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 A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR COLORADO'S POWER PATHWAY 345 KV TRANSMISSION PROJECT AND ASSOCIATED FINDINGS REGARDING NOISE AND MAGNETIC FIELD REASONABLENESS	**)**	**PROCEEDING NO. 21-XXXXE**

DIRECT TESTIMONY OF BROOKE A. TRAMMELL

ON

BEHALF OF

PUBLIC SERVICE COMPANY OF COLORADO

March 2, 2021

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

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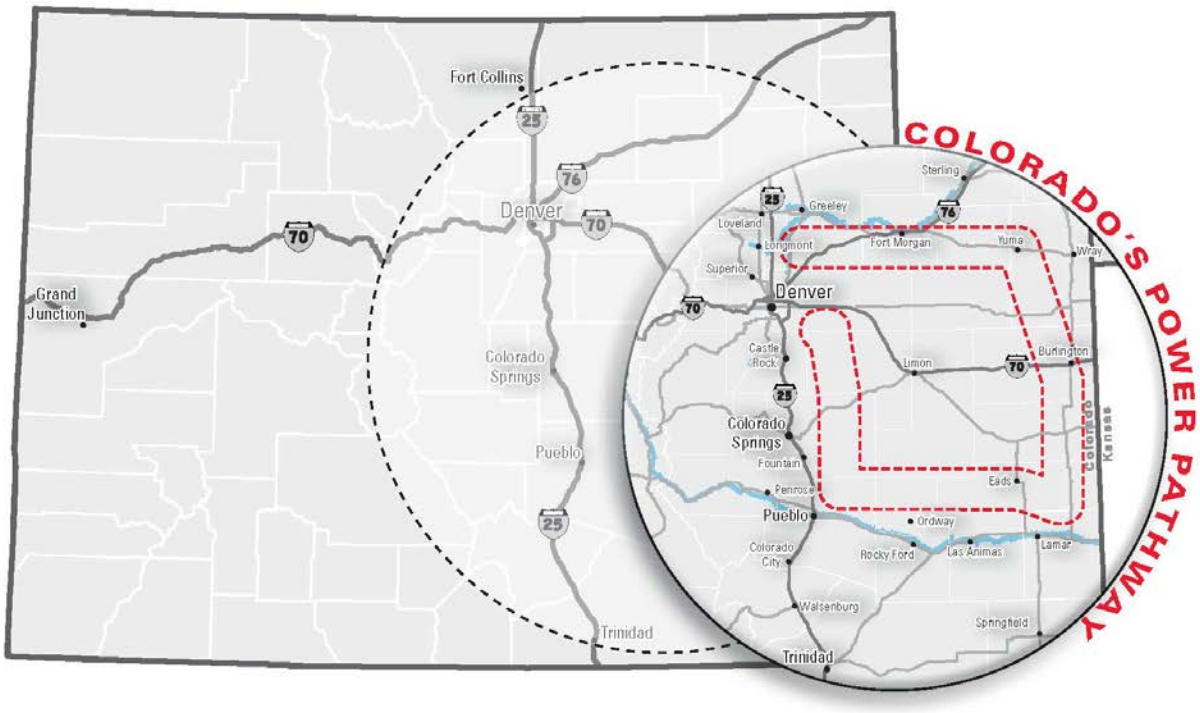
SUMMARY OF THE DIRECT TESTIMONY OF BROOKE A. TRAMMELL

Ms. Trammell is the Regional Vice President, Rates and Regulatory Affairs for Xcel Energy Services Inc. She is responsible for providing leadership, direction, and technical expertise related to regulatory processes and functions for Public Service Company of Colorado ("Public Service" or the "Company").

In her Direct Testimony, Ms. Trammell presents the Company's request for a Certificate of Public Convenience and Necessity ("CPCN") for Colorado's Power Pathway 345 kilovolt ("kV") Transmission Project (the "Pathway Project" or the "Project") and related approvals. The Pathway Project involves the construction of an approximately 560-mile, 345 kV double circuit network transmission system through northeastern, eastern, and southeastern Colorado, as well as associated substation additions and expansions. When completed, it will connect Colorado's Front Range to areas of the state that are rich with renewable energy resource development potential, but do not currently have a backbone network transmission system capable of integrating these new

clean energy resources that will be needed to meet the State's clean energy goals as set forth in Senate Bill 19-236 ("SB19-236") and House Bill 19-1261 ("HB19-1261"). The map below shows the vicinity of the Pathway Project.



As Ms. Trammell explains, the Project will allow Colorado to unlock new renewable energy resources in the state's Energy Resource Zones ("ERZs") 1, 2, 3, and 5. This is both aligned with the transmission planning objectives of Senate Bill 07-100 ("SB07-100") and a necessary stepping stone toward achieving the 80 percent by 2030 carbon reduction target established by SB19-236. Ms. Trammell discusses why the Company is proposing the Pathway Project in advance of its forthcoming 2021 Electric Resource Plan and Clean Energy Plan ("2021 ERP & CEP") filing, to provide potential developers of clean energy generation resources in eastern Colorado with the certainty of a nearby

strategic backbone transmission resource capable of getting this location-constrained clean generation to load. To further these objectives, the Company is also requesting the Commission consider a possible 90-mile transmission line extension to the Pathway Project called the May Valley-Longhorn Extension. The May Valley-Longhorn Extension would enhance the Project's clean energy benefits by establishing additional transmission interconnection opportunities for potential generation developers in the wind-rich southeastern area of Colorado.

In support of the Company's requests, Ms. Trammell first provides an overview of the Pathway Project, the benefits the Project will provide, and the need for the Project from both a policy and technical standpoint, as well as discusses the stakeholder process behind the Project's development. She also addresses how the Project aligns with potential long-term developments, including 2050 emission reduction goals and ongoing discussions regarding regional markets. Next, Ms. Trammell discusses how the Pathway Project is aligned with both existing and proposed Commission rules regarding transmission and resource planning—explaining why it is now increasingly necessary to build out transmission capabilities *before* procuring new generation. In addition, she discusses how the Project will interplay with the 2021 ERP & CEP and why it will play a critical role in aligning the Company's Phase II resource acquisition with the directives of SB19-236, HB19-1261, and SB07-100.

Ms. Trammell also discusses the potential for partnership in owning, constructing and operating the Pathway Project, and how the Company anticipates a partnership would relate to the Company's requests in this proceeding. She then discusses the estimated cost of approximately $1.7 billion for the Project, the Company's planned

approach to constructing the Project, and how it will recover Project costs. As Ms. Trammell explains, the Company is requesting neither a presumption of prudence for its cost estimate nor approval of a cost contingency in this proceeding; rather, the Company is requesting that the Commission find that the Project is reasonable and in the public interest based on the Company's $1.7 billion cost estimate, consistent with recent Commission decisions. Ms. Trammell also addresses the proposed timing and sequencing of the segments of the Pathway Project, which will be key in maximizing the Project's benefits by allowing developers bidding into the Phase II competitive solicitation in the 2021 ERP & CEP to take advantage of Federal tax credits for wind and solar resources currently set to expire after 2025. Ms. Trammell also presents the Company's proposed reporting metrics, which align with similar reporting the Company is conducting for other recent transmission projects. Finally, Ms. Trammell discusses the economic benefits of the Pathway Project and how the Company proposes to incorporate the use of Best Value Employment Metrics as part of constructing the Project.

Overall, the Pathway Project is an investment in Colorado's energy future that will support the State's policy goals for years to come. To that end, Ms. Trammell recommends that the Commission: (1) issue Public Service a CPCN for the Pathway Project and associated substation expansions and additions, as set forth in the Company's Direct Testimony; (2) find that the Project is reasonable and in the public interest based on the Company's cost estimate for the Project of approximately $1.7 billion, consistent with recent Commission findings; (3) find that the expected maximum magnetic field and noise levels associated with the Pathway Project are reasonable and require no further mitigation or prudent avoidance measures; and (4) consider also

issuing a CPCN in this proceeding for the proposed May Valley-Longhorn Extension, along with associated findings that the May Valley-Longhorn Extension is reasonable and in the public interest based on the Company's cost estimate of approximately $250 million, and that the expected maximum magnetic field and noise levels associated with the May Valley-Longhorn Extension are reasonable and require no further mitigation or prudent avoidance measures.

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

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DIRECT TESTIMONY OF BROOKE A. TRAMMELL

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GLOSSARY OF ACRONYMS AND DEFINED TERMS

Acronym/Defined Term	Meaning
2021 ERP & CEP	Company's upcoming Electric Resource Plan and Clean Energy Plan filings
80x30 Task Force Report	CCPG 80x30 Task Force Phase I Transmission Report
ALJ	Administrative Law Judge
AALR	Ambient-Adjusted Line Ratings
BHE	Black Hills Energy
BVEM	Best Value Employment Metrics
CCPG	Colorado Coordinated Planning Group
CEC	Colorado Energy Consumers
CEO	Colorado Energy Office
CEPP	Colorado Energy Plan Portfolio
CIEA	Colorado Independent Energy Association
Commission	Colorado Public Utilities Commission
COSSA/SEIA	Colorado Solar and Storage Association/Solar Energy Industries Association
CPCN	Certificate of Public Convenience and Necessity
CSU	Colorado Springs Utilities
DLR	Dynamic Line Ratings
ERP	Electric Resource Plan
ERZ	Energy Resource Zone
FACTS	Flexible AC Transmission System devices
GDA	Generation Development Area

Acronym/Defined Term	**Meaning**
HB19-1261	House Bill 19-1261
Interwest	Interwest Energy Alliance
ITC	Investment Tax Credit
kV	Kilovolt
LFR Project	Lamar-Front Range Project
MW	Megawatt
Pathway Project or Project	Colorado's Power Pathway 345 kV Transmission Project
PRPA	Platte River Power Authority
PTC	Production Tax Credit
Public Service or Company	Public Service Company of Colorado
RFP	Request for Proposals
SATOA	Storage as Transmission-only Asset
SB19-236	Senate Bill 19-236
SB07-100	Senate Bill 07-100
SIL	Surge Impedance Loading
SPS	Southwestern Public Service Company
TCA	Transmission Cost Adjustment
Tri-State	Tri-State Generation and Transmission Association, Inc.
WRA	Western Resource Advocates
XES	Xcel Energy Services Inc.
Xcel Energy	Xcel Energy Inc.

