

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO**

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IN THE MATTER OF THE APPLICATION)
OF PUBLIC SERVICE COMPANY OF)
COLORADO FOR APPROVAL OF ITS) PROCEEDING NO. 16A-0396E
2016 ELECTRIC RESOURCE PLAN)

DIRECT TESTIMONY OF CONNIE L. PAOLETTI

ON

BEHALF OF

PUBLIC SERVICE COMPANY OF COLORADO

May 27, 2016

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ELECTRIC RESOURCE PLAN)**

SUMMARY OF THE DIRECT TESTIMONY OF CONNIE L. PAOLETTI

Ms. Connie Paoletti is the Manager, Regional Transmission Initiatives for Xcel Energy Services, Inc. In this role, she is responsible for overseeing transmission policy and projects involving participation with other utilities. This includes conducting strategic analyses for potential transmission projects, evaluating and negotiating joint agreements, and also engaging in stakeholder outreach.

Ms. Paoletti supports Section 2.5 “Transmission Resources” of Volume 2 of the Company’s 2016 Electric Resource Plan. Ms. Paoletti provides an overview of Public Service’s transmission system, describes the transmission planning process utilized in Colorado, and how Public Service’s transmission planning process integrates with regional and subregional joint planning groups and forums. Ms. Paoletti also provides an overview of the Federal Energy Regulatory Commission’s Large Generator Interconnection Procedure. Finally, Ms. Paoletti explains how Public Service’s Transmission Planning group assesses potential generation interconnection capacity and presents the general findings of Public Service’s Large Generator Interconnection Studies contained in Table 2.5-3 of Volume 2.

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GLOSSARY OF ACRONYMS AND DEFINED TERMS

<u>Acronym/Defined Term</u>	<u>Meaning</u>
CCPG	Colorado Coordinated Planning Group
CPCN	Certificate of Public Convenience and Necessity
ERP	Electric Resource Plan
ERZ	Electric Resource Zone
FERC	Federal Energy Regulatory Commission
IPP	Independent Power Producer
ISD	In Service Date
kW	Kilowatt
LGIP	Large Generator Interconnection Procedure
MW	Megawatt
NERC	North American Electric Reliability Corporation
OATT	Open Access Transmission Tariff
Public Service or Company	Public Service Company of Colorado
RTO	Regional Transmission Organization
SB-100	Senate Bill 07-100
WECC	Western Electricity Coordinating Council
Xcel Energy	Xcel Energy Inc.
XES	Xcel Energy Services Inc.

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DIRECT TESTIMONY OF CONNIE L. PAOLETTI

1 **I. INTRODUCTION, QUALIFICATIONS, AND PURPOSE OF TESTIMONY**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. My name is Connie L. Paoletti. My business address is 1800 Larimer Street,
4 Suite 600, Denver, Colorado 80202.

5 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

6 A. I am employed by Xcel Energy Services Inc. (“XES”). XES is a wholly-owned
7 subsidiary of Xcel Energy Inc. (“Xcel Energy”), and provides an array of
8 support services to Public Service Company of Colorado (“Public Service” or
9 “Company”) and the other utility operating company subsidiaries of Xcel
10 Energy on a coordinated basis. My title is Manager, Regional Transmission
11 Initiatives.

12 **Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THE PROCEEDING?**

13 A. I am testifying on behalf of Public Service.

1 **Q. HAVE YOU INCLUDED A DESCRIPTION OF YOUR QUALIFICATIONS,**
2 **DUTIES, AND RESPONSIBILITIES?**

3 A. Yes, a description of my qualifications, duties, and responsibilities is included
4 after the conclusion of my testimony.

1 **Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?**

2 A. The purpose of my testimony is to provide an overview of Public Service's
3 transmission system, to explain the transmission planning process, and discuss
4 Public Service's transmission system capabilities. Specifically, my testimony
5 supports Volume 2 of the Company's 2016 Electric Resource Plan, Section 2.5
6 Transmission Resources.

