2008 and 2009-2014 project samples are small, with no consistent trend as projects age.



Source: Berkeley Lab; medians shown only for groups of two or more projects, and only projects >5 MW are included

Figure 46. Median annual O&M costs by project age and commercial operation date

As indicated previously, the data presented in Figures 45 and 46 include only a subset of total operating expenses. In comparison, the financial statements of EDP Renováveis (EDPR), a public company that owned more than 4 GW of U.S. wind project assets at the end of 2015 (all of which has been installed since 2000), indicate markedly higher total operating costs. Specifically, EDPR (2016) reported total operating expenses of \$25.5/MWh for its U.S. wind project portfolio in 2015⁵⁹ – i.e., more than twice the ~\$10/MWh average O&M cost reported above for the 93 projects in the Berkeley Lab data sample installed since 2000.

This disparity in operating costs between EDPR and the Berkeley Lab data sample reflects, in large part, differences in the scope of expenses reported. For example, EDPR breaks out its total U.S. operating costs in 2015 (\$25.5/MWh) into three categories: supplies and services, which "includes O&M costs" (\$13.5/MWh); personnel costs (\$4.0/MWh); and other operating costs, which "mainly includes operating taxes, leases, and rents" (\$7.9/MWh). Among these three categories, the \$13.5/MWh for supplies and services is probably closest in scope to the Berkeley Lab data. Confirming these basic findings (i.e., that turbine and balance-of-plant O&M costs make up only about half of total operating costs), NREL analysis based on data from DNV KEMA on plants commissioned before 2009 shows total operating expenditures of \$40–\$60/kW-year depending on project age, with turbine and balance-of-plant O&M costs representing roughly half of those expenditures (Lantz 2013).

⁵⁸ Past editions of this report also reported O&M costs for Infigen, but in October 2015 Infigen's U.S. wind assets were sold to a privately held company that does not file public financial statements.

⁵⁹ Though not entirely clear, EDPR's reported operating expenses may exclude any repair or replacement costs that have been capitalized rather than expensed.

7. Wind Power Price Trends

Earlier sections documented trends in capacity factors, wind turbine prices, installed project costs, O&M costs, and project financing—all of which are determinants of the wind power purchase agreement (PPA) prices presented in this chapter. In general, higher-cost and/or lower-capacity-factor projects will require higher PPA prices, while lower-cost and/or higher-capacity-factor projects can have lower PPA prices.

Berkeley Lab collects data on wind PPA prices from the sources listed in the Appendix, resulting in a dataset that currently consists of 387 PPAs totaling 34,558 MW from wind projects that have either been built (from 1998 to the present) or are planned for installation later in 2016 or 2017. All of these PPAs bundle together the sale of electricity, capacity, and renewable energy certificates (RECs), and most of them have a utility as the counterparty. ⁶⁰

Except where noted, PPA prices are expressed throughout this chapter on a levelized basis over the full term of each contract, and are reported in real 2015 dollars. Whenever individual PPA prices are averaged together (e.g., within a region or over time), the average is generation-weighted. Whenever they are broken out by time, the date on (or year in) which the PPA was signed or executed is used, as that date provides the best indication (i.e., better than commercial operation date) of market conditions at the time. Finally, because the PPA prices in the Berkeley Lab sample are reduced by the receipt of state and federal incentives (e.g., the levelized PPA prices reported here would be at least \$15/MWh higher without the PTC, ITC, or Treasury Grant and are influenced by various local policies and market characteristics, they do not directly represent wind energy generation costs.

⁶⁰ Though we do have pricing details for some PPAs with corporate off-takers, in many cases such PPAs are synthetic or financial arrangements in which the project sponsor enters into a "contract for differences" with the corporate off-taker around an agreed-upon strike price. Because the strike price is not directly linked to the sale of electricity, it is rarely disclosed (at least through our traditional sources, like regulatory filings). Though only a minor omission at present, this distinction could limit our sample more severely in the future if the popularity of corporate offtake agreement continues to grow at its current pace.

⁶¹ Having full-term price data (i.e., pricing data for the full duration of each PPA, rather than just historical PPA prices) enables us to present these PPA prices on a levelized basis (levelized over the full contract term), which provides a complete picture of wind power pricing (e.g., by capturing any escalation over the duration of the contract). Contract terms range from 5 to 34 years, with 20 years being by far the most common (at 58% of the sample; 89% of contracts in the sample are for terms ranging from 15 to 25 years). Prices are levelized using a 7% real discount rate.

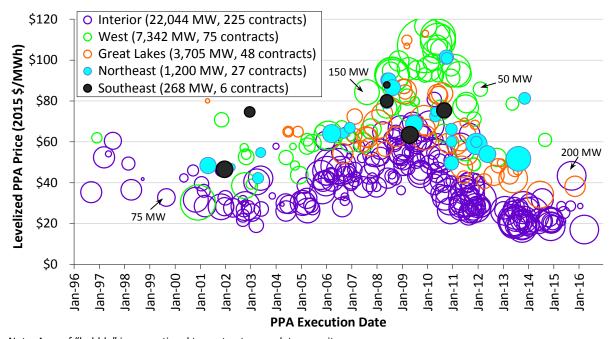
⁶² Generation weighting is based on the empirical project-level performance data analyzed earlier in this report and assumes that historical project performance (in terms of annual capacity factor as well as daily and/or seasonal production patterns where necessary) will hold into the future as well. In cases where there is not enough operational history to establish a "steady-state" pattern of performance, we used discretion in estimating appropriate weights (to be updated in the future as additional empirical data become available).

⁶³ The estimated levelized PPA price impact of ~\$15/MWh is less than the PTC's 2015 face value of \$23/MWh for several reasons. First, the PTC is a 10-year credit, whereas most PPAs are for longer terms (e.g., 20 years). Second, the PTC is a tax credit, and must be converted to pre-tax equivalent terms before being compared to PPA prices. Finally, the presence of the PTC constrains financing choices for many wind project owners and drives up the project's weighted average cost of capital. In other words, if not for the PTC, projects could be financed more cheaply; this difference in the weighted average cost of capital with and without the PTC erodes some of the PTC's value (for more information, see Bolinger (2014)).

This chapter summarizes wind PPA prices in a number of different ways: by PPA execution date, by region, compared to wholesale power prices, and compared to future natural gas prices. In addition, REC prices are presented in a text box on page 67.

Wind PPA prices remain very low

Figure 47 plots contract-level levelized wind PPA prices by contract execution date, showing a clear downward trend in PPA prices since 2009 and 2010—both overall and by region (see Figure 29 for regional definitions). This trend is particularly evident within the Interior region, which—as a result of its low average project costs and high average capacity factors shown earlier in this report—also tends to be the lowest-priced region over time. Prices generally have been higher in the rest of the United States. 65



Note: Area of "bubble" is proportional to contract nameplate capacity

Source: Berkeley Lab

Figure 47. Levelized wind PPA prices by PPA execution date and region

Figure 48 provides a smoother look at the time trend nationwide (the blue columns) by averaging the individual levelized PPA prices shown in Figure 47 by year. After topping out at nearly \$70/MWh for PPAs executed in 2009, the national average levelized price of wind PPAs within the Berkeley Lab sample has dropped to around the \$20/MWh level—though this nationwide average is admittedly focused on a sample of projects that largely hail from the lowest-priced

⁶⁴ Roughly 99% of the contracts that are depicted in Figure 47 are from projects that are already online. For the most part, only the most recent contracts in the sample are from projects that are not yet online.

⁶⁵ Regional differences can affect not only project capacity factors (depending on the strength of the wind resource in a given region), but also development and installation costs (depending on a region's physical geography, population density, labor rates, or even regulatory processes). It is also possible that regions with higher wholesale electricity prices or with greater demand for renewable energy will, in general, yield higher wind energy contract prices due to market influences.

Interior region of the country where most of the new capacity built in recent years is located. Focusing only on the Interior region, the PPA price decline has been more modest, from ~\$55/MWh among contracts executed in 2009 to ~\$20/MWh today. The temporary price spike among PPAs signed in 2015 is attributable to a small sample (just six projects totaling 401 MW) that is dominated by two higher-priced contracts totaling 300 MW, one of which is located in the Interior region but is selling into California (which perhaps explains the higher price).

The trend of rising PPA prices from 2003 to 2009 and then falling prices since then is directionally consistent with the turbine price and installed project cost trends shown earlier in Chapter 6. In addition, the turbine scaling described in Chapter 4 has, on average, boosted the capacity factors of more recent project vintages, as documented in Chapter 5. This combination of declining costs and improved performance (along with historically low interest rates, as shown earlier in Figure 17) has enabled wind PPA prices to fall to today's record-low levels.