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DIRECT TESTIMONY OF BROOKE A. TRAMMELL

I. INTRODUCTION, QUALIFICATIONS, AND PURPOSE OF TESTIMONY

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Brooke A. Trammell. My business address is 1800 Larimer Street, Denver, Colorado 80202.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT POSITION?

A. I am employed by Xcel Energy Services Inc. ("XES") as Regional Vice President, Rates and Regulatory Affairs. XES is a wholly owned subsidiary of Xcel Energy Inc. ("Xcel Energy") and provides an array of support services to Public Service Company of Colorado ("Public Service" or the "Company") and the other utility operating company subsidiaries of Xcel Energy on a coordinated basis.

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

A. I am testifying on behalf of Public Service.

Q. PLEASE SUMMARIZE YOUR RESPONSIBILITIES AND QUALIFICATIONS.

A. As Regional Vice President, Rates and Regulatory Affairs, I am responsible for providing leadership, direction, and technical expertise related to regulatory processes and functions for Public Service. My duties include the design and implementation of Public Service's regulatory strategy and programs, as well as the direction and supervision of Public Service's regulatory activities, including oversight of rate filings, administration of regulatory tariffs, rules and forms, regulatory case direction and administration, compliance reporting, and complaint responses. I have previously testified as a policy witness on behalf of Public Service in several proceedings before the Colorado Public Utilities Commission ("Commission"). A more detailed description of my qualifications, duties, and responsibilities is set forth in my Statement of Qualifications at the conclusion of my Direct Testimony.

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. As the Company's regulatory and transmission policy witness, I provide a summary of the Company's overall filing in support of its Verified Application for a Certificate of Public Convenience and Necessity ("CPCN") for Colorado's Power Pathway 345 kilovolt ("kV") Transmission Project (the "Pathway Project" or the "Project") that the Company is bringing forward ahead of its forthcoming 2021 Electric Resource Plan and Clean Energy Plan ("2021 ERP & CEP"). In addition to introducing the other Company witnesses providing direct testimony in this proceeding, I discuss the basis, need, and policy rationale for the Pathway Project, its associated benefits, and its consistency with the Commission's transmission rules. Next, I explain the

status of ongoing dialogue with other Colorado utilities—in particular, Black Hills Energy ("BHE"), Tri-State Generation and Transmission Association, Inc. ("Tri-State"), Colorado Springs Utilities ("CSU") and Platte River Power Authority ("PRPA")—to potentially partner on the Pathway Project. While Public Service is filing this Application and seeking an individual CPCN for the Project, I discuss the procedural process that would occur if other Commission-jurisdictional utilities bring forward their own applications seeking approval for a CPCN for their respective interest in the Project. I discuss and support the Company's requested findings for the Pathway Project, including cost estimation and cost recovery. I describe the Company's planned sequencing and in-service dates for the Pathway Project's segments, an approach intended to maximize the opportunity to capture the benefits of tax-advantaged clean energy resources from the 2021 ERP & CEP. I also discuss additional transmission investments the Company anticipates will be needed in the future to implement its 2021 ERP & CEP, and when and how the Company proposes to bring these projects forward for approval. Finally, I discuss the economic development benefits of the project and the Company's proposal to voluntarily report on Best Value Employment Metrics ("BVEM") associated with transmission line construction.

Q. ARE YOU SPONSORING ANY ATTACHMENTS AS PART OF YOUR DIRECT TESTIMONY?

A. No.

Q. PLEASE INTRODUCE THE OTHER WITNESSES SUPPORTING THE COMPANY'S FILING AND DESCRIBE THEIR AREAS OF TESTIMONY.

A. In addition to my Direct Testimony, six Company witnesses are providing direct testimony and accompanying attachments on behalf of Public Service in this proceeding. Table BAT-D-1 below lists these witnesses along with the topics they cover in their Direct Testimonies.

Table BAT-D-1: Introduction of Company Witnesses

Witness	Summary of Testimony
Alice K. Jackson	Ms. Jackson outlines the near- and long-term vision for the Pathway Project as it relates to achieving Colorado's energy policy goals and the Company's own emission reduction efforts. Ms. Jackson also previews the potential for partnership with both jurisdictional and non-jurisdictional utilities.
James F. Hill	Mr. Hill supports the Pathway Project from a resource planning perspective. He discusses the electric resource planning process, the need for transmission ahead of the 2021 ERP & CEP, and why the Pathway Project is needed to unlock the new, cost-effective generation resources that will allow the Company and the State to progress toward 2030 emission reduction goals.
Amanda R. King	Ms. King supports the Pathway Project from a transmission planning perspective. She describes the overall objective of the Project and provides an overview of the various components of the Project and their purpose. She discusses the collaborative transmission planning studies that have led the Company to identify the need for and final configuration of the Pathway Project. Ms. King also discusses alternatives the Company considered prior to selecting the Project as proposed.
Brian J. Richter	Mr. Richter supports and sponsors the Company's cost estimates for the Pathway Project. He discusses the Company's cost estimation processes and how they have evolved in light of recent CPCN proceedings. He also explains how the Company has the necessary project management processes and expertise to manage and construct a project of this magnitude.
Byron R. Craig	Mr. Craig provides a detailed description of and supports the engineering design of the various components of the Pathway Project, as well as alternative engineering designs considered. He discusses key engineering design assumptions that informed the Project's cost estimates. He also sponsors the results of the noise and magnetic field analyses that were performed for the Project and discusses how the noise and magnetic field levels associated with the Project are reasonable.

Witness	Summary of Testimony
Carly R. Rowe	Ms. Rowe discusses the siting, permitting, and land rights activities that have occurred and are planned to occur with respect to the Pathway Project. She discusses key assumptions that informed the cost estimates for land rights acquisition and siting, routing, and permitting activities. She also sponsors and discusses study area maps for the Project segments and the proposed May Valley-Longhorn Extension.

Q. PLEASE SUMMARIZE THE COMPANY'S REQUESTS IN THIS PROCEEDING.

A. I recommend and request that the Commission issue Public Service a CPCN for the approximately 560-mile 345 kV, double circuit Pathway Project and associated substation expansions and additions. I also recommend and request that the Commission find that the Project is reasonable and in the public interest based on the Company's cost estimate of approximately $1.7 billion for the Project, consistent with recent Commission findings. I further recommend the Commission find that, consistent with Commission Rule 3206(e) and (f), the expected maximum magnetic field and noise levels associated with the Pathway Project are reasonable and require no further mitigation or prudent avoidance measures.

In addition to the Pathway Project, I recommend the Commission consider issuing a CPCN in this proceeding for an additional transmission component of the Project—the May Valley-Longhorn transmission extension ("May Valley-Longhorn Extension")—that would further enhance the geographic diversity of renewable resource projects that could be bid into utility resource plans and come online in the future. The May Valley-Longhorn Extension would be a 90-mile, 345 kV, double circuit extension from the southeastern corner of the Pathway Project near the Lamar area south to near Vilas, Colorado, with an estimated cost of

approximately $250 million. The May Valley-Longhorn Extension is being proposed as an option because it would establish further transmission interconnection opportunities for clean energy resource developers in the wind-rich southeastern area of the state. Having a well-planned and strategic generation tie line to this area would not only attract bidders and facilitate clean energy resource development, but would also minimize the potential likelihood of clean energy project developers needing to construct multiple generation tie lines in this region to interconnect to the Pathway Project at potentially high costs to individual generation projects. If the Commission desires to see the May Valley-Longhorn Extension developed by 2025 and issues a CPCN for this component, the Company also requests the Commission find the expected maximum magnetic field and noise levels associated with the May Valley-Longhorn Extension are reasonable and require no further mitigation or prudent avoidance measures. If other utility interest in partnering on the May Valley-Longhorn Extension is established, appropriate requests associated with this transmission facility would be included in the subsequent CPCN applications anticipated by Commission-jurisdictional utility partners through the procedural process I discuss in Section IV of my Direct Testimony.

II. PROJECT SUMMARY, PURPOSE, NEED, AND BENEFITS

Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A. In this section of my Direct Testimony, I provide a summary of the Pathway Project, discuss the need for the Project, and address its benefits.

A. Project Overview

Q. PLEASE PROVIDE A SUMMARY OF THE PATHWAY PROJECT.

A. The Pathway Project involves constructing an approximately 560-mile, 345 kV double circuit network transmission system between four existing substations and three new substations.[1] The Project will connect the Front Range load center(s) to areas of northeastern, eastern, and southeastern Colorado that are rich with renewable energy resource development potential, but do not currently have a backbone[2] network transmission system that can integrate new clean energy resources needed to meet the State's clean energy goals. As detailed in the Direct Testimonies of the Company's other witnesses, the Project is comprised of five Project segments. The Project will be constructed in three phases with certain segments planned to be in-service by the end of 2025 (Segments 2 and 3) and subsequent segments planned to be in-service by 2026 (Segment 1) and 2027 (Segments 4 and 5). I describe the planned sequencing of the Project later in my testimony. The northern terminus of the Pathway Project will be at the Company's

[1] The three new substations will be switching stations. A switching station is a type of substation that operates at a single voltage level.