7 **Q. PLEASE DESCRIBE THE PUBLIC SERVICE TRANSMISSION SYSTEM.**

8 A. Public Service owns and maintains approximately 4,670 circuit-miles of
9 transmission lines, all located inside Colorado. The transmission lines are rated
10 44 kV, 69 kV, 115 kV, 138 kV, 230 kV, and 345 kV. The Company also uses 223
11 transmission and distribution substations located throughout the state to deliver
12 electric energy to its 1.4 million customers in Colorado. Public Service's
13 transmission network runs primarily along the Front Range of Colorado; however,
14 the Company utilizes transmission across the entire state to bring generation
15 resources to its load centers, as illustrated in Volume 2, Figure 2.5-1 Colorado
16 Transmission Map. Public Service's territory includes the Denver-Boulder metro
17 area, the I-70 corridor to Grand Junction, the San Luis Valley, Greeley, Sterling,
18 and Brush. Public Service also serves the following wholesale customers: Holy
19 Cross Energy, Yampa Valley Electric Association, Grand Valley Rural Power,
20 Intermountain Rural Electric Association, the Town of Center, and the City of
21 Burlington. Several neighboring transmission systems connect to Public Service,
22 including: Arkansas River Power Authority, Black Hills Energy, Colorado Springs

1 Utilities, Platte River Power Authority, Tri-State Generation and Transmission,
2 and the Western Area Power Administration.

1 **II. TRANSMISSION PLANNING OVERVIEW**

2 **Q. DESCRIBE THE TRANSMISSION PLANNING PROCESS IN THE STATE OF**
3 **COLORADO.**

4 A. The transmission planning process in Colorado is intended to facilitate the
5 development of electric infrastructure in a manner that maintains reliability and
6 meets load growth. Because Colorado does not have a Regional Transmission
7 Organization (“RTO”), each Transmission Provider in the state is responsible for
8 planning its own transmission system. To ensure this process is as seamless and
9 efficient as possible, Public Service also participates in transmission planning at
10 sub-regional and regional levels. All of the Transmission Providers in Colorado
11 belong to the sub-regional transmission planning group known as the Colorado
12 Coordinated Planning Group (“CCPG”). CCPG was formed in 1991 and is a
13 planning forum that operates to assure a high degree of reliability through joint
14 planning, development and operation of high voltage transmission located in the
15 Rocky Mountain Region. The group meets on a regular basis to discuss
16 coordinated transmission planning in an open stakeholder process. Consistent
17 with Commission Rules 3625-3627, which set forth the process for planning and
18 coordinating additional electric transmission in Colorado, CCPG Transmission
19 Providers (Black Hills Energy, TSGT and Public Service) filed their coordinated
20 10-year transmission plan for the state of Colorado in Proceeding 16M-0063E on
21 February 1, 2016.¹ As the plan details, transmission planning is a highly

¹ 10-Year Transmission Plan and 20-Year Conceptual Scenario Report for the State of Colorado.

1 collaborative process that includes significant coordination between
2 Transmission Providers as well as interested stakeholders. In addition, CCPG
3 has a working group that evaluates 20-year conceptual transmission scenarios
4 through regular meetings in an open stakeholder process as required by Rule
5 3627, which Public Service filed on February 1, 2016 in Proceeding No. 16M-
6 0063E. The 10-year plan and 20-year scenarios are available at
7 [http://www.transmission.xcelenergy.com/Planning/Planning-for-Public-Service-](http://www.transmission.xcelenergy.com/Planning/Planning-for-Public-Service-Company-of-Colorado/Colorado-Public-Utilities-Commission-Rule-3627)
8 [Company-of-Colorado/Colorado-Public-Utilities-Commission-Rule-3627.](http://www.transmission.xcelenergy.com/Planning/Planning-for-Public-Service-Company-of-Colorado/Colorado-Public-Utilities-Commission-Rule-3627)

9 **Q. HOW DOES CCPG INTEGRATE WITH OTHER JOINT PLANNING FORUMS?**

10 A. The CCPG is one of three sub-regional planning groups that comprise
11 WestConnect, which is a regional planning forum within the Western Electricity
12 Coordinating Council (“WECC”). WestConnect includes CCPG plus two other
13 sub-regional planning groups: the Southwest Area Transmission Group and the
14 Sierra Subregional Planning Group. Figure CLP-1 below shows the regional and
15 sub-regional planning groups within WECC.

1 **Figure CLP-1 WECC Regional and Sub-Regional Planning Groups**



2 WestConnect is one of four planning regions within WECC that were established,
3 in part, to comply with Federal Energy Regulatory Commission (“FERC”) Order
4 No. 1000, Transmission Planning and Cost Allocation by Transmission Owning
5 and Operating Public Utilities (“Order 1000”).² The other three planning regions
6 are Columbia Grid, Northern Tier Transmission Group, and the California
7 Independent System Operator. WestConnect has 24 members, including 16
8 Transmission Owners, five Independent Transmission Developers, and one Key

² Available at <http://www.ferc.gov/industries/electric/indus-act/trans-plan.asp>.

1 Interest Group. The WestConnect footprint includes nine western states.
2 WestConnect is committed to coordinating its work with other regional efforts to
3 achieve as much consistency as possible in the Western Interconnection.