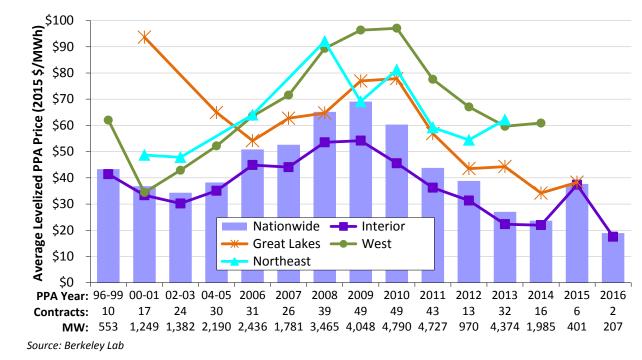
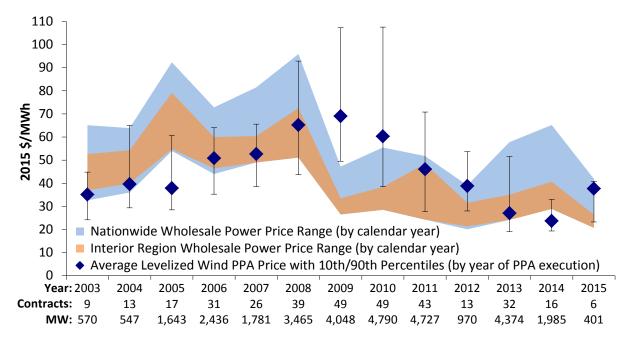


Figure 48. Generation-weighted average levelized wind PPA prices by PPA execution date and region

Figure 48 also shows trends in the generation-weighted average levelized PPA price over time among four of the five regions broken out in Figure 29 (the Southeast region is omitted from Figure 48 owing to its small sample size). Figures 47 and 48 both demonstrate that, based on our contract sample, PPA prices are generally low in the U.S. Interior, high in the West, and moderate in the Great Lakes and Northeast regions. As shown by the close agreement between the two, the large Interior region—where much of U.S. wind project development occurs—dominates the nationwide sample, particularly in recent years.

The relative economic competitiveness of wind power declined in 2015 with the drop in wholesale power prices

The blue-shaded area of Figure 49 shows the range (minimum and maximum) of average annual wholesale electricity prices for a flat block of power⁶⁶ going back to 2003 at 23 different pricing nodes located throughout the country (refer to the Appendix for the names and approximate locations of the 23 pricing nodes represented by the blue-shaded area). Similarly, the orange-shaded area shows the range of wholesale prices among only those nodes that are located within the Interior region. Our PPA price sample is increasingly dominated by projects in this region. Finally, the dark diamonds represent the generation-weighted average levelized wind PPA prices (with error bars denoting the 10th and 90th percentiles) in the years in which contracts were executed (consistent with the nationwide averages presented in Figure 48).



Source: Berkeley Lab, FERC, ABB, IntercontinentalExchange

Figure 49. Average levelized long-term wind PPA prices and yearly wholesale electricity prices over time

At least within the sample of projects reported here, average long-term wind PPA prices compared favorably to yearly wholesale electricity prices from 2003 through 2008. Starting in 2009, however, the sharp drop in wholesale electricity prices (driven primarily by lower natural gas prices) squeezed average wind PPA prices out of the wholesale power price range on a

⁶⁶ A flat block of power is defined as a constant amount of electricity generated and sold over a specified period. Although wind power projects do not provide a flat block of power, as a common point of comparison a flat block is not an unreasonable starting point. In other words, the time variability of wind energy is often such that its wholesale market value is somewhat lower than, but not too dissimilar from, that of a flat block of (non-firm) power, at least at lower levels of wind penetration (Fripp and Wiser 2006). At higher levels of wind penetration, wind power can suppress local wholesale power prices during times of peak output and/or low demand, thereby eroding its value in the wholesale market relative to a flat block of power.

nationwide basis. Wind PPA prices have since fallen, however, and in 2011 and 2012 reconnected with the upper end of the wholesale power price range. In 2013 and 2014, further PPA price declines, along with a bit of a rebound in wholesale prices, put wind back at the bottom of the range once again. Subsequently, the sharp drop in average wholesale electricity prices in 2015 has made it somewhat harder for wind to compete in the market. The spike in PPA prices among the small sample of 2015 projects mentioned above did not help, though focusing on the 10th to 90th percentile range rather than the weighted-average PPA price perhaps provides a more representative comparison in that year. Even so, the much narrower and lower range of wholesale power prices in the Interior region is arguably the more relevant comparison in recent years, as project development has been largely concentrated within that region.

The comparison between levelized wind PPA and wholesale power prices in Figures 49 is imperfect, in part because the levelized wind PPA prices represent a future stream of prices that has been locked in (and that often extends for 20 years or longer), whereas the wholesale power prices are pertinent to just the single year in question. Figure 50 attempts to remedy this temporal mismatch by presenting an alternative (yet still imperfect) way of looking at how wind stacks up relative to its competition.

Rather than levelizing the wind PPA prices, Figure 50 plots the future stream of wind PPA prices (the 10th, 50th, and 90th percentile prices are shown, along with a generation-weighted average) from PPAs executed in 2014, 2015, or 2016 against the EIA's latest projections of just the fuel costs of natural gas-fired generation. ⁶⁷ As shown, the median and generation-weighted average wind PPA prices from contracts executed in the past three years are consistently at or below the low end of the projected natural gas fuel cost range over the entire period, while the 90th percentile wind PPA prices are initially above the high end of the fuel cost range, but fall below the reference case projection and into the lower portion of the fuel cost range from 2024-2040.

Figure 50 also hints at the long-term value that wind power can provide as a "hedge" against rising and/or uncertain natural gas prices. The wind PPA prices that are shown have been contractually locked in, whereas the fuel cost projections to which they are compared are highly uncertain. Actual fuel costs could ultimately be lower or much higher. Either way, as evidenced by the widening range of fuel cost projections over time, it becomes increasingly difficult to forecast fuel costs with any accuracy as the term of the forecast increases.

⁶⁷ The fuel cost projections come from the EIA's *Annual Energy Outlook 2016* publication, and increase from around \$3.89/MMBtu in 2017 to \$5.36/MMBtu (both in 2015 dollars) in 2040 in the reference case. The upper and lower bounds of the fuel cost range reflect the low (and high, respectively) oil and gas resource and technology cases. All fuel prices are converted from \$/MMBtu into \$/MWh using a flat heat rate of 7 MMBtu/MWh, which is aggressive compared to the heat rates implied by the reference case modeling output (which start at roughly 7.9 MMBtu/MWh in 2017 and gradually decline to just above 7 MMBtu/MWh by 2040).

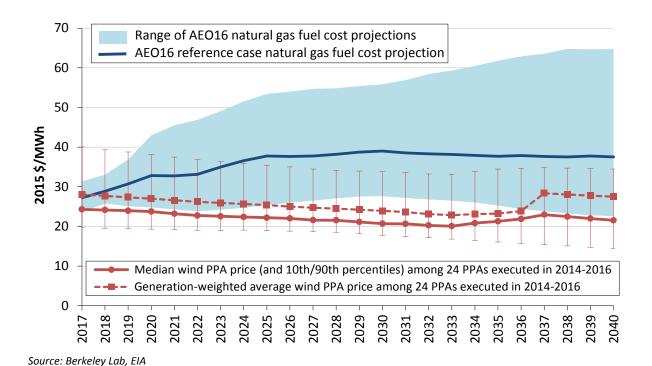


Figure 50. Wind PPA prices and a natural gas fuel cost projections by calendar year over time

<u>Important Note</u>: Notwithstanding the comparisons made in this section, neither the wind nor wholesale electricity prices (nor fuel cost projections) reflect the full social costs of power generation and delivery. Among the various shortcomings of comparing wind PPA and wholesale power prices in this manner are the following:

- Wind PPA prices are reduced by virtue of federal and, in some cases, state tax and financial incentives. Similarly, wholesale electricity prices (or fuel cost projections) are reduced by virtue of any financial incentives provided to fossil-fueled generation and its fuel production, as well as by not fully accounting for the environmental and social costs of fossil generation.
- Wind PPA prices do not fully reflect integration, resource adequacy, or transmission costs, while wholesale electricity prices (or fuel cost projections) also do not fully reflect transmission costs, and may not fully reflect capital and fixed (or variable) operating costs.
- Wind PPA prices—once established—are fixed and known, whereas wholesale electricity
 prices are short-term and therefore subject to change. As shown in Figure 50, EIA projects
 natural gas prices to rise from current levels, resulting in an increase in wholesale electricity
 prices.
- The location of the sampled wholesale electricity nodes and the assumption of a flat block of power are not perfectly consistent with the location and output profile of the sample of wind power projects. Especially at higher penetrations and in locations where wind generation profiles are poorly correlated with local load profiles, excessive wind generation during times of peak output and/or low load can push the wholesale market value of wind power well below that of a flat block of power.