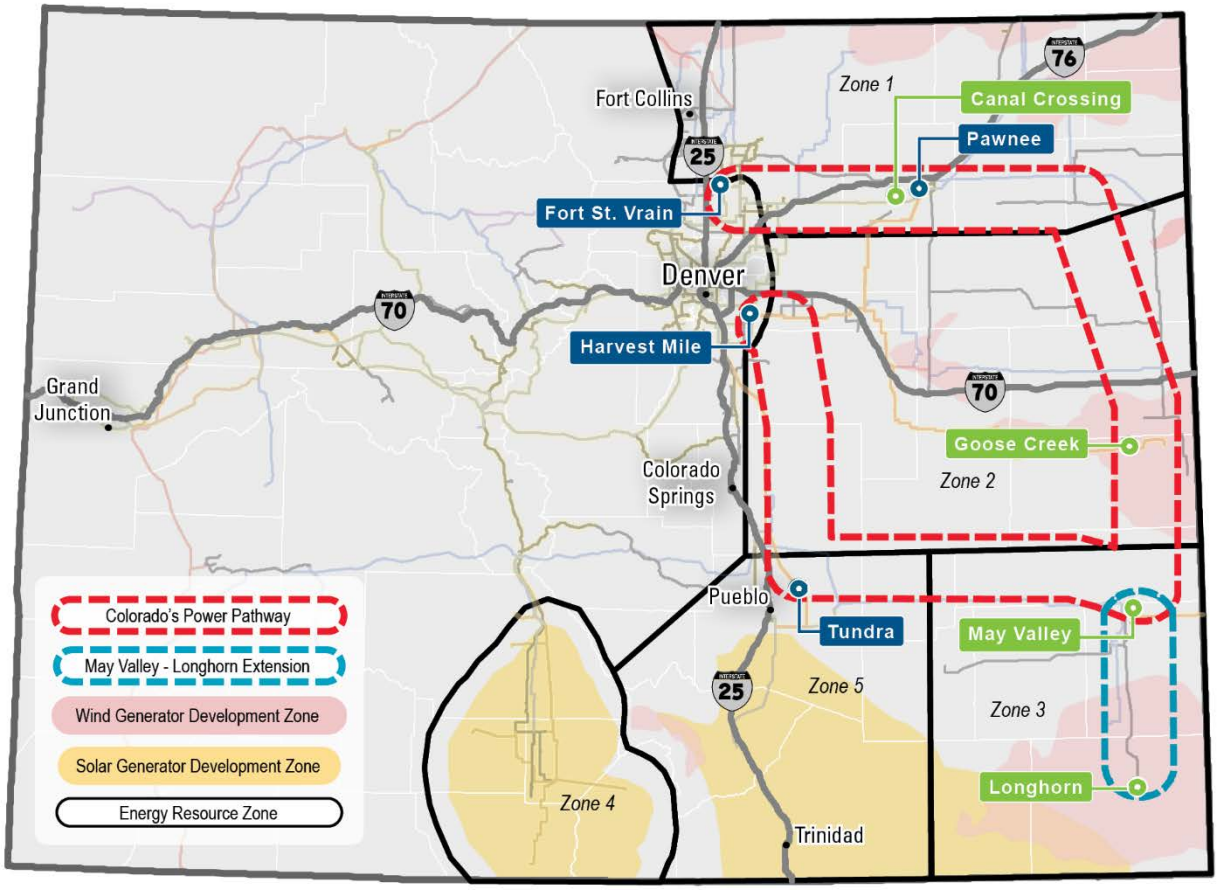
[2] A "backbone" system generally refers to bulk transmission lines networked together that can move large amounts of energy from a distant location to load areas. Backbone transmission systems support the reliability of the transmission system because of they are networked systems, and thus offer more than one route to move power to load. A grid supported by backbone transmission is better positioned to withstand outages without losing generation resource or load.

existing Fort St. Vrain Substation (located at the Fort St. Vrain Generating Station) in Platteville in western Weld County. The Pathway Project then extends east to a new Canal Crossing Substation near the existing Pawnee Substation and Pawnee Generating Station; then extends east/southeast to a new Goose Creek Substation south of the City of Burlington; then extends south to a new May Valley Substation northeast of the City of Lamar; then extends west to the planned Tundra Substation near the Comanche Generating Station. The Project then extends north to the Company's existing Harvest Mile Substation, located adjacent to the City of Aurora in Arapahoe County. The Project also involves expansion of the Fort St. Vrain, Pawnee, and Harvest Mile Substations; expansion of the planned but not yet in-service Tundra Substation; and construction of the new Canal Crossing, Goose Creek, and May Valley Substations.

The Company is proposing the Pathway Project in advance of its forthcoming 2021 ERP & CEP to provide a strategic backbone transmission resource in eastern Colorado that bidders may propose to interconnect to in the Phase II competitive solicitation. The presence of this high-voltage network transmission infrastructure along the path proposed allows Colorado to unlock renewable energy resources in the State's Energy Resource Zones ("ERZs") 1, 2, 3, and 5, both in the Company's Clean Energy Plan and in the resource plans advanced by other utilities to reduce emissions. The Project will provide this new, network transmission facility in an area of the state that is devoid of available transmission but rich in renewable energy resource potential. As explained by Company witness Ms. Alice K. Jackson, this will advance the State towards its

emission reduction objectives with the power sector leading the way. Moreover, the Project provides operational and reliability benefits. A map of the Project, including the May Valley-Longhorn Extension, is shown in Figure BAT-D-1 below.

Figure BAT-D-1:
Colorado's Power Pathway and May Valley-Longhorn Extension



Q. ARE THERE ANY ADDITIONAL COMPONENTS OF THE PATHWAY PROJECT THAT THE COMPANY IS PROPOSING FOR COMMISSION CONSIDERATION?

A. Yes. In addition, Public Service is presenting for Commission consideration a 90-mile, 345 kV extension called the May Valley-Longhorn Extension. The May Valley-Longhorn Extension involves constructing approximately 90 miles of new 345 kV double circuit transmission line from the new May Valley Substation that

will be constructed at the southeastern corner of the Pathway Project near Lamar,[3] south to a new Longhorn Substation located near Vilas, Colorado. The new Longhorn Substation near Vilas will be constructed on land to be acquired by Public Service and will accommodate new 345 kV line terminations and equipment. The Company is bringing forward this optional extension to the Pathway Project for the Commission's consideration, as it would establish additional transmission interconnection opportunities for potential clean energy resource developers in the wind-rich southeastern area of the state. The Company anticipates that having a well-planned transmission line to this area would not only facilitate clean energy resource development, but would also minimize the potential likelihood of clean energy project developers needing to construct multiple generation tie lines in this region to interconnect to the Pathway Project, at potentially high costs to individual generation projects.

Company witnesses Ms. Carly R. Rowe and Mr. Byron R. Craig provide more detailed descriptions of the Project's various segments and the proposed May Valley-Longhorn Extension.

Q. HAVE SOME OF THE FACILITIES INCLUDED IN THE PATHWAY PROJECT PREVIOUSLY BEEN IDENTIFIED IN FILINGS WITH THE COMMISSION?

A. Yes. Portions of the Pathway Project have their origins within the Lamar-Front Range ("LFR") Project. The LFR Project was first conceptualized and studied in 2012-13 as one of several Senate Bill 07-100 ("SB07-100") transmission projects

[3] Note the May Valley Substation will be constructed as part of the Pathway Project even if the May Valley-Longhorn Extension is not approved.

intended to deliver electric power consistent with the timing of the development of beneficial energy resources in or near designated ERZs. I discuss SB07-100 and its objectives later in my testimony. While the LFR Project has been refined over the years, it was first identified as a conceptual transmission project included in Public Service's SB07-100 status reports and has continued to be included in Public Service's and Tri-State's long-range transmission plans reported in Rule 3627 filings (most recently in Proceeding No. 20M-0008E). Company witness Ms. Amanda R. King discusses the LFR studies in more detail in her Direct Testimony.

B. Policy Drivers and Benefits of the Project

Q. PLEASE SUMMARIZE HOW AND WHY THE COMPANY IDENTIFIED THE NEED FOR THE PATHWAY PROJECT.

A. There is a major void of available transmission facilities and access throughout eastern Colorado, a dynamic driven in part by the traditional development of fossil-fired generation resources near load centers. As the General Assembly has advanced increasingly aggressive emission reduction and clean energy deployment objectives, Public Service has fundamentally shifted its approach to the development and planning of transmission. As Company witness Ms. Jackson discusses in her Direct Testimony, since the Company's landmark 2016 ERP (Proceeding No. 16A-0396E), the State has passed several pieces of major climate legislation—namely, Senate Bill 19-236 ("SB19-236") and House Bill 19-1261 ("HB19-1261"). HB19-1261 established economywide emission reduction goals for 2025, 2030, and 2050, and SB19-236 requires Public Service to reduce emissions by 80 percent from 2005 levels by 2030. Since the passage of that

legislation, Public Service has evaluated the logistical, operational, and procedural aspects of how it will achieve these ambitious goals. Indeed, this has been a central focus of its resource planning and transmission planning teams over the past two years.

Q. WHAT ARE THE KEY TAKEAWAYS FROM THESE FOCUSED EFFORTS?

A. Through these efforts, Public Service reached the following conclusions:

- The State has many untapped areas that present opportunities for renewable energy resource development—particularly in the eastern part of the state;
- There is insufficient transmission available in the eastern part of the State to transmit large quantities of clean energy resources to the major electric load centers in Public Service's service territory;
- In order to unlock the renewable energy-rich zones within eastern Colorado, development of a strategic, large-scale, backbone transmission facility will provide the greatest operational and reliability benefits;
- Development of a strategic, large-scale, backbone transmission facility in eastern Colorado will facilitate more cost-effective clean energy development opportunities; and,
- Having the certainty of a strategic, large-scale, backbone transmission facility in advance of Phase II of the Company's 2021 ERP & CEP will provide developers with greater certainty to facilitate bid development and evaluate bid economics.

Q. IS THE CERTAINTY OF A STRATEGIC, LARGE-SCALE, BACKBONE TRANSMISSION FACILITY IN ADVANCE OF PHASE II CONSISTENT WITH THE JOINT TRANSMISSION PROPOSAL IN PROCEEDING NO. 19R-0096E?

A. Yes. As Company witness Ms. Jackson explains in her Direct Testimony, the Joint Transmission Proposal[4] pending before the Commission was developed in close collaboration with a coalition of independent power producers, government interests, conservation interests, and other utilities in response to the Commission's request for stakeholder feedback on how to better align transmission planning and generation development. The outcome of the Joint Transmission Proposal is a proposed process that would allow, for the first time, designation of planned transmission lines that developers may bid into as part of the ERP competitive solicitation. The approach set forth in the Joint Transmission Proposal was widely supported by the coalition of stakeholders because it would better align transmission planning and resource planning; moreover, it would provide certainty to developers regarding planned transmission projects. Bringing forward the Pathway Project now, in advance of the forthcoming 2021 ERP & CEP, is consistent with the underlying objective of the Joint Transmission Proposal in that the Pathway Project provides potential bidders with certainty of backbone transmission infrastructure in an area of the state that is rich with renewable resource development potential.

[4] *See* Proceeding No. 19R-0096E, Updated Joint Transmission Proposal and Joint Final Comments to Decision No. C20-0661-I & Attachment A (filed Oct. 30, 2020).

Q. WHAT OTHER FACTORS INFLUENCED THE TIMING OF THIS FILING?

A. As Company witness Mr. Jim F. Hill discusses in his Direct Testimony, the primary driver of pursuing the Pathway Project at this time is to enable the Company to achieve its 2030 emission reduction goals and simultaneously capture customer benefits through recently extended Federal tax credits. These Federal tax credits materially decline at the end of 2025. The Pathway Project will assist in advancing a plan to meet or exceed the emission reduction targets in a cost-effective way.

Q. WHY HASN'T THE COMPANY PROPOSED THE PATHWAY PROJECT SOONER?

A. Public Service and other utilities have been well-aware of the benefits of transmission expansion in eastern Colorado for many years, and we have been actively and collaboratively evaluating transmission development needs and opportunities in this area for some time. In 2013, the Colorado Coordinated Planning Group ("CCPG") launched its LFR Task Force to study potential transmission solutions in eastern Colorado along the same or similar routing options that have now morphed into the Pathway Project. The Company has expected that a project like the Pathway Project would one day come to fruition. The passage of SB19-236, however, amounted to something of a tipping point that turned "one day" into "today," establishing a timely need to develop a strategic transmission resource in eastern Colorado. Following the passage of SB19-236 by the General Assembly, the Company went to work in evaluating the levels of clean energy generation needed to meet or exceed the 2030 clean energy target of reducing emissions by 80 percent from 2005 levels *and* how we can reliably

deliver it to our customers and communities. Through the coordinated work of our Resource Planning and Transmission Planning departments, along with many others, we have charted a concrete pathway to achieving these emission reduction goals. The Pathway Project is a critical tool in these efforts.

Q. PLEASE DESCRIBE THE COLLABORATIVE EFFORTS BETWEEN PUBLIC SERVICE'S TRANSMISSION PLANNING AND RESOURCE PLANNING TEAMS SINCE THE 2016 ERP.

A. Historically, the State's and the Company's transmission planning processes were driven by the need to integrate known generation additions to each provider's system. This process, however, was established when the principal goal of resource and transmission planning was ensuring reliability surrounding a fleet of predominantly centralized fossil fuel units.

In light of the Company's and the State's efforts to transition to an increasingly clean generation mix, the Company must plan transmission to ensure reliability *and* facilitate the integration of future clean energy resource acquisitions in remote areas of Colorado—like the eastern plains. Following the Company's 2016 ERP, Public Service's Transmission Planning and Resource Planning groups have been actively collaborating on how to better align their respective processes for future ERPs. This includes earlier consideration of the size and location of potential resources needed to meet public policy initiatives, so that Public Service can better plan the transmission necessary to accommodate these new resources.

Q. IS THE PATHWAY PROJECT A RESULT OF THESE INCREASED COORDINATION EFFORTS AND THIS NEW WAY OF LOOKING AT THE NEED FOR TRANSMISSION DEVELOPMENT?

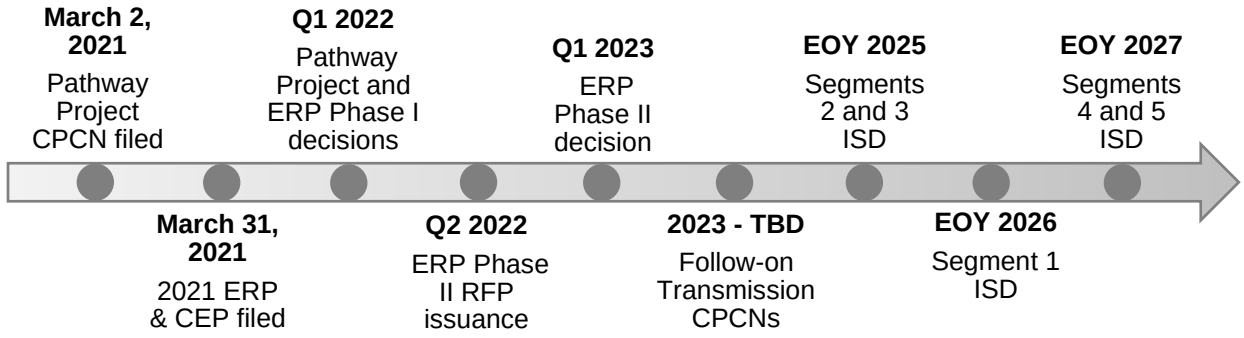
A. Absolutely. This CPCN filing reflects the increased coordination from both a technical perspective *and* a procedural perspective. The Pathway Project will advance a strategic, large-scale, backbone transmission facility in eastern Colorado to support the State's emission reduction objectives, as explained in more detail by Company witness Ms. Jackson.

Q. CAN YOU PROVIDE AN OVERVIEW OF THE TIMELINE ASSOCIATED WITH THIS PROCEEDING AND FORTHCOMING ERP FILINGS?

A. Yes. As I discuss in more detail in Section V below, Public Service anticipates filing its 2021 ERP & CEP on March 31, 2021, with a Phase I decision anticipated in first quarter 2022, followed by issuance of its Phase II Request for Proposals ("RFP") in second quarter 2022. A Commission decision on the Pathway Project in this proceeding in early 2022 ahead of an ERP Phase I decision will provide bidders with certainty of the timing and availability of transmission interconnection opportunities in eastern Colorado. This timing will also facilitate the planned construction sequencing of the Project and allow certain segments to be placed in service by end of year 2025 (Segments 2 and 3), followed by Segment 1 in 2026 and Segments 4 and 5 by end of year 2027. This planned Project sequencing will accommodate the development of clean energy resources approved as part of the final Phase II decision, which is anticipated in the first quarter of 2023. The Company anticipates filing follow-on CPCNs for additional transmission

investment associated with its 2021 ERP & CEP after a final Phase II decision. Figure BAT-D-2 below provides a high-level, estimated timeline of this proceeding in the context of the 2021 ERP & CEP. I also discuss the basis for the Company's recommended sequencing of the various Project segments in Section V.

Figure BAT-D-2:
Pathway Project Estimated Timeline



Q. HOW WILL THE PATHWAY PROJECT DRIVE EMISSION REDUCTION BENEFITS TO CUSTOMERS?

A. Company witnesses Ms. Jackson and Mr. Hill address this in more detail, but the Pathway Project will position the Company to meet emission reduction goals in a timely manner. Put simply, it ensures transmission capacity is available for new clean energy resources. The eastern part of Colorado provides ample opportunities for new solar and wind generation, which will support the State's efforts to reduce emissions from the power sector; however, transmission constraints in the region create a hurdle to the delivery of clean energy to customers in load centers. In anticipation of the Company's forthcoming 2021 ERP & CEP, the Pathway Project will enable developers to bid in clean energy resources in eastern Colorado with assurance of available backbone transmission

capacity in the region. Moreover, the Project also aligns with the transmission adequacy goals of SB07-100.

Q. PLEASE ELABORATE ON THE OBJECTIVES OF SB07-100.

A. SB07-100 set forth a variety of policies aimed at ensuring "the continued availability of clean, affordable, reliable electricity" in Colorado by way of a robust transmission system.[5] Rate-regulated Colorado electric utilities are "encouraged to promptly and efficiently improve such infrastructure as required to meet the state's existing and future energy needs."[6] SB07-100 also established the concept of ERZs, or "geographic area[s] in which transmission constraints hinder the delivery of electricity to Colorado customers, the development of new electric generation facilities to serve Colorado consumers, or both."[7] Electric utilities are required to designate these ERZs in advance of transmission planning, develop plans to ensure sufficient transmission facilities "to deliver electric power consistent with the timing of the development of beneficial energy resources located in or near such zones," and "[c]onsider how transmission can be provided to encourage local ownership of renewable energy facilities."[8]

Q. HAS THE COMPANY DESIGNATED ERZS CONSISTENT WITH SB07-100?

A. Yes. In accordance with § 40-2-16, C.R.S., the Company designated five ERZs, which have been identified in the Company's reports submitted to the Commission

[5] S.B. 07-100, at § 1(1)(b).

[6] *Id.* at § 1(1)(c).

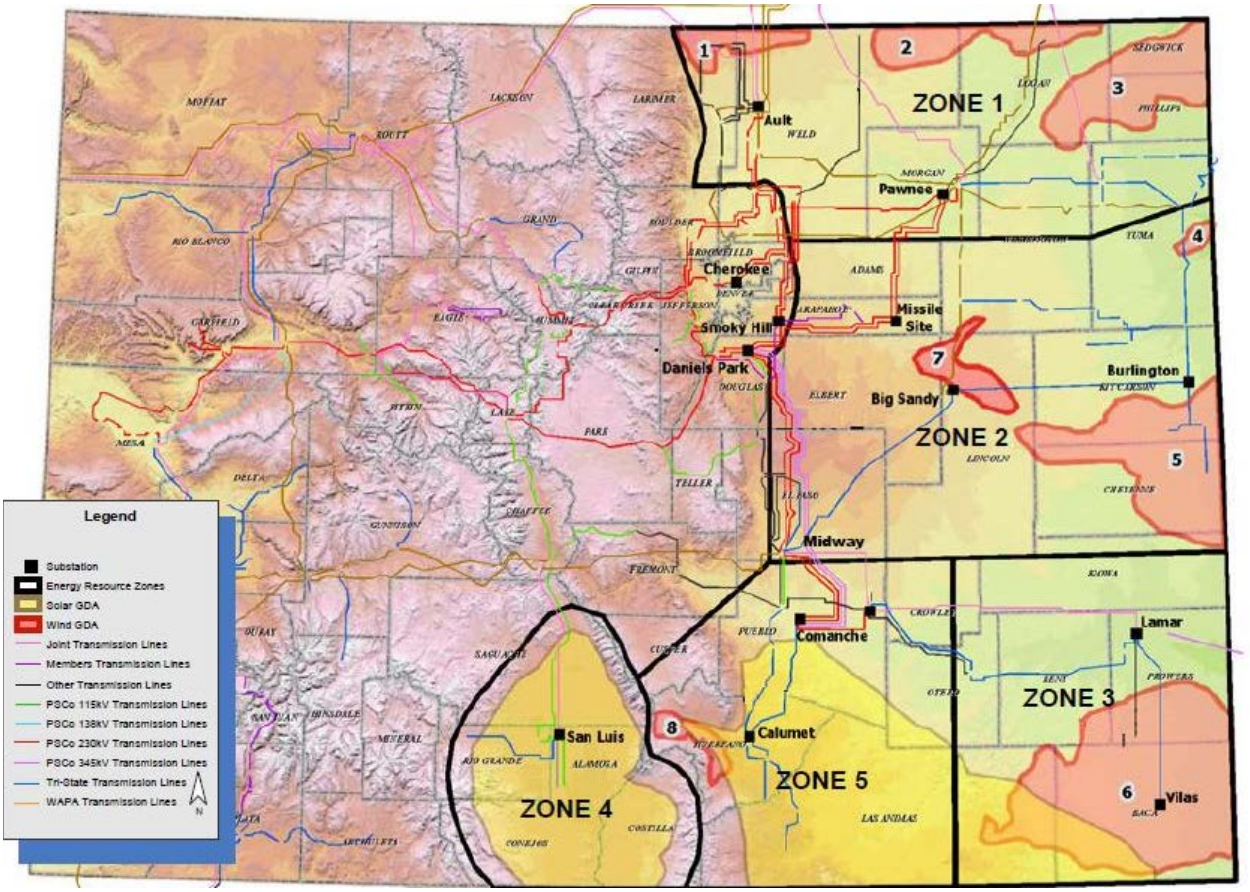
[7] *Id.* at § 2(1).

[8] *Id.* at § 2(2)(b) and (c).

pursuant to SB07-100. These SB07-100 reports were historically filed in each odd-numbered year beginning in 2007, but since 2018 have been incorporated into the Rule 3627 Reports filed each even-numbered year. As Company witness Ms. King discusses in her Direct Testimony, the ERZs are largely located in eastern and southern Colorado, where the Pathway Project will be constructed. Figure BAT-D-3 below shows a map of Colorado's five designated ERZs as well as the State's wind and solar generation development areas ("GDAs").[9]

[9] The wind and solar GDAs were identified by the Task Force on Renewable Resource Generation Development Areas, created by Senate Bill 07-091. The Task Force was given the charge to map the renewable resources throughout the State of Colorado and identify GDAs where resources can be developed with competition among developers for utility-scale wind and solar projects.

Figure BAT-D-3:
Colorado ERZs and GDAs



Q. HOW IS THE PATHWAY PROJECT CONSISTENT WITH THE GENERAL ASSEMBLY'S BROADER GOALS SET FORTH IN SB07-100?

A. Currently, transmission constraints in eastern Colorado hinder the development of cost-effective clean energy resources. Without a nearby transmission backbone, developers must connect to the existing transmission network through lengthy and potentially expensive interconnection facilities. As Company witnesses Ms. King and Mr. Hill discuss in their Direct Testimonies, the available transmission in the region is insufficient to reliably accommodate the new generation needed to meet the State's renewable and clean energy goals. The Pathway Project will create a

transmission backbone for project developers to practically and cost-effectively develop the beneficial energy resources located in eastern Colorado's ERZs in a manner that ensures the continued reliability of the grid.

Q. HAS THE COMMISSION PREVIOUSLY APPROVED OTHER TRANSMISSION PROJECTS DESIGNED TO ACCOMMODATE FUTURE ANTICIPATED GENERATION DEVELOPMENT?

A. Yes. In Proceeding No. 14A-0287E, the Commission issued Public Service a CPCN for the Pawnee-Daniels Park Project, a 115-mile, 345 kV transmission line designed to accommodate an anticipated 1,200 to 1,400 MW resource need and also address system reliability constraints. The Company indicated in that proceeding a likelihood that its projected generation needs would be met by future resource development in ERZs 1 or 2, but that it would similarly depend on having known transmission assets and capacity available to connect the generation to load.[10] The Commission agreed that there was a compelling policy justification for having the transmission line in service prior to the generation being placed into service, consistent with SB07-100,[11] and noted that SB07-100 "encourages making available transmission for generation in ERZs. The [Pawnee-Daniels Park]

[10] *See* Proceeding No. 14A-0287E, Decision No. R14-1405 (mailed Nov. 25, 2014), at ¶ 121 (referencing testimony of Company witness James F. Hill) (affirmed by Decision No. C15-0316 (mailed Apr. 9, 2015)); Proceeding No. 14A-0287E, Stipulation and Settlement Agreement, at 2 (approved by Decision No. R14-1405, at ¶ 27).

[11] *See, e.g.*, Proceeding No. 14A-0287E, Decision No. R14-1405 (mailed Nov. 25, 2014), at ¶ 116 (citing Docket Nos. 09A-324E & 09A-325E, Decision No. C11-0288 (mailed Mar. 23, 2011)); Proceeding No. 14A-0287E, Decision No. C15-0316 (mailed Apr. 9, 2015), at ¶¶ 35-36 ("Approval of a CPCN here is also supported by Senate Bill 07-100.").

Project will not only be capable of serving the resource need, but also will be able to support two ERZs."[12]

Q. WHY IS IT APPROPRIATE TO ADDRESS PROJECTED TRANSMISSION NEEDS ASSOCIATED WITH THE 2021 ERP & CEP NOW THROUGH THE PATHWAY PROJECT, RATHER THAN WAITING UNTIL AFTER NEW GENERATION IS ACQUIRED?

A. As I explained above, waiting to design and construct transmission until *after* generation acquisition results in numerous limitations to selecting and interconnecting new generation (especially beneficial energy resources located in remote, renewable energy-rich areas of the state). Company witness Ms. Jackson discusses the "chicken and egg" timing dilemma between resource and transmission planning, but I would add that this dilemma is real, and it becomes more acute when doing resource planning in an emission-constrained environment. The time needed to develop and construct renewable resources, such as wind and solar, is much less than traditional fossil fuel plants, which in the past allowed time for transmission to be constructed to interconnect and deliver the generation. Furthermore, transmission facilities (which may be hundreds of miles long) take longer to construct than generation resources. It can be difficult—if not impossible—to have a transmission line ready when new generation resources are ready to be in service if the transmission facilities are not identified

[12] Proceeding No. 14A-0287E, Decision No. R14-1405 (mailed Nov. 25, 2014), at ¶ 124 (affirmed by Decision No. C15-0316 (mailed Apr. 9, 2015)).

until after generation resources are approved by the Commission for development or acquisition.

Q. DO YOU THINK SB07-100 IS INDICATIVE OF A POLICY MIGRATION AWAY FROM "JUST IN TIME" TRANSMISSION DEVELOPMENT?

A. Yes. Colorado's policy directives do not aim to require utilities to seek transmission on a "just in time" or "just after need" basis. With aggressive emission reduction goals in place, this policy is now as important as ever. Waiting to begin developing transmission until after generation contracts are secured, or attempting to time the development of transmission facilities precisely with new generation resources coming online, does not present the most effective or pragmatic approach to ensure the continued reliability of the electric grid.

Q. HAS THE COMMISSION AFFIRMED THIS POLICY?

A. Yes. In Decision No. C11-0288, the Commission stated as follows:

> [T]he legislative intent of SB07-100 was to encourage construction of transmission facilities, including those needed to deliver renewable generation resources from ERZs to load, even in the absence of "hard evidence." … [T]aken together, these statutes and policies encourage the construction of transmission to designated ERZs in advance of the construction of renewable resources to foster the development of these resources.[13]

The Commission revisited these policy questions in the Company's Pawnee-Daniels Park Project CPCN proceeding, finding that "[a]s the Commission has recognized, Senate Bill 07-100 'promotes identification of transmission projects in

[13] Docket Nos. 09A-324E & 09A-325E, Decision No. C11-0288 (mailed Mar. 23, 2011), at ¶ 65; *see also* Proceeding No. 14A-0287E, Decision No. R14-1405 (mailed Nov. 25, 2014), at ¶¶ 116-118 (affirmed by Decision No. C15-0316 (mailed Apr. 9, 2015)).

advance of actual generation development.'"[14] It further noted that the "Legislature has clearly resolved the chicken-and-egg dilemma in favor of transmission over generation."[15] In granting the Company a CPCN for the Pawnee-Daniels Park Project, the Commission further found that "[t]he Commission decides future needs based upon a substantial possibility of need evidenced," and, "while no means a certainty, a substantial possibility has been shown that such generation will develop through the ERP process if the Project is approved."[16]

The emission reduction objectives codified in SB19-236 and HB19-1261 buttress these policy judgments even more here in the context of the Pathway Project.

Q. HOW WILL THE PROJECT LOCATION ENABLE THE DEVELOPMENT OF BENEFICIAL ENERGY RESOURCES LOCATED IN EASTERN COLORADO'S ERZS?

A. Based on the Company's experience and market understanding, we are confident there will be future demand to interconnect to our system in eastern Colorado. As I discuss later in my testimony, the existing transmission system has essentially no additional injection capability in ERZs 2 and 3, with the (existing) Cheyenne Ridge-Shortgrass Transmission Line and existing Lamar 230 kV Substation in those zones already at or near capacity. This leaves a potentially enormous

[14] Proceeding No. 14A-0287E, Decision No. R14-1405 (mailed Nov. 25, 2014), at ¶ 117 (affirmed by Decision No. C15-0316 (mailed Apr. 9, 2015)) (citing Proceeding Nos. 14M-0110E et al., Decision No. R14-0845 (mailed July 18, 2014), at ¶ 65).

[15] *Id.*

[16] Proceeding No. 14A-0287E, Decision No. R14-1405 (mailed Nov. 25, 2014), at ¶¶ 118-124 (affirmed by Decision No. C15-0316 (mailed Apr. 9, 2015)).

amount of untapped beneficial energy resources in ERZs 1, 2, 3, and 5—a gap that the Pathway Project can help close.

C. Technical Drivers of the Project & Consideration of New and Emerging Technologies

Q. WHY IS THE PATHWAY PROJECT NEEDED FROM A TECHNICAL STANDPOINT?

A. Company witnesses Ms. King and Mr. Hill explain why the Project is needed from transmission and resource planning perspectives. The Company has conducted studies through the CCPG, and CCPG participants include a broad range of stakeholders from the utility, developer, environmental, public interest, government, and consumer interest communities. CCPG studies have identified major future constraints on the Company's existing transmission system when attempting to inject the types and amounts of new generation resources the Company will need to acquire through its upcoming 2021 ERP & CEP.

Q. PLEASE ELABORATE ON THE TECHNICAL STUDIES CONDUCTED THAT DEMONSTRATE THE NEED FOR THE PATHWAY PROJECT.

A. Company witness Ms. King addresses in more detail how, through the CCPG process, the Company performed multiple power flow studies in conjunction with the CCPG 80x30 Task Force Phase I effort that produced the 80x30 Task Force Phase I Transmission Report ("80x30 Task Force Report"), provided as Attachment ARK-5 to Ms. King's Direct Testimony. The aim of this study was to examine the reliability of the existing transmission system given the amounts, types, and locations of new renewable generation resources expected to be

procured through the Company's 2021 ERP & CEP, and the additional transmission facilities that would be required to meet the State's and the Company's 2030 emission reduction goals.

Q. PLEASE PROVIDE AN OVERVIEW OF THE 80X30 TASK FORCE'S FINDINGS.

A. The Commission has clarified that evaluation of alternatives means "evaluation of feasible alternatives rather than all conceivable alternatives."[17] As discussed in the 80x30 Task Force Report and Ms. King's Direct Testimony, the 80x30 Task Force evaluated a benchmark case assuming only existing transmission facilities and those planned for in-service by 2030, and compared it to seven alternative cases assuming the addition of generation and transmission elements in a variety of configurations. A 500 kV option was also considered, along with several design options, such as undergrounding and non-wires alternatives. The 80x30 Task Force study confirmed that the existing transmission system cannot reliably accommodate and deliver electric energy from new generation located in ERZs 1, 2, 3, and 5, and thus will not be sufficient to meet 2030 emission reduction goals. In other words, and as noted throughout our Direct Case, the transmission system is "full" in the existing areas on the transmission system. The 80x30 Task Force Report identifies both Alternatives 3 and 7 as potential alternatives that most reliably provided the future transmission capacity and operational flexibility needed accommodate the projected generation resource additions. Alternative 3 formed the basis for the Pathway Project as proposed in this proceeding.

[17] Proceeding No. 12A-1264ST, Decision No. C13-1549 (mailed Dec. 18, 2013), at 5 n.8.

Q. WHY ISN'T PUBLIC SERVICE PROPOSING TO CONSTRUCT THE PROJECT AT 500 KV?

A. As explained in the 80x30 Task Force Report, a 500 kV line could theoretically achieve at least the same injection levels as the proposed 345 kV alternatives; however, this option presents a number of drawbacks compared to a 345 kV option.

Q. PLEASE EXPLAIN.

A. The Company has considered the viability of a 500 kV alternative to the Project and determined the 345 kV double circuit option remains the best approach from both a short and long-term perspective. As discussed in more detail in Ms. King's Direct Testimony, the Company estimates that the construction costs of a 500 kV line would be approximately 25 to 35 percent higher than a double circuit 345 kV line, with the cost by line mile approximately $1 million more than a 345 kV double circuit line, and substation and transformation costs approximately 50 percent more expensive. Not only would a higher voltage require more voltage transformation on Public Service's system, but it would require additional transformations for developers, which could add significant costs to their projects. But equally important from my perspective, the construction timeline is notably longer, with an in-service date in the 2027-2030 timeline. This timeline forecloses our ability to capture the benefits of tax-advantaged clean energy resources for customers by the end of 2025. I discuss the projected costs and construction timeline for the Pathway Project at 345 kV in Section V of my Direct Testimony.

Q. WHY DID PUBLIC SERVICE CONCLUDE THAT UNDERGROUNDING IS NOT A VIABLE OPTION?

A. Undergrounding the Project is costlier (at a magnitude of 10 to 30 times) and features a number of environmental and technological drawbacks, as Company witnesses Mr. Craig and Ms. King detail in their Direct Testimonies. As an overhead line, the magnetic field levels associated with the Project are reasonable under Rule 3102(d). In addition, underground lines are more difficult, expensive and time-consuming to repair in the event of outages.

Q. WHAT ABOUT NON-WIRES ALTERNATIVES, SUCH AS ENERGY STORAGE?

A. As explained in Attachment ARK-5, the 80x30 Task Force did not formally study energy storage as an alternative to the Pathway Project, as a non-wires approach could not realistically meet the ultimate goal of delivering clean and renewable electricity from the remote ERZs in eastern Colorado to load centers along the Front Range. While energy storage technologies enhance existing transmission capabilities, there is no non-wires alternative that can replace a major transmission backbone to provide access to generation resources in eastern Colorado. Delivering that generation requires long-distance connections physically linking the periphery of the system to load centers—full stop. Public Service will continue to evaluate the potential role of energy storage applications on its transmission system, particularly through CCPG's Energy Storage Working Group. This working group, which is chaired by a Public Service representative, provides a focused forum for stakeholders to collaborate and engage in energy storage and other emerging technology issues in the transmission arena.

Q. DID PUBLIC SERVICE EXPLORE THE USE OF OTHER NEW OR EMERGING TECHNOLOGIES IN DEVELOPING THE PATHWAY PROJECT?

A. Yes. Public Service continues to explore new and emerging technologies and how new technologies may be applied to new transmission infrastructure to reduce capital investment or ongoing operation and maintenance expense. Examples of technologies that we are currently evaluating include: High Surge Impedance Loading ("SIL") Line Design, energy Storage as Transmission-only Asset ("SATOA"), Dynamic or Ambient-Adjusted Line Ratings ("DLR/AALR"), power-electronics based Power Flow Controllers (aka "FACTS," or Flexible AC Transmission System devices), and Advanced Grid Visualization and Optimization software.

Q. PLEASE PROVIDE MORE DETAIL ON HOW THE COMPANY HAS CONSIDERED DEPLOYING NEW AND EMERGING TECHNOLOGY AS PART OF THE PATHWAY PROJECT.

A. Public Service has considered several of the above-mentioned technologies. Generally speaking, these new technologies would serve to help relieve transmission congestion and could therefore provide operational benefits and non-wires alternatives to capital-intensive network upgrade projects to help relieve capacity bottlenecks in existing transmission systems. However, because the Pathway Project is a capacity-driven project rather than a project to address congestion, the Project does not lend itself to implementation of these types of new technologies, as they are intended for transmission congestion relief.

As Company witness Ms. King explains in her Direct Testimony, Public Service anticipates the Denver metro area transmission system is likely to experience congestion as more renewable generation is imported into it from new, remote renewable generation locations that are almost all outside the Denver metro area. When the Company evaluates transmission congestion relief alternatives for the Denver metro area, it will continue to consider new and emerging technologies that could potentially help reduce or delay capital investment.

Q. CAN YOU PROVIDE SOME SPECIFIC EXAMPLES OF TECHNOLOGIES THAT WERE CONSIDERED BUT ULTIMATELY NOT PURSUED AS PART OF THE PATHWAY PROJECT?

A. Ms. King addresses why energy storage does not present itself as a viable non-wires alternative for the Pathway Project. Other technologies considered, such as installing FACTS devices like fast power flow controllers or transmission topology optimization software, were not included because they help redirect power flow from congested transmission lines to lines with excess headroom. Similarly, implementing dynamic or ambient-adjusted line ratings helps to mitigate transmission congestion by "squeezing" more capacity out of the congestion-prone lines, which is not a risk at this time for the Pathway Project.

Q. HOW DOES THE COMPANY ANTICIPATE BRINGING FORWARD ANY OF THESE NEW TECHNOLOGIES TO THE COMMISSION?

A. As I mentioned above, Public Service continues to explore applications for new and emerging technologies in the transmission arena. To the extent we identify

potential technology applications outside of the normal course of business that could provide operational benefits or customer cost savings, we will bring these forward to the Commission as part of future filings with the Commission. Forums for such filings could include, for instance, the follow-on CPCN applications the Company anticipates filing to address network upgrades, voltage control, or interconnection facilities after the Commission approves a final resource portfolio for the 2021 ERP & CEP.

D. Future Considerations

Q. LOOKING BEYOND 2030, ARE THERE OTHER CONSIDERATIONS THAT SUPPORT THE NEED FOR THE PATHWAY PROJECT?

A. As Company witness Ms. Jackson discusses, SB19-236 requires Public Service to provide its customers with 100 percent clean energy by 2050, and HB19-1261 established a statewide greenhouse gas emission reduction goal of 90 percent from 2005 levels by 2050. Achieving these targets will require even more significant injection of new, geographically-diverse renewable resources beyond those required to meet 2030 targets—as well as technological innovation and advancement for clean, dispatchable generation. The Pathway Project is a critical steppingstone toward this goal that will continue to provide transmission capacity necessary to integrate those resources. Colorado's eastern plains offer some of the best wind and solar resources in the country. The Pathway Project will help enable Colorado's utilities to tap into these resources for years to come.

Q. ARE THERE OTHER LONGER-TERM CONSIDERATIONS YOU WANT TO BRING TO THE COMMISSION'S ATTENTION?

A. Yes. While this Project is being developed to facilitate renewable energy development in Colorado to meet Colorado's 2030 public policy goals, as a major networked facility, it will also serve as a strategic stepping stone to facilitating wholesale import/export capabilities as emergent energy markets in the West continue along the development process. Discussions continue in Colorado regarding the potential development of a regional market, but as Company witness Ms. Jackson notes in her Direct Testimony, Public Service cannot wait for finality on this issue to address identified transmission constraints. In fact, the Project will inevitably enable the functioning of any future regional market—regardless of form—by providing access to currently untapped resource-rich portions of the state. Colorado's Power Pathway is a "no regrets" project.

III. ALIGNMENT WITH RELEVANT COMMISSION RULES

Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR DIRECT TESTIMONY?

A. In this section of my Direct Testimony, I explain how the Company's Application is consistent with the Commission's existing CPCN rules. I also address the relationship between the requested CPCN and the Commission's proposed ERP transmission rules.

Q. PLEASE PROVIDE A BRIEF OVERVIEW OF THE RELEVANT AND APPLICABLE COMMISSION RULES TO THIS PROCEEDING.

A. As a CPCN application, the rules that directly apply to this proceeding include Commission Rules 3002 – Applications, 3102 – Certificate of Public Convenience and Necessity for Facilities, and 3206 – Construction or Extension of Transmission Facilities. The Company's Application addresses the relevant provisions of these rules and outlines where in its direct case the Company has complied with each requirement.[18]

Q. HOW DOES THIS CPCN RELATE TO THE ERP PROCESS AS SET FORTH IN COMMISSION RULES?

A. Competitive bidding is central to the Commission's ERP process, as set forth in Rules 3613 and 3616. Rule 3613(d) provides that the Company must evaluate bid portfolios received through its Phase II RFP on a 120-day timeline. The Company believes it is important to have Commission approval for the Pathway Project prior to when the Commission issues its Phase I decision regarding the 2021 ERP &

[18] Public Service is also concurrently filing with this CPCN a Supplemental Rule 3206 Report identifying the Pathway Project.

CEP, ahead of the commencement of the Phase II competitive solicitation. This will allow for a greater availability and diversity of economic clean energy resource bids that would likely be rejected as infeasible or cost-prohibitive without this new transmission backbone. In doing so, the Project will proactively facilitate a competitive resource acquisition process aligned with the State's policy goals set forth in SB19-236.

SB19-236 provides that "[a]ny actions, *including transmission development*, taken by the qualifying retail utility shall be presumed prudent to the extent those actions are a part of an approved clean energy plan."[19] This provision is not directly on-point here, as the Company's 2021 ERP & CEP proceeding is still forthcoming. Nevertheless, it appropriately recognizes that other actions are needed—including transmission development—to advance resource acquisitions through ERPs, and the Pathway Project will be essential to implementing any resource portfolio chosen in alignment with the State's emission reduction objectives.

Q. WHAT IS THE STATUS OF THE COMMISSION'S RULEMAKING PROCEEDING NO. 19R-0096E AS IT PERTAINS TO THE ERP RULES?

A. Proceeding No. 19R-0096E remains ongoing. Through this rulemaking process, the Company worked with a diverse coalition of stakeholders to advance a consensus proposal for addressing transmission development through the ERP process.

[19] § 40-2-125.5(5)(c), C.R.S. (emphasis added).

Q. PLEASE EXPLAIN.

A. By Decision No. C20-0661-I, the Commission solicited comments on several relevant issues.[20] Specifically, the Commission requested more information on "whether applications for approval of a CPCN for new transmission facilities should be filed concurrently with the initial ERP filing that launches Phase I of an ERP proceeding, particularly when the new transmission facility is necessary for the utility to achieve . . . the emission reductions required for a Clean Energy Plan pursuant to § 40-2-125.5(3)(a)(I), C.R.S."[21]

Consistent with that directive, several parties—including Public Service—filed comments addressing how transmission planning should or could be made more cohesive with the ERP process. In its comments filed on September 30, 2020, Public Service supported Commission consideration of transmission project CPCNs filed before or concurrently with a Phase I ERP and designating transmission projects for bidding as part of a Phase I ERP.[22] Public Service agreed that such an approach would help mitigate the "chicken and egg" dilemma faced in developing renewable resource projects in remote areas.

Over the course of this phase of the rulemaking, Public Service worked with BHE, Colorado Energy Consumers ("CEC"), the Colorado Energy Office ("CEO"), the Colorado Independent Energy Association ("CIEA"), the Colorado Solar and

[20] Proceeding No. 19R-0096E, Decision No. C20-0661-I (mailed Sept. 15, 2020), at ¶ 18.

[21] Proceeding No. 19R-0096E, Decision No. C20-0661-I (mailed Sept. 15, 2020), at ¶ 29.

[22] Comments of Public Service Company of Colorado in Response to Decision No. C20-0661-I (filed Sept. 30, 2020), at 13.

Storage Association/Solar Energy Industries Association ("COSSA/SEIA"), Interwest Energy Alliance ("Interwest"), and Western Resource Advocates ("WRA") on the transmission aspects of the rulemaking and introduced a Joint Transmission Proposal.[23] The Joint Transmission Proposal aims to better align transmission planning and resource planning by allowing for bidding into bid-eligible planned transmission projects in the Phase II competitive solicitation without burdening developers with costs from the transmission project. The Joint Transmission Proposal aims to do so by, among other things, having the Commission approve a "menu" of bid-eligible planned transmission projects as part of the Phase I decision.[24] To be sure, however, the Joint Transmission Proposal did not preclude the filing of CPCNs for new transmission *ahead* of an ERP. The Pathway Project will work in concert with the Joint Transmission Proposal as it establishes a transmission project that developers may bid into and will allow customers and communities to benefit from the development of tax-advantaged resources.

[23] *See* Proceeding No. 19R-0096E, Updated Joint Transmission Proposal and Joint Final Comments to Decision No. C20-0661-I (filed Oct. 30, 2020), at 1 & Attachment A – Updated Joint Transmission Proposal Redline Rule Changes.

[24] Proceeding No. 19R-0096E, Updated Joint Transmission Proposal and Joint Final Comments to Decision No. C20-0661-I (filed Oct. 30, 2020), at 9-10.

Q. IS THE PATHWAY PROJECT CONSISTENT WITH THE COMPANY'S MOST RECENT TEN-YEAR TRANSMISSION PLAN FILED WITH THE COMMISSION PURSUANT TO RULE 3627?

A. Yes. The Company's most recent Rule 3627 Report was filed on February 3, 2020 in Proceeding No. 20M-0008E, jointly with BHE and Tri-State. A Rule 3627 Plan is a report the Company submits (in conjunction with other transmission providers in Colorado) to the Commission pursuant to Commission Rule 3627, 4 CCR 723-3-3627(a). The Rule 3627 Report contains the Company's ten-year transmission plan, 20-year conceptual scenario, and supporting documentation. As indicated in the utilities' jointly-filed Joint Rule 3627 Report filed on February 3, 2020, because Colorado does not have a Regional Transmission Organization, coordinated planning through CCPG is essential to the seamless and efficient functioning of the State's transmission system. When possible, individual transmission projects are designed to accommodate the collective needs of multiple transmission providers and stakeholders. The Rule 3627 Report further signaled that public policy initiatives, including SB07-100, SB19-236, and HB19-1261, could drive changes to the Ten-Year Transmission Plan and transmission planning in general, particularly to accommodate the interconnection of new clean energy resources and actions with regard to the coal fleet.

While these filings did not specifically identify the Pathway Project by name, the Ten-Year Transmission Plan identified: (1) the LFR Project (Comanche-Lamar-Burlington-Pawnee), which as I explained above has been refined into the Pathway

Project; and (2) the Lamar-Vilas radial project, which has been refined into the May Valley-Longhorn Extension. According to the Ten-Year Plan:

> The Lamar Front Range Project was developed jointly through the CCPG to significantly improve load-serving capability, reliability, and potential resource accommodation in eastern and southeastern Colorado. The project could provide connectivity to the bulk transmission systems of Tri-State and PSCo, and provide strong "looped service" to areas with long radial transmission configurations. In concept, the project could create a transmission system capable of at least 2000 MW of new generation in eastern and southeastern Colorado. As the actual transmission needs in the original Lamar Front Range Project area have been smaller over the last few years, several projects have been implemented at a smaller scale, but in a manner consistent with the outline of the original Lamar Front Range Project.
>
> This conceptual project is currently being re-evaluated in the Lamar Front Range Task Force under CCPG. The project identifies transmission element additions that are needed to meet both companies' needs, including delivery of future generation to loads in the Denver and Front Range areas. The conceptual Lamar Front Range 50 project under study envisions 345 kV transmission lines connecting Lamar to the Pueblo area, Lamar to the Burlington area, and the Burlington area to the Missile Site, Story and Pawnee areas.[25]

On June 8, 2020, pursuant to Commission order, the utilities filed a Supplemental Joint Report, where Public Service provided additional details surrounding its forthcoming 2021 ERP & CEP filing. The Company explained how the 2021 ERP & CEP would build on the Preferred Colorado Energy Plan Portfolio ("CEPP") approved in the 2016 ERP. To that end, Public Service stated it was assessing different pathways and conceptual transmission plans to achieve carbon reduction targets in coordination with the CCPG:

[25] Proceeding No. 20M-0008E, 10-Year Transmission Plan for the State of Colorado to Comply with Rule 3627 (filed Feb. 3, 2020), at 49-50.

> Through these preliminary analyses, Public Service has been able to identify several common transmission system criteria violations, as well as criteria violations unique to each conceptual carbon reduction portfolio studied. Transmission Planning presented the common transmission system criteria violations at the May 21, 2020 CCPG meeting. These include overloads in the Denver Metro area due to an 13 increase in power transfer into the load center, and the Pawnee to Story 230 kV line overload due to an increase of power flow on this line. Another set of transmission projects that may be needed to help Public Service meet its carbon reduction targets include the networking of the Rush Creek Gen-Tie (which was studied as part of the Lamar Front Range Task Force Study), and the Northern Greeley Area Transmission Plan (which aligns with the Weld County Transmission Plan).
>
> Transmission Planning will make available specific criteria violations as well as the necessary upgrades as they become available at future CCPG meetings, FERC 890 meetings and through other stakeholder outreach meetings that may be scheduled.[26]

Accordingly, the Rule 3627 process, in conjunction with the CCPG 80x30 Task Force process, laid the groundwork for the Pathway Project.

Q. HAS THERE BEEN A DECISION ON THE MOST RECENT RULE 3627 REPORT?

A. Yes. On February 11, 2021, the Administrative Law Judge ("ALJ") issued a Recommended Decision finding that the 10-Year Transmission Report and 20-Year Conceptual Scenario Report filed on February 3, 2020 and supplemented on June 8, 2020, both comply with Rule 3627.[27] The ALJ further recommended the Commission initiate a rulemaking to consider modifications to Rule 3627 on a

[26] Proceeding No. 20M-0008E, Supplemental Joint Report for the State of Colorado to Comply with Rule 3627 (filed June 8, 2020), at 12-13.

[27] Proceeding No. 20M-0008E, Decision No. R21-0073 (mailed Feb. 11, 2021), at ordering ¶¶ 1-2. An error in the Recommended Decision incorrectly references these filings as having been made on February 1, 2018.

prospective basis, in part in response to the emission reduction directives of HB19-1261.[28]

As I discussed above and as reflected in Company witness Ms. King's testimony, the Pathway Project is the product of a diverse stakeholder process through the CCPG's 80x30 Task Force. Moreover, while Public Service is not proposing to "rely substantively on the information contained" in the most recent Rule 3627 filings, all major elements of the Pathway Project have been identified in past Rule 3627 filings and refined through the CCPG process and CPCN development process. The Recommended Decision is still pending before the Commission with exceptions due on March 3, 2021.

Q. HOW DOES THIS CPCN APPLICATION FIT INTO THE OVERALL TIMELINE OF THE COMPANY'S FORTHCOMING ERP?

A. As Company witness Mr. Hill discusses, if the 2021 ERP & CEP plays out on a similar schedule as the 2016 ERP, I expect the Commission would issue a final decision as to the resources to be acquired sometime in the first half of 2023. From that decision, the earliest that new wind and solar generation facilities could be placed in-service would be mid-2025. This makes the timing imperative for both: (1) steady progress through the ERP process without delay; and (2) timely development of transmission resources necessary to bring the new resources to load and capture tax benefits. I discuss this timing and sequencing in more detail in Section V below.

[28] *See* Proceeding No. 20M-0008E, Decision No. R21-0073 (mailed Feb. 11, 2021), at ¶¶ 49-53.

IV. UTILITY PARTNERSHIP

Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR DIRECT TESTIMONY?

A. In this section of my Direct Testimony, I discuss potential partnership opportunities that Public Service is evaluating for purposes of developing, owning, and operating the Pathway Project. Company witness Ms. Jackson further discusses the reasons for pursuing this partnership approach, and how this stands to buttress the need for and multiply the benefits of the Project.

Q. DOES PUBLIC SERVICE ANTICIPATE DEVELOPING THE PATHWAY PROJECT WITH ANY PARTNERS?

A. Yes. As the Pathway Project was studied in CCPG, Tri-State, BHE, CSU, and PRPA began discussing possible joint participation in the Project. As I noted above and described in more detail by Company witness Ms. King, the Project is the result of efforts by the CCPG's 80x30 Task Force. The 80x30 Task Force includes the utilities I just mentioned as well as stakeholders, including the OCC, Staff of the Commission, a consortium of independent power producers, and Interwest Energy Alliance. The goal of the 80x30 Task Force was to identify a project that would meet the Company's carbon dioxide emissions reduction goals, as well as meet the needs of other utilities, developers, and stakeholders, all while supporting progress toward achieving the State of Colorado's renewable energy and emission reduction goals. The Company has been in continuous discussions with the other utilities throughout the CCPG 80x30 Task Force study process and the development of this CPCN application filing about their possible participation

in the Project because of the likelihood that the Pathway Project can support the clean energy goals of more than just Public Service.

Q. DO THE PARTNERSHIP DISCUSSIONS INCLUDE THE MAY VALLEY-LONGHORN EXTENSION?

A. The potential partners are discussing partnership opportunities for both the Pathway Project and May Valley-Longhorn Extension.

Q. ARE ANY OF THE OTHER UTILITIES CO-APPLICANTS FOR THE REQUESTED CPCN?

A. Not at this time. Public Service is moving forward with our CPCN application while discussions continue, but we anticipate we will likely develop the Pathway Project with partners, which will further enhance the Project's potential to drive statewide decarbonization. Public Service, BHE, Tri-State, PRPA, and CSU are still discussing the details of a partnership, including ownership interests, construction, operation and maintenance responsibilities, as well as transfer capacity rights.

Q. HAS THE COMMISSION CONSIDERED JOINT TRANSMISSION PROJECTS BEFORE?

A. Yes. In Consolidated Docket Nos. 09A-324E and 09A-325E, the Commission granted Public Service and Tri-State CPCNs for the San Luis Valley-Calumet-Comanche Transmission Project (the "San Luis Valley Project"). Similar to the approach regulated utility partners would follow here, Public Service and Tri-State filed separate CPCN applications, and approximately six weeks later filed a joint motion requesting that the ALJ consolidate the two dockets. As Tri-State explained in its revised project description for the San Luis Valley Project following partnership

with Public Service, "the joint, one project approach attempts to minimize redundant land use, permitting