4 **Q. PLEASE PROVIDE MORE DETAIL ON WECC'S FUNCTIONS.**

5 A. WECC is a North American Electric Reliability Corporation ("NERC") region
6 responsible for coordinating and promoting Bulk Electric System reliability in the
7 entire Western Interconnection. Figure 2.6-1 in Volume 2 shows WECC in
8 relationship to other NERC regions. As a result of WECC's territory size (1.8
9 million square miles) and diverse geographic characteristics, WECC members
10 face unique challenges in coordinating daily system operations and the long-
11 range planning necessary to provide reliable electric service to customers within
12 its footprint. WECC's charter requires its members to work collaboratively to
13 assess stakeholder and market needs and to develop cost-effective
14 enhancements to the western wholesale electricity market.

15 **Q. HOW DOES PUBLIC SERVICE COMMUNICATE ITS TRANSMISSION
16 PROCESS AND PROJECTS TO STAKEHOLDERS?**

17 A. The Company is committed to an open and transparent transmission planning
18 process and uses a variety of avenues to inform stakeholders of its transmission
19 plans. In 2007, FERC issued Order No. 890, which required Transmission
20 Providers to revise their Open Access Transmission Tariffs ("OATT") to describe
21 how their transmission planning process complies with nine planning principles,
22 including coordination, openness, and transparency. Since then, Public Service
23 has facilitated two open meetings each year to present stakeholders with

1 information regarding current transmission plans and allow them to engage with
2 the transmission planning process. The Company also performs outreach related
3 to Rule 3627. The CCPG generally meets four times a year, and those meetings
4 are also open to stakeholder participation. The Company and WestConnect
5 maintain contact information lists for stakeholders. The lists include
6 representatives from other utilities and stakeholders representing government
7 agencies, non-governmental organizations, consulting firms, law firms,
8 transmission customers, other interested individuals and groups, and state and
9 local officials. The Company also engages in project-specific outreach with land
10 owners, and local businesses and organizations within a given project impact
11 area.

12 **Q. HOW DOES THE COORDINATED 10-YEAR TRANSMISSION PLAN RELATE**
13 **TO THE REQUIREMENTS OF SENATE BILL 07-100 (C.R.S. § 40-2-126)?**

14 A. C.R.S. § 40-2-126, which was enacted by Colorado Senate Bill 07-100 (“SB07-
15 100”), requires rate-regulated Colorado electric utilities to designate “energy
16 resource zones” and file a biennial transmission plan. SB07-100 defines an
17 energy resource zone as “a geographic area in which transmission constraints
18 hinder the delivery of electricity to Colorado consumers, the development of new
19 electric generation facilities to serve Colorado consumers, or both.” SB07-100
20 also requires such utilities to develop and file every two years with the
21 Commission a transmission plan “for the construction or expansion of
22 transmission facilities” that would provide access to the designated energy
23 resource zones “consistent with the timing of the development of beneficial

1 energy resources located in or near such zones.”³ Consistent with the statute,
2 the Company filed its biennial “Senate Bill 07-100 Designation of Energy
3 Resource Zones and Transmission Planning Report” on October 30, 2015 in
4 Proceeding No. 15M-0856E. This report is available at
5 [http://www.transmission.xcelenergy.com/Planning/Planning-for-Public-Service-
6 Company-of-Colorado](http://www.transmission.xcelenergy.com/Planning/Planning-for-Public-Service-Company-of-Colorado). Projects included in Public Service’s biennial
7 transmission plan are also included in its coordinated 10-year transmission plan.
8 Taken together, these plans provide the Commission with a comprehensive
9 overview of the Company’s projected long and short-term transmission planning
10 needs at the utility level and statewide.

³ SB07-100 required regulated Colorado electric utilities to submit their biennial transmission plans “[o]n or before October 31 of each odd-numbered year,” however, the General Assembly recently passed House Bill 16-1091 in March 2016, which amends this timeline to require regulated electric utilities to submit plans “[b]iennially, on or before a date determined by the Commission, commencing in 2016.”

1 **III. SYSTEM CAPABILITIES**

2 **Q. DOES THE COMPANY PERFORM STUDIES TO DETERMINE**
3 **TRANSMISSION SYSTEM INJECTION CAPABILITIES?**

4 A. Yes, the Company is required to conduct interconnection studies under its OATT,
5 which incorporates FERC's Large Generator Interconnection Procedure ("LGIP")
6 requirements. These studies provide public information about the feasibility of
7 connection to Public Service's transmission system.