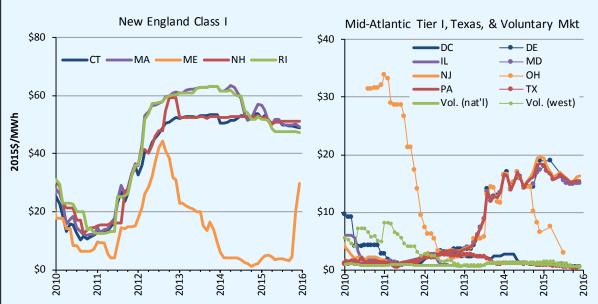
In short, comparing levelized long-term wind PPA prices with either yearly wholesale electricity prices or forecasts of the fuel costs of natural gas-fired generation is not appropriate if one's goal

is to account fully for the costs and benefits of wind energy relative to its competition. Nonetheless, these comparisons still provide some sense for the short-term competitive environment facing wind energy, and convey how that environment has shifted over time.

REC Prices Remained Near "Alternative Compliance Payment" Levels in the Northeast, While Falling Modestly among Mid-Atlantic States

The wind power sales prices presented in this report reflect only the bundled sale of both electricity and RECs; excluded are projects that sell RECs separately from electricity, thereby generating two sources of revenue. REC markets are somewhat fragmented in the United States but consist of two distinct segments: compliance markets, in which RECs are purchased to meet state RPS obligations, and green power markets, in which RECs are purchased on a voluntary basis.

The figures below present indicative data of spot-market REC prices in both compliance and voluntary markets. Data for compliance markets focus on "Class I" or "Tier I" RPS requirements, as these are the RPS compliance markets in which wind energy would typically participate. Clearly, spot REC prices have varied substantially, both across states and over time within individual states, though prices within regional power markets (New England and the Mid-Atlantic) are linked to varying degrees. In New England compliance markets (other than Maine), REC prices in 2015 remained relatively high; prices hovered around the \$55/MWh alternative compliance payment (ACP) rate in Connecticut and Rhode Island, reflecting an expectation of continued under-supply in the region. Among Mid-Atlantic states, REC pricing generally ranged from \$15-20/MWh, falling modestly over the course of the year. Prices for RECs offered in the national and western voluntary markets and for RPS compliance in Texas remained at roughly \$1/MWh throughout the year, reflecting sustained over-supply.



Notes: Plotted values are the monthly averages of daily closing prices for REC vintages from the current or nearest future year traded.

Source: Marex Spectron.

8. Policy and Market Drivers

A long-term extension and phase down of federal incentives for wind projects is leading to a resurgent domestic market

Various policy drivers at both the federal and state levels, as well as federal investments in wind energy research and development (R&D), have been important to the expansion of the wind power market in the United States. At the federal level, the most important policy incentives in recent years have been the PTC (or, if elected, the ITC) and accelerated tax depreciation.

Initially established in 1994, the PTC provides a 10-year, inflation-adjusted credit that stood at \$23/MWh in 2015 (Table 5). The historical importance of the PTC to the U.S. wind industry is illustrated by the pronounced lulls in wind additions in the 4 years (2000, 2002, 2004, 2013) during which the PTC lapsed as well as the increased development activity often seen during the year in which the PTC is otherwise scheduled to expire (see Figure 1).

In December 2015, Congress passed a long term, 5-year extension of the PTC (or, if elected, the ITC). To qualify, projects must begin construction before January 1, 2020. Moreover, in May 2016, the IRS issued favorable guidance allowing four years for project completion after the start of construction, without the burden of having to prove continuous construction. This new guidance lengthened the "safe harbor" completion period from the previous term of two years.

In extending the PTC, Congress also put the wind industry on a glide path to a lower PTC, with a progressive reduction in the value of the credit for projects starting construction after 2016. Specifically, the PTC will phase down in 20%-per-year increments for projects starting construction in 2017 (80% PTC value), 2018 (60%), and 2019 (40%).

In addition to the PTC, a second form of federal tax support for wind is accelerated tax depreciation, which historically has enabled wind project owners to depreciate the vast majority of their investments over a 5- to 6-year period for tax purposes. Even more attractive "bonus depreciation" schedules have been periodically available, since 2008.

The near-term availability of the PTC is leading a resurgence of the U.S. wind power market, with solid continued growth in capacity additions expected over the next five years. The PTC phase down, on the other hand, imposes longer-term risks. Potentially helping to partially fill that void are the prospective impacts of more-stringent EPA environmental regulations on fossil plant retirement, energy costs, and demand for clean energy—which may create new opportunities for wind in the longer term. Of note are the actions to address carbon emissions that have been initiated at the EPA through the Clean Power Plan, though those regulations remain in limbo as legal challenges are resolved. Finally, R&D investments by the DOE continue, and could further reduce the cost of wind energy.

Table 5. History of the Production Tax Credit Extensions

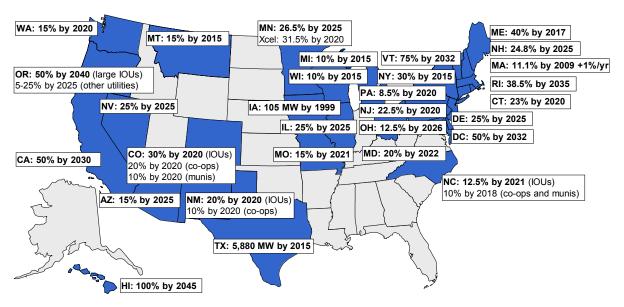
Legislation	Date Enacted	Start of PTC Window	End of PTC Window	Effective PTC Planning Window (considering lapses and early extensions)
Energy Policy Act of 1992	10/24/1992	1/1/1994	6/30/1999	80 months
Ticket to Work and Work Incentives Improvement Act of 1999	12/19/1999 (lapsed for >5 months)	7/1/1999	12/31/2001	24 months
Job Creation and Worker Assistance Act	3/9/2002 (lapsed for >2 months)	1/1/2002	12/31/2003	22 months
The Working Families Tax Relief Act	10/4/2004 (lapsed for >9 months)	1/1/2004	12/31/2005	15 months
Energy Policy Act of 2005	8/8/2005	1/1/2006	12/31/2007	29 months
Tax Relief and Healthcare Act of 2006	12/20/2006	1/1/2008	12/31/2008	24 months
Emergency Economic Stabilization Act of 2008	10/3/2008	1/1/2009	12/31/2009	15 months
The American Recovery and Reinvestment Act of 2009	2/17/2009	1/1/2010	12/31/2012	46 months
American Taxpayer Relief Act of 2012	1/2/2013 (lapsed for 1-2 days)	1/1/2013	Start construction by 12/31/2013	12 months (in which to start construction)
Tax Increase Prevention Act of 2014	12/19/2014 (lapsed for >11 months)	1/1/2014	Start construction by 12/31/2014	2 weeks (in which to start construction)
Consolidated Appropriations Act of 2016	12/18/2015 (lapsed for >11 months)	1/1/2015	Start construction by 12/31/2016	12 months to start construction and receive 100% PTC value
			Start construction by 12/31/2017	24 months to start construction and receive 80% PTC value
			Start construction by 12/31/2018	36 months to start construction and receive 60% PTC value
			Start construction by 12/31/2019	48 months to start construction and receive 40% PTC value

Notes: Although the table pertains only to PTC eligibility, the *American Recovery and Reinvestment Act of 2009* enabled wind projects to elect a 30% investment tax credit (ITC) in lieu of the PTC starting in 2009; though it is rarely used, this ITC option has been included in all subsequent PTC extensions (and will follow the same phase down schedule as the PTC, as noted in the table: from 30% to 24% to 18% to 12%). Section 1603 of the same law enabled wind projects to elect a 30% cash grant in lieu of either the 30% ITC or the PTC; this option was only available to wind projects that were placed in service from 2009-2012 (and that had started construction prior to the end of 2011), and was widely used during that period. Finally, beginning with the *American Taxpayer Relief Act of 2012*, which extended the PTC window through 2013, the traditional "placed in service" deadline was changed to a more-lenient "construction start" deadline, which has persisted in the two subsequent extensions. Related, the IRS initially issued safe harbor guidelines providing projects that meet the applicable construction start deadline up to two full years to be placed in service (without having to prove continuous effort) in order to qualify for the PTC. In May 2016, the IRS lengthened this safe harbor window to four full years.

Source: Berkeley Lab

State policies help direct the location and amount of wind power development, but current policies cannot support continued growth at recent levels

As of July 2016, mandatory RPS programs existed in 29 states and Washington D.C. (Figure 51). Attempts to weaken RPS policies have been initiated in a number of states, and in limited cases—thus far only Ohio in 2014 and Kansas in 2015—have led to a freeze or repeal of RPS requirements. In contrast, other states—including, most recently, California, Hawaii, Oregon, Rhode Island, and Washington, DC—have increased and extended their RPS targets. Vermont has created a new RPS.



Notes: The figure does not include mandatory RPS policies established in U.S. territories or non-binding renewable energy goals adopted in U.S. states and territories. Note also that many states have multiple "tiers" within their RPS policies, though those details are not summarized in the figure.

Source: Berkeley Lab

Figure 51. State RPS policies as of July 2016

Of all wind power capacity built in the United States from 2000 through 2015, roughly 51% is delivered to load serving entities (LSEs) with RPS obligations. In recent years, however, the role of state RPS programs in driving incremental wind power growth has diminished, at least on a national basis; just 24% of U.S. wind capacity additions in 2015 serve RPS requirements. Outside of the wind-rich Interior region, however, 88% of wind capacity additions in 2015 are serving RPS demand, and RPS requirements continue to serve as a strong driver for wind power growth.

In aggregate, existing state RPS policies will require 420 terawatt-hours of RPS-eligible forms of renewable electricity by 2030, at which point most state RPS requirements will have reached their maximum percentage targets. Based on the mix and capacity factors of resources currently used or contracted for RPS compliance, this equates to a total of roughly 130 GW of RPS-

⁶⁸ Although not shown in Figure 51, mandatory RPS policies also exist in a number of U.S. territories, and non-binding renewable energy goals exist in a number of U.S. states and territories.

eligible renewable generation capacity needed to meet RPS demand in 2030.⁶⁹ Given current renewable energy supplies available for RPS compliance, Berkeley Lab estimates that existing state RPS programs will require roughly 55 GW of renewable capacity additions by 2030, relative to the installed base at year-end 2015.⁷⁰ This equates to an average annual build-rate of roughly 3.7 GW per year, not all of which will be wind. This is below the average of 6.6 GW of wind power capacity added in each year over the past decade, and even further below the average 9.5 GW per year of total renewable generation capacity added during that time frame.

In addition to state RPS policies, utility resource planning requirements, principally in Western and Midwestern states, have spurred wind power additions in recent years. So has voluntary customer demand for "green" power (see box below for a discussion of burgeoning commercial interest in wind energy). State renewable energy funds provide support (both financial and technical) for wind power projects in some jurisdictions, as do a variety of state tax incentives. Finally, concerns about the possible impacts of global climate change continue to fuel interest in implementing and enforcing carbon reduction policies in some states and regions. The Northeast's Regional Greenhouse Gas Initiative (RGGI) cap-and-trade policy, for example, has been operational for a number of years, and California's greenhouse gas cap-and-trade program commenced operation in 2012, although carbon pricing seen to date has been too low to drive significant wind energy growth. How these dynamics will evolve as the EPA steps in to regulate power sector carbon emissions through the Clean Power Plan, and the role that RPS programs will play in achieving carbon emissions targets, both remain unclear.

-

⁶⁹ Berkeley Lab's projections of new renewable capacity required to meet each state's RPS requirements assume different combinations of renewable resource types for each RPS state. Those assumptions are based, in large part, on the actual mix of resources currently used or under contract for RPS compliance in each state or region. To the extent that RPS requirements are met with a larger proportion of high-capacity-factor resources than assumed in this analysis, or are met with biomass co-firing at existing thermal plants, the required new renewable capacity would be lower than the projected amount presented here.

⁷⁰ This estimate of required renewable electricity capacity additions is derived by comparing, on a region-by-region basis, the total amount of renewable capacity required for RPS demand in 2030 to the current installed base of renewable capacity deemed "available" for RPS compliance. Individual renewable generation facilities are deemed available for RPS compliance if they are currently under contract to LSEs with RPS obligations or if the energy is sold on a merchant basis into regional power markets with active RPS obligations. This analysis ignores several complexities that could result in either higher or lower incremental capacity needs, including: retirements of existing renewable capacity, constraints on intra-regional trade of renewable energy and RECs, and the possibility that resources currently serving renewable energy demand outside of RPS requirements (e.g., voluntary corporate procurement) might become available for RPS demand in the future.

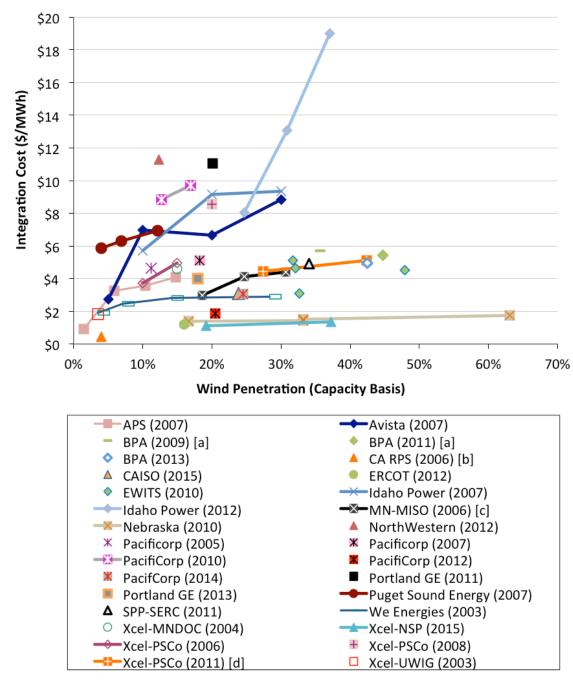
System operators are implementing methods to accommodate increased penetrations of wind energy, but transmission and other barriers remain

Wind energy output is variable and often the areas with the best wind speeds are distant from load centers. As a result, integration with the power system and provision of adequate transmission capacity are particularly important for wind energy. Concerns about, and solutions to, these issues have affected, and continue to impact, the pace of wind power deployment in the United States. Experience in operating power systems with wind energy is also increasing worldwide, leading to an emerging set of recently published best practices (e.g., Jones 2014, Milligan et al. 2015).

Figure 52 provides a selective listing of estimated wind integration costs at various levels of wind power capacity penetration from studies completed from 2003 through 2015. With one exception, costs estimated by the studies reviewed are below \$12/MWh—and often below \$5/MWh—for wind power capacity penetrations up to and even exceeding 40% of the peak load of the system in which the power is delivered. Variations in estimated costs across studies are due, in part, to differences in methodologies, definitions of integration costs, power system and market characteristics, wind energy penetration levels, fuel price assumptions, wind output forecasting details, and the degree to which thermal power plant cycling costs are included.⁷¹

Two new integration cost studies were completed in 2015: one for Northern States Power (NSP) in Minnesota as part of the Xcel-Minnesota integrated resource plan (NSP 2015), and one for the California IOUs as part of the Long Term Procurement Planning process (SCE 2015). The NSP integration costs of \$1.1–1.34/MWh in the most recent study are lower than the costs in previous studies in Minnesota due to the more-sophisticated operating practices currently employed by MISO than assumed in previous studies. The costs are primarily due to cycling coal and managing day-ahead forecast errors. The \$3.10/MWh integration cost for wind in California is an estimate of the marginal integration cost to accommodate more wind than already planned to meet the 33% RPS. Subsequent analysis by the authors, however, found that the estimates were unreliable largely due to methodological challenges in estimating integration costs (SCE 2016).

⁷¹ Caveats on the interpretation and comparability of these costs discussed in previous versions of this report still apply here.



Notes: [a] Costs in \$/MWh assume 31% capacity factor; [b] Costs represent 3-year average; [c] Highest over 3-year evaluation period; [d] Cost includes the coal cycling costs found in Xcel Energy (2011). Listed below the figure are the organizations for which each study was conducted, and the year in which the analysis was conducted or published.

Figure 52. Integration costs at various levels of wind power capacity penetration

In addition to studying wind integration costs, system operators and planners continue to make progress integrating wind into the power system. Strategies for reducing the challenges with wind integration include improved integration of wind into markets and improved coordination between balancing authorities:

- A recent wind integration study by the Southwest Power Pool (SPP 2016a) examined a scenario with enough wind to a have 60% instantaneous wind penetration. Even with additional transmission investments, significant wind curtailment was required to re-dispatch generation around contingency constraints. The study found that curtailment of wind could be substantially reduced if a greater share of wind participated in the market as a dispatchable variable energy resource, and recommended acceleration of certain transmission upgrades.
- ISO-NE is implementing a program to provide dispatch signals to wind generators through a "Do Not Exceed" dispatch program. The signal represents the maximum generation that can be accepted by each wind plant without affecting reliability. Similar to SPP findings, using this signal to control wind will lower overall wind curtailments and increase utilization of the transmission system.
- MISO incorporated a ramp product into its market operations to better manage uncertainty and variability—from wind, in some cases—and to provide a clear price signal for the value of flexible generation.
- In part due to growing shares of wind energy, ERCOT has proposed revisions to its ancillary service markets to unbundle different products and fine-tune requirements to match system conditions and resource capabilities. An economic analysis indicates that the improvements in market design could create benefits on the order of \$200 million over the next ten years (Newell et al. 2015).
- In June 2015, SPP began providing balancing services to the Western Area Power Administration's Upper Great Plains Region (WAPA-UGP), Basin Electric Power Cooperative and Heartland Consumers Power District. In October, the three utilities transferred control of their transmission system to SPP. WAPA-UGP is the first federal power marketing administration to become a full member of a regional transmission organization (RTO).
- The western Energy Imbalance Market (EIM) now includes the CAISO, PacifiCorp, and NV Energy. The EIM allows for increased transfers between the participating balancing authorities and it increases diversity of resources. As of the first quarter of 2016, the EIM was averaging \$6.3 million per month in consumer benefits and was reducing renewables curtailment by an average of 38 GWh/month (CAISO 2016). Work is underway to integrate Puget Sound Energy, Arizona Public Service, Portland General Electric, and Idaho Power into the EIM. In addition, PacifiCorp is exploring the prospect of becoming a full participating transmission owner within the CAISO, though the governance structure for a multi-state ISO is likely to be the key issue.
- A flexibility assessment of the Western Interconnection found that it is technically feasible to obtain 40% of energy from renewables, though with increasing curtailment. Increased regional coordination of balancing areas and measures that increase load during times when curtailment would occur, such as charging energy storage, can lower the amount of curtailment (E3 2015).

Recent studies of wind integration have sometimes focused on conditions that are likely to be the most challenging. For example, a recent GE transient stability⁷² study focused on spring light load, high wind periods in Wyoming when most of the region's synchronous generators will be

⁷² Transient stability is the ability of a synchronous power system to return to a stable condition following a relatively large disturbance.

offline (Miller et al. 2015). Maintaining stability after a major disturbance, like the loss of a large transmission line, will be challenging in some extreme hours under weak system conditions. Achieving acceptable performance is found to require combinations of traditional mitigation strategies, including the potential need for transmission system improvements, and non-traditional wind power plant controls. The changes to wind plant controls would alter the low voltage power logic in a wind plant to suppress active current during severe faults.

With growing shares of renewables and improvements to technology, wind is increasingly being asked to have the capability to supply grid services:

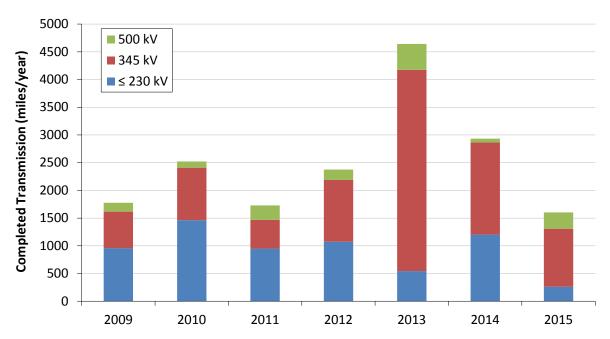
- FERC eliminated the exemption for asynchronous generators to provide reactive power for new interconnection requests in the pro forma Large Generator Interconnection Agreement (LGIA) and the Small Generator Interconnection Agreement (SGIA) (FERC 2016a). FERC cites the technological advances in inverters that make it inexpensive for new wind projects to be able to provide this function. FERC held a technical conference on compensation for reactive power supply in ISO markets in June 2016.
- FERC also released a Notice of Inquiry soliciting comments on whether the LGIA and SGIA should be revised to require all new generation resources to have frequency response capabilities as a precondition of interconnection (FERC 2016b). In addition, they asked whether existing resources should be required to have primary frequency response capabilities and arrangements for the provision and compensation of primary frequency response. FERC noted that ERCOT, ISO-NE, and PJM already require new generators, including wind in some cases, to have primary frequency response capabilities.
- NERC's Essential Reliability Services Task Force, noting a changing generation resource
 mix that includes more non-synchronous generation, recommends that all new resources have
 the capability to support voltage and frequency (NERC 2015).

It is also clear that transmission expansion helps to manage increasing wind energy:

- The recent wind integration study by SPP (SPP 2016a) confirmed the need for transmission projects already identified in the integrated transmission planning process and discovered additional transmission needs beyond the approved projects. Further, some of the approved transmission projects should be expedited so that the projects can be placed in-service sooner than originally scheduled. A separate study by SPP found that 348 transmission upgrades constructed between 2012 and 2014 will provide more than \$16 billion in benefits over a 40-year period (SPP 2016b).
- The NSP wind integration study (EnerNex 2014) found that existing wind curtailment in the region is almost all due to transmission congestion. Wind curtailment is expected to be considerably lower after planned regional transmission solutions—identified through the Multi-Value Project Portfolio Analysis—are put in place. Separately, MISO found that its Multi-Value Project, a series of transmission projects encompassing eight states, will have a benefit-to-cost ratio varying from 2.6 to 3.9 and create net benefits of \$13.1 to \$49.6 billion.

Transmission additions, however, slowed in 2015 compared to previous years. About 1,500 miles of transmission lines came online in 2015, the lowest amount since FERC began publishing this data in 2009 (see Figure 53). As of March 2016, FERC (2016c) estimates that another 14,000 miles of new transmission lines (or line upgrades) are proposed to come online

by March 2018, with about 5,500 miles of those having a high probability of completion. The Edison Electric Institute (EEI), meanwhile, projects that transmission investment will amount to \$22 billion in both 2016 and 2017 before falling to \$20 billion in 2018 (EEI 2015a). EEI states that 46 percent of the transmission projects it is tracking will, at least in part, support the integration of renewable energy (EEI 2015b).



Source: FERC monthly infrastructure reports

Figure 53. Miles of transmission projects completed, by year and voltage

Three major transmission projects that will transport wind energy were completed in 2015, summarized in Table 6. Moreover, AWEA (2016a) has identified 15 additional near-term transmission projects that, if all were completed, could transmit 52.4 GW of additional wind capacity, as depicted in Table 7.

Table 6. Transmission Projects Completed in 2015

Transmission Project Name (State)	Voltage (kilovolts)	Estimated In- service Date	Estimated Potential Wind Capacity, MW
Big Eddy – Knight and Central Ferry – Lower Monumental (OR, WA)	500	2015	4,200
Maine Power Reliability Program	345, 115	2015	n/a
Most CapX Segments (MN, ND, SD, WI)	Mostly 345, some 230 and 165 lines	2014-16	2,000
Total Potential Wind Capacity			6,200

Source: AWEA (2016a)

Table 7. Planned Near-Term Transmission Projects and Potential Wind Capacity

Transmission Project Name (State)	Voltage (kilovolts)	Estimated In- service Date	Estimated Potential Wind Capacity, MW
Tehachapi Phases 2-3 (CA)	500	2016	3,800
MISO Multi-Value Projects (IA, IL, MI, MN, MO, ND, SD, WI)	345, one 765 line	2015-2020	14,000
Grand Prairie Gateway (IL)	345	2017	1,000
Nebraska City – Mullin Creek – Sibley (NE- MO; SPP Priority Project)	345	2017	(SPP Priority Project Component)
Southline Transmission Project (AZ, NM)	345, 230	2018	1,000
TransWest Express (WY)	600 DC	2018	3,000
Power for the Plains (NM, OK, TX)	115, 230, 345	2016-2020	n/a
Clean Line Projects (AZ, IA, KS, NM, OK)	600 DC	2018-2020	16,000
Pawnee – Daniels Park (CO)	345	2019-2020	500
Gateway West (ID, WY)	500	2019-2021	3,000
Sunzia (AZ, NM)	500	2020	3,000
Boardman-Hemingway (ID, OR)	500	2020	1,000
Gateway South (WY, UT)	500	2020-2022	1,500
SPP 2012 ITP10 Projects (KS, MO, OK, TX)	345	2018-2022	3,500
Total Potential Wind Capacity 52,400			

Source: AWEA (2016a)

FERC held a technical conference in June 2016 to review the implementation of Order 1000, which was intended to improve intra- and inter-regional transmission planning and cost allocation. Order 1000 requires public utility transmission providers to: participate in a regional transmission planning process; establish procedures to identify transmission needs driven by public policy requirements; and coordinate with neighboring planning regions to solve mutual transmission needs (FERC 2011). Recent literature has suggested that Order 1000 needs to be reexamined. A 2015 report found that most transmission investments are based on meeting reliability needs, and that the increased market efficiency and economic benefits of transmission are not evaluated comprehensively in transmission plans. That same study found that interregional transmission planning is still very much in its infancy and has not resulted in identifying viable inter-regional transmission projects (Pfeifenberger et al. 2015). Others note that Order 1000 has resulted in a wide variance of cost allocation methodologies because FERC left cost allocation to RTOs and individual transmission owners (Edelston 2015).

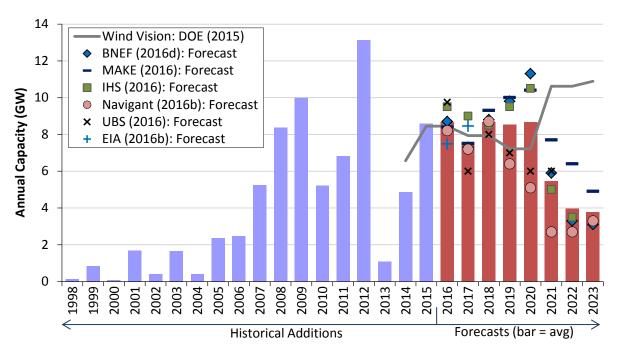
Transmission also figured prominently in two legal proceedings. The Seventh Circuit Court of Appeals upheld FERC's requirement in Order 1000 that transmission owners remove the right-of-first-refusal provisions for building new transmission from their transmission tariffs (U.S. Court of Appeals 2016). In April 2016, DOE announced it will use its authority under Section 1222 of the Energy Policy Act of 2005 (EPAct) to participate in the development of a planned Clean Line Energy Partners LLC transmission project, known as the Plains and Eastern project, that would stretch from western Oklahoma to eastern Arkansas (DOE 2016). If developed, the

project could transmit up to 4,000 MW. This is the first time that the DOE is utilizing its authority under EPAct to participate in the development of a transmission project.

9. Future Outlook

With the 5-year extension of the PTC signed in December 2015 and IRS guidance allowing a safe-harbor period of 4 years in which to complete construction, but with progressive reductions in the value of the credit for projects starting construction after 2016, annual wind power capacity additions are projected to continue at a rapid clip for several years, before declining. Near-term additions will also be driven by improvements in the cost and performance of wind power technologies, which continue to yield very low power sales prices. Growing corporate demand for wind energy and state-level policies play important roles as well, as might utility action to proactively get out ahead of possible future CPP compliance obligations.

Among the forecasts for the domestic market presented in Figure 54, expected capacity additions average more than 8,000 MW/year from 2016 to 2020, somewhat higher than the pace of growth witnessed since 2007. With AWEA (2016b) reporting that more than 15,000 MW of wind power were under construction or at an advanced stage of development at the end of the first quarter of 2016, the industry appears to be on track to meet these expectations at least in the early years.



Source: AWEA (historical additions), individual forecasts, DOE 2015 (Wind Vision)

Figure 54. Wind additions: historical installations, projected growth, DOE Wind Vision report

Forecasts for 2021 to 2023 show a downturn in additions as the PTC progressively delivers less value to the sector. Expectations for continued low natural gas prices, modest electricity demand growth, and lower near-term renewable energy demand from state RPS policies also put a damper on growth expectations, as do inadequate transmission infrastructure and competition from solar energy in certain regions of the country. At the same time, declines in the price of wind energy over the last half decade have been substantial, helping to improve the economic position of wind even in the face of low natural gas prices. The potential for continued

technological advancements and cost reductions enhance the prospects for longer-term growth, as does burgeoning corporate demand for wind energy and state RPS requirements. EPA's Clean Power Plan, depending on its ultimate fate, may also create new markets for wind. Moreover, new transmission in some regions is expected to open up high-quality wind resources to development. Given these diverse underlying potential trends, wind capacity additions, especially after 2020, remain deeply uncertain.

In 2015, the DOE published its *Wind Vision* report (DOE 2015), which analyzed a scenario in which wind energy reaches 10%, 20%, and 35% of U.S. electric demand in 2020, 2030, and 2050, respectively. Plotted in Figure 54 are the annual gross wind additions from 2014 through 2023 analyzed by the DOE in order to ultimately reach those percentage targets. As shown, actual and projected wind additions from 2014 through 2020 are consistent with the pathway envisioned in the DOE report. Projected growth from 2021 through 2023, however, is well below the *Wind Vision* pathway. As discussed in DOE (2015), and as further suggested by these comparisons, achieving 10%, 20%, and 35% wind energy on the timeframe analyzed by the DOE is likely to require efforts that go beyond business as usual expectations.

Appendix: Sources of Data Presented in this Report

Installation Trends

Data on wind power additions in the United States (as well as certain details on the underlying wind power projects) largely come from AWEA (2016a). We thank AWEA for the use of their comprehensive wind project database. Annual wind power capital investment estimates derive from multiplying these wind power capacity data by weighted-average capital cost data, provided elsewhere in the report. Data on non-wind electric capacity additions come from ABB Ventyx's Velocity database, except that solar data come from GTM Research. Information on offshore wind power development activity in the United States was compiled by NREL.

Global cumulative (and 2015 annual) wind power capacity data come from Navigant (2016a) but are revised to include the U.S. wind power capacity used in the present report. Wind energy as a percentage of country-specific electricity consumption is based on year-end wind power capacity data and country-specific assumed capacity factors that come from Navigant (2016a), as revised based on a review of EIA country-specific wind power data. For the United States, the performance data presented in this report are used to estimate wind energy production. Country-specific projected wind generation is then divided by country-specific electricity consumption. The latter is estimated based on actual past consumption as well as forecasts for future consumption based on recent growth trends (these data come from EIA).

The wind power project installation map was created by NREL, based in part on AWEA's database of projects. Wind energy as a percentage contribution to statewide electricity generation is based exclusively on wind generation data divided by in-state total electricity generation in 2015, using EIA data.

Data on wind power capacity in various interconnection queues come from a review of publicly available data provided by each ISO, RTO, or utility. Only projects that were active in the queue, but as yet built, at the end of 2015 are included. Suspended projects are not included in these listings. Data on projects that are in the nearer-term development pipeline comes from ABB (2016), AWEA (2016b), and EIA (2016c).

Industry Trends

Turbine manufacturer market share data are derived from the AWEA wind power project database, with some processing by Berkeley Lab.

Information on wind turbine and component manufacturing comes from NREL, AWEA, and Berkeley Lab, based on a review of press reports, personal communications, and other sources. Data on U.S. nacelle assembly capability come from Bloomberg NEF (2015a) and AWEA (2016a), while U.S. tower and blade manufacturing capability come from AWEA (2016a). The listings of manufacturing and supply-chain facilities are not intended to be exhaustive. OEM profitability data come from a Berkeley Lab review of turbine OEM annual reports (where necessary, focusing only on the wind energy portion of each company's business).

Data on U.S. imports and exports of selected wind turbine equipment come primarily from the Department of Commerce, accessed through the U.S. International Trade Commission (USITC), and they can be obtained from the USITC's DataWeb (http://dataweb.usitc.gov/). The analysis of USITC trade data relies on the "customs value" of imports as opposed to the "landed value" and hence does not include costs relating to shipping or duties. The table below lists the specific trade codes used in the analysis presented in this report.

Harmonized Tariff Schedule (HTS) Codes and Categories Used in Wind Import Analysis

HTS Code	Description	Years applicable	Notes
8502.31.0000	wind-powered generating sets	2005-2015	includes both utility-scale and small wind turbines
7308.20.0000	towers and lattice masts	2006-2010	not exclusive to wind turbine components
7308.20.0020	towers and lattice masts - tubular	2011-2015	virtually all for wind turbines
8501.64.0020	AC generators (alternators) from 750 to 10,000 kVA	2006-2011	not exclusive to wind turbine components
8501.64.0021	AC generators (alternators) from 750 to 10,000 kVA for wind-powered Generating sets	2012–2015	exclusive to wind turbine components
8412.90.9080	other parts of engines and motors	2006-2011	not exclusive to wind turbine components
8412.90.9081	wind turbine blades and hubs	2012–2015	exclusive to wind turbine components
8503.00.9545	parts of generators (other than commutators, stators, and rotors)	2006-2011	not exclusive to wind turbine components
8503.00.9546	parts of generators for wind-powered generating sets	2012–2015	exclusive to wind turbine components
8503.00.9560	machinery parts suitable for various machinery (including wind-powered generating sets)	2014-2015	not exclusive to wind turbine components; nacelles when shipped without blades can be included in this category ⁷³

As shown in the table, some trade codes are exclusive to wind, whereas others are not. As such, assumptions are made for the proportion of wind-related equipment in each of the non-wind-specific HTS trade categories. These assumptions are based on: an analysis of recent trade data where separate, wind-specific trade categories exist; a review of the countries of origin for the imports; personal communications with USITC and AWEA staff; USITC trade cases; and import patterns in the larger HTS trade categories. The assumptions reflect the rapidly increasing imports of wind equipment from 2006 to 2008, the subsequent decline in imports from 2008 to 2010, and the slight increase from 2010 to 2012. To reflect uncertainty in these proportions, a $\pm 10\%$ variation is applied to the larger trade categories that include wind turbine components for all HTS codes considered, except for nacelles shipped under 8503.00.9560. For nacelles, the variation applied is $\pm 50\%$ of the total estimated wind import value under HTS code 8503.00.9560.

⁷³ This was effective in 2014 as a result of Customs and Border Protection ruling number HQ H148455 (April 4, 2014). That ruling stated that nacelles alone do not constitute wind-powered generating sets, as they do not include blade assembly which are essential to wind-powered generating sets as defined in the HTS.

Information on wind power financing trends was compiled by Berkeley Lab, based in part on data from AWEA and Chadbourne and Park LLP. Wind project ownership and power purchaser trends are based on a Berkeley Lab analysis of the AWEA project database.

Wind Turbine Technology Trends

Information on turbine hub heights, rotor diameters, specific power, and IEC Class was compiled by Berkeley Lab based on information provided by AWEA, turbine manufacturers, standard turbine specifications, Federal Aviation Administration data, web searches, and other sources. The data include only projects with turbines greater than or equal to 50 kW that began operation in 1998 through 2015. Some turbines—especially in 2015—have not been rated within a numerical IEC Class, but are instead designated as Class "S," for special. In such instances, they were not included in the reported average fleet-wide IEC class over time. Estimates of the quality of the wind resource in which turbines are located were generated as discussed below.

Performance, Cost, and Pricing Trends

Wind project performance data were compiled overwhelmingly from two main sources: FERC's *Electronic Quarterly Reports* and EIA Form 923. Additional data come from FERC Form 1 filings and, in several instances, other sources. Where discrepancies exist among the data sources, those discrepancies are handled based on judgment of Berkeley Lab staff. Data on curtailment are from ERCOT (for Texas), MISO (for the Midwest), PJM, NYISO, SPP (for the Great Plains states), ISO-New England, and BPA (for the Northwest).

The following procedure was used to estimate the quality of the wind resource in which wind projects are located. First, the location of individual wind turbines and the year in which those turbines were installed were identified using Federal Aviation Administration (FAA) Digital Obstacle (i.e., obstruction) files (accessed via ABB Ventyx' Intelligent Map) and FAA Obstruction Evaluation files combined with Berkeley Lab and AWEA data on individual wind projects. Second, NREL used 200-meter resolution data from AWS Truepower—specifically, gross capacity factor estimates—to estimate the quality of the wind resource for each of those turbine locations. These gross capacity factors are derived from average mapped 80-meter wind speed estimates, wind speed distribution estimates, and site elevation data, all of which are run through a standard wind turbine power curve (common to all sites). To create an index of wind resource quality, the resultant average wind resource quality (i.e., gross capacity factor) estimate for turbines installed in the 1998–1999 period is used as the benchmark, with an index value of 100% assigned in that period. Comparative percentage changes in average wind resource quality for turbines installed after 1998–1999 are calculated based on that 1998–1999 benchmark year. When segmenting wind resource quality into categories, the following AWS Truepower gross capacity factors are used: the "lower" category includes all projects or turbines with an estimated gross capacity factor of less than 40%; the "medium" category corresponds to ≥40%–45%; the "higher" category corresponds to $\geq 45\%-50\%$; and the "highest" category corresponds to $\geq 50\%$. Not all turbines could be mapped by Berkeley Lab for this purpose; the final sample included 41,149 turbines of the 41,999 installed from 1998 through 2014 in the continental United States over that period, or 98%.

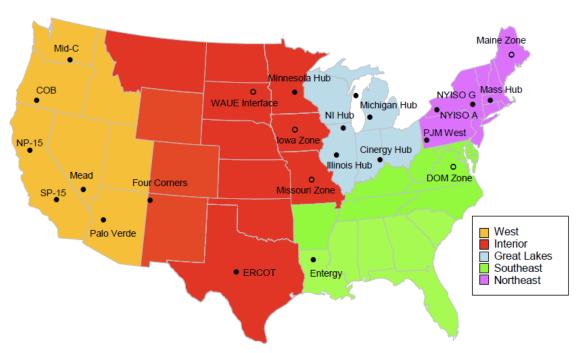
Wind turbine transaction prices were compiled by Berkeley Lab. Sources of transaction price data vary, but most derive from press releases, press reports, and Securities and Exchange

Commission and other regulatory filings. In part because wind turbine transactions vary in the turbines and services offered, a good deal of intra-year variability in the cost data is apparent. Additional data come from Vestas corporate reports and Bloomberg NEF.

Berkeley Lab used a variety of public and some private sources of data to compile capital cost data for a large number of U.S. wind projects. Data sources range from pre-installation corporate press releases to verified post-construction cost data. Specific sources of data include EIA Form 412, FERC Form 1, various Securities and Exchange Commission filings, filings with state public utilities commissions, *Windpower Monthly* magazine, AWEA's *Wind Energy Weekly*, the DOE and Electric Power Research Institute Turbine Verification Program, *Project Finance* magazine, various analytic case studies, and general web searches for news stories, presentations, or information from project developers. For 2009–2012 projects, data from the Section 1603 Treasury Grant program were used extensively. Some data points are suppressed in the figures to protect data confidentiality. Because the data sources are not equally credible, little emphasis should be placed on individual project-level data; instead, the trends in those underlying data offer insight. Only wind power cost data from the contiguous lower-48 states are included.

Wind project O&M costs come primarily from two sources: EIA Form 412 data from 2001–2003 for private power projects and projects owned by POUs, and FERC Form 1 data for IOU-owned projects. Some data points are suppressed in the figures to protect data confidentiality.

Wind PPA price data are based on multiple sources, including prices reported in FERC's *Electronic Quarterly Reports*, FERC Form 1, avoided-cost data filed by utilities, pre-offering research conducted by bond rating agencies, and a Berkeley Lab collection of PPAs. Wholesale electricity price data were compiled by Berkeley Lab from the Intercontinental Exchange (ICE) as well as ABB Ventyx's Velocity database (which itself derives wholesale price data from the ICE and the various ISOs). Earlier years' wholesale electricity price data come from FERC (2007, 2005). Pricing hubs included in the analysis, and within each region, are identified in the map below. To compare the price of wind to the cost of future natural gas-fired generation, the reference case fuel cost projection from the EIA's *Annual Energy Outlook 2016* is converted from \$/MMBtu into \$/MWh using a heat rate of 7 MMBtu/MWh. REC price data were compiled by Berkeley Lab based on information provided by Marex Spectron.



Note: The pricing nodes represented by an open, rather than closed, bullet do not have complete pricing history back through 2003.

Figure 55. Map of regions and wholesale electricity price hubs used in analysis

Policy and Market Drivers

The wind energy policy and grid integration sections were written by staff at Berkeley Lab and Exeter Associates, based on publicly available information.

Future Outlook

This chapter was written by staff at Berkeley Lab, based largely on publicly available information.

References

- ABB. 2016. Velocity Suite Data Product. Accessed June 2016.
- American Wind Energy Association (AWEA). 2016a. U.S. Wind Industry Annual Market Report: Year Ending 2015. Washington, D.C.: American Wind Energy Association.
- American Wind Energy Association (AWEA). 2016b. AWEA U.S. Wind Industry First Quarter 2016 Market Report. Washington, D.C.: American Wind Energy Association.
- AWS Truepower. 2016. 2015 Wind Trends Bulletin: wind speed performance.
- Bloomberg New Energy Finance (Bloomberg NEF). 2015. Yes, US clean energy, there is a Santa Claus. Published December 18, 2015.
- Bloomberg New Energy Finance (Bloomberg NEF). 2015a. *H1 2015 North America Wind Market Outlook*. Published April 9, 2015.
- Bloomberg New Energy Finance (Bloomberg NEF). 2016a. *Wind Turbine Price Index: H1 2016*. Published April 2016.
- Bloomberg New Energy Finance (Bloomberg NEF). 2016b. *Q1 2016 Global Wind Market Outlook*. Published February 18, 2016.
- Bloomberg New Energy Finance (Bloomberg NEF). 2016c. *H1 2016 O&M Index Report*. Published May 2016.
- Bloomberg New Energy Finance (Bloomberg NEF). 2016d. *US Wind to 2030: Mapping the Post-PTC Landscape*. Presentation to WINDPOWER 2016. May 24, 2016.
- Bloomberg New Energy Finance (Bloomberg NEF). 2016e. *H1 2016 Tax Equity Market Outlook*. Published May 31, 2016.
- Bolinger, M. 2014. An Analysis of the Costs, Benefits, and Implications of Different Approaches to Capturing the Value of Renewable Energy Tax Incentives. LBNL-6350E. Berkeley, California: Lawrence Berkeley National Laboratory.
- Bolinger, M. and R. Wiser. 2011. *Understanding Trends in Wind Turbine Prices Over the Past Decade*. LBNL-5119E. Berkeley, California: Lawrence Berkeley National Laboratory.
- California ISO (CAISO). 2016. *Benefits for Participating in EIM: Q1 2016 Report.* Folsom, California: California Independent System Operator.
- Chadbourne & Parke LLP. 2016a. "New Trends in Financing Wind Farms." *Project Finance Newswire*. Published June 2016.
- Chadbourne & Parke LLP. 2016b. "Cost of Capital: 2016 Outlook." *Project Finance Newswire*. Published February 2016.
- Department of Energy (DOE). 2016. *Record of Decision in re Application of Clean Line Energy Partners LLC*, No. 6450-01-P. Washington, D.C.: U.S. Department of Energy.
- Department of Energy (DOE). 2015. *Wind Vision: A New Era for Wind Power in the United States*. DOE/GO-102015-4557. Washington, D.C.: U.S. Department of Energy.
- Edelston, B. *FERC Order 1000: A Solution Looking for a Problem?* Presentation to the Harvard Electricity Policy Group. December 10, 2015.
- Edison Electric Institute (EEI). 2015a. Actual and Planned Transmission Investment by Investor-Owned Utilities (2009-2018). Washington, D.C.: Edison Electric Institute.

- Edison Electric Institute (EEI). 2015b. *Transmission Projects: At A Glance*. Published March 2015. Washington, D.C.: Edison Electric Institute.
- EDP Renováveis (EDPR). 2016. EDP Renováveis, 2015 Results. Published February 24, 2016.
- Energy and Environmental Economics, Inc. (E3). 2015. Western Interconnection Flexibility Assessment. San Francisco, CA: Energy and Environmental Economics, Inc.
- Energy Information Administration (EIA). 2016a. *Annual Energy Outlook 2016*. Washington D.C.: Energy Information Administration.
- Energy Information Administration (EIA). 2016b. *Short-Term Energy Outlook*. Published July 12. Washington D.C.: Energy Information Administration.
- Energy Information Administration (EIA). 2016c. *Electric Power Monthly, with Data for April* 2016 Washington D.C.: Energy Information Administration.
- EnerNex Corp. 2014. NSP Wind Integration Study. Prepared for Northern States Power.
- Federal Energy Regulatory Commission (FERC). 2016a. *Reactive Power Requirements for Non-Synchronous Generation*. 155 FERC ¶ 61,277. Docket No. RM16-1; June 16, 2016. Washington D.C.: Federal Energy Regulatory Commission.
- Federal Energy Regulatory Commission (FERC). 2016b. Essential Reliability Services and the Evolving Bulk-Power System—Primary Frequency Response. 154 FERC ¶ 61,117. Docket No. RM16-6; February 18, 2016. Washington D.C.: Federal Energy Regulatory Commission.
- Federal Energy Regulatory Commission (FERC). 2016c. *Energy Infrastructure Update for March 2016* (and previous editions). Washington, D.C.: Federal Energy Regulatory Commission.
- Federal Energy Regulatory Commission (FERC). 2011. *Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities*. 136 FERC ¶ 61,051. Docket No. RM10-23; Order No.1000. July 21, 2011. Washington D.C.: Federal Energy Regulatory Commission.
- Federal Energy Regulatory Commission (FERC). 2007. 2006 State of the Markets Report. Washington, D.C.: Federal Energy Regulatory Commission.
- Federal Energy Regulatory Commission (FERC). 2005. 2004 State of the Markets Report. Washington, D.C.: Federal Energy Regulatory Commission.
- Federal Reserve Board. 2016. *Selected Interest Rates (Daily) H.15*. http://www.federalreserve.gov/releases/h15/data.htm (accessed on June 6, 2016).
- Fripp, M. and R. Wiser. 2006. Analyzing the Effects of Temporal Wind Patterns on the Value of Wind-Generated Electricity at Different Sites in California and the Northwest. LBNL-60152. Berkeley, California: Lawrence Berkeley National Laboratory.
- Hopper, A. *Cape Wind Lease Suspension Order*. U.S. Department of the Interior. Bureau of Ocean Energy Management. Published July 24, 2015.
- IHS Energy. 2016. The US Wind Market Outlook: Capturing the Wind Fall of PTC Extension and a Transition to a Post-PTC World. Presentation to WINDPOWER 2016. May 24, 2016.
- Jones, L. E. 2014. Renewable Energy Integration: Practical Management of Variability, Uncertainty, and Flexibility in Power Grids. Academic Press.

- Lantz, E. 2013. *Operations Expenditures: Historical Trends and Continuing Challenges*. Presentation to WINDPOWER 2013. May 7, 2013.
- MAKE. 2016. Public Policy and Turbine Technology Drive Robust United States Market Outlook Through 2025. Presentation to WINDPOWER 2016. May 24, 2016.
- Midcontinent Independent System Operator (MISO). 2014. MTEP14 MVP Triennial Review. Carmel, Indiana: Midcontinent Independent System Operator.
- Miller, N.W., B. Leonardi, and R. D'Aquila. 2015. Western Wind and Solar Integration Study Phase 3A: Low Levels of Synchronous Generation. NREL/TP-5D00-64822. Golden, Colorado: National Renewable Energy Laboratory.
- Milligan, M., B. Kirby, T. Acker, M. Alstrom, B. Frew, M. Goggin, W. Lasher, M. Marquis, and D. Osborn. 2015. *Review and Status of Wind Integration and Transmission in the United States: Key Issues and Lessons Learned*. NREL/TP 5D00 61911. Golden, Colorado: National Renewable Energy Laboratory.
- Moné, C., T. Stehly and B. Maples. 2015. 2014 Cost of Wind Energy Review. Golden, Colorado: National Renewable Energy Laboratory. Musial, W., D. Elliott, J. Fields, Z. Parker, G. Scott and C. Draxl. 2013a. Assessment of Offshore Wind Energy Leasing Areas for the BOEM Maryland Wind Energy Area. Golden, Colorado: National Renewable Energy Laboratory.
- Musial, W., D. Elliott, J. Fields, Z. Parker, G. Scott and C. Draxl. 2013b. *Assessment of Offshore Wind Energy Leasing Areas for the BOEM New Jersey Wind Energy Area*. Golden, Colorado: National Renewable Energy Laboratory.
- Navigant. 2016a. World Wind Energy Market Update 2016. Navigant Research.
- Navigant. 2016b. U.S. Wind Market Outlook Pathways to Competitiveness. Presentation to WINDPOWER 2016. May 24, 2016.
- Newell, S.A., R. Carroll, P. Ruiz, and W. Gorman. 2015. *Cost-Benefit Analysis of ERCOT's Future Ancillary Services (FAS) Proposal*. Austin, TX: Electricity Reliability Council of Texas (ERCOT).
- North American Electric Reliability Corporation (NERC). 2015. Essential Reliability Services Task Force Measures Framework Report. Atlanta, GA: North American Electric Reliability Corporation.
- Northern States Power (NSP). 2015. 2015 Resource Plan: Appendix E Renewable Energy. Xcel Energy.
- Orrell, A. and N. Foster. 2016. *2015 Distributed Wind Market Report*. Richland, Washington: Pacific Northwest National Laboratory.
- Pfeifenberger, J., J. Chang, and A. Sheilendranath. 2015. *Toward More Effective Transmission Planning: Addressing the Costs and Risks of an Insufficiently Flexible Electricity Grid.* Washington, D.C.: WIRES.
- Southern California Edison (SCE). 2016. Southern California Edison Company's Renewable Integration Cost Adder Report. R16-02-007. San Francisco, California: California Public Utilities Commission.

- Southern California Edison (SCE). 2015. Report of Southern California Edison Company on Renewable Integration Cost Study for 33% Renewables Portfolio Standard. R13-12-010. San Francisco, CA: California Public Utilities Commission.
- Southwest Power Pool (SPP). 2016a. 2016 Wind Integration Study.
- Southwest Power Pool (SPP). 2016b. The Value of Transmission. Published January 26, 2016.
- Smith, A., T. Stehly and W. Musial. 2015. 2014–2015 Offshore Wind Technologies Market Report. Golden, Colorado: National Renewable Energy Laboratory.
- UBS. 2016. *The Future of Distributed & Renewable Resources*. Moody's Solar and Distributed Generation Conference.
- U.S. Court of Appeals, 7th Circuit. 2016. *MISO Transmission Owners, et al., v. Federal Energy Regulatory Commission, et al.* Justia Dockets and Filings.

WIND ENERGY WEBSITES

U.S. DEPARTMENT OF ENERGY WIND PROGRAM energy.gov/eere/wind

LAWRENCE BERKELEY NATIONAL LABORATORY emp.lbl.gov/research-areas/renewable-energy

NATIONAL RENEWABLE ENERGY LABORATORY nrel.gov/wind

SANDIA NATIONAL LABORATORIES sandia.gov/wind

PACIFIC NORTHWEST NATIONAL LABORATORY energyenvironment.pnnl.gov/eere/

LAWRENCE LIVERMORE NATIONAL LABORATORY missions.llnl.gov/energy/technologies/wind-forecasting

OAK RIDGE NATIONAL LABORATORY ornl.gov/science-area/clean-energy

ARGONNE NATIONAL LABORATORY anl.gov/energy/renewable-energy

IDAHO NATIONAL LABORATORY inl.gov

SAVANNAH RIVER NATIONAL LABORATORY srnl.doe.gov/energy-secure.htm

AMERICAN WIND ENERGY ASSOCIATION awea.org

DATABASE OF STATE INCENTIVES FOR RENEWABLES & EFFICIENCY dsireusa.org

INTERNATIONAL ENERGY AGENCY – WIND AGREEMENT ieawind.org

NATIONAL WIND COORDINATING COLLABORATIVE nationalwind.org

UTILITY VARIABLE-GENERATION INTEGRATION GROUP uvig.org/newsroom/

FOR MORE INFORMATION ON THIS REPORT, CONTACT:

Ryan Wiser, Lawrence Berkeley National Laboratory 510-486-5474; RHWiser@lbl.gov

Mark Bolinger, Lawrence Berkeley National Laboratory 603-795-4937; MABolinger@lbl.gov

On the Cover Portland General Electric Tucannon Wind Farm Photo by Josh Bauer/NREL 38025

TECHNOLOGIES MARKET REPORT

For more information, visit: energy.gov/eere/wind DOE/GO-10216-4885 • August 2016

U.S. DEPARTMENT OF ENERGY

Energy Efficiency & Renewable Energy