8 **Q. PLEASE EXPLAIN THE FERC LARGE GENERATOR INTERCONNECTION**
9 **PROCEDURE.**

10 A. In July 2003, by Order No. 2003, FERC issued standard interconnection
11 procedures and a standard generator interconnection agreement that apply to all
12 generators larger than 20 MW.⁴ The LGIP requires public utilities that offer
13 transmission services to also offer non-discriminatory, standardized
14 interconnection service to promote open access transmission service and
15 facilitate the development of new electric infrastructure.

16 **Q. PLEASE EXPLAIN HOW PUBLIC SERVICE'S TRANSMISSION PLANNING**
17 **GROUP ASSESSES POTENTIAL GENERATION CAPACITY THAT COULD**
18 **BE ADDED TO ITS TRANSMISSION SYSTEM.**

19 A. Public Service's Transmission Planning group routinely performs Feasibility
20 Studies, System Impact Studies, and Facilities Studies for new generator
21 interconnection requests under the LGIP in accordance with well-established

⁴ Available at <http://www.ferc.gov/industries/electric/indus-act/gi/stnd-gen.asp>

1 FERC rules. These LGIP requests are associated with the FERC process, which
2 has been incorporated into Public Service's OATT. When a request for
3 interconnection is made, the developer's request is entered into the Generator
4 Interconnection Queue ("Queue") and the Transmission Planning group conducts
5 the requisite studies to evaluate the cost, the time to construct, and the feasibility
6 to add the proposed generation to its transmission system. Consistent with
7 FERC rules, the Company conducts these studies on a stand-alone basis without
8 considering any other "queued" generation requests. The Company also
9 performs a variety of other transmission studies as part of its routine 10-year
10 planning process, capital budget process, and its required NERC reliability
11 assessments. Among other things, the Company relies on the results of those
12 technical studies and its transmission planning experience to determine the
13 approximate amount of potential generation injection available on Public
14 Service's transmission system. The Company will evaluate and verify the
15 feasibility of any new generation to be interconnected to the transmission system
16 as a result of the 2016 Electric Resource Plan. Any new generation will need to
17 follow the LGIP requirements.

18 **Q. WHAT ARE THE GENERAL FINDINGS OF THE COMPANY'S LARGE**
19 **GENERATOR INTERCONNECTION STUDIES CONTAINED IN TABLE 2.5-3**
20 **OF VOLUME 2?**

21 A. Table 2.5-3 illustrates the results of LGIP studies that show the potential amount
22 of generation that could be interconnected to Public Service's transmission
23 system. The values in this table are based on the most recent LGIP studies

1 performed consistent with the FERC LGIP. Public Service generally performs
2 these studies on a stand-alone basis. Thus, for a given interconnection study,
3 only the specified resource for that particular request is modeled; resources
4 submitted in prior requests, sometimes referred to as lower queue number
5 requests, are not included. Accordingly, this table should not be used to draw
6 conclusions regarding the cumulative capability of any combination of stand-
7 alone results. Moreover, one must take into account the fact that the results
8 displayed only reflect the results achieved at the time the study was performed.

9 **Q. HOW DO THESE INJECTION CAPABILITIES ALLOW FOR THE**
10 **INTERCONNECTION OF NEW GENERATION?**

11 A. The generation injection capability values provided Table 2.5-3 are
12 approximations based on the most recent LGIP studies performed pursuant to
13 requests to interconnect to Public Service's transmission system. The
14 generation injection capability values may change when Public Service performs
15 new specific resource and resource portfolio transmission studies – either for
16 resource evaluation or for an LGIP request – or simply when conditions change
17 on the system. Subsequent generation interconnection studies will be necessary
18 to determine the future injection capability for a specific interconnection.

19 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

20 A. Yes, it does.

Connie L. Paoletti

Statement of Qualifications

Connie L. Paoletti is the Manager of Regional Transmission Initiatives for Xcel Energy Services. In this position, Connie has responsibility for overseeing transmission policy and projects involving participation with other utilities, including conducting strategic analyses for potential transmission projects, evaluating and negotiating joint agreements, and engaging in stakeholder outreach.

Connie joined Xcel Energy in 2002. From early 2002 through the end of 2014, Connie was a Senior Originator in the Commercial Operations group. In that role, she worked on long-term structured transactions within the Midwest and West regions. From 1998 to 2001, Connie was employed by the Princeton Energy Programme as an instructor on energy risk management. Between 1986 and 1998, Connie was employed by Dow Chemical, Phillips Petroleum, and Reliant Energy in the Technical Sales, Trading and Origination roles.

Connie graduated from the Illinois Institute of Technology in 1986 with a Bachelor of Science degree in Chemical Engineering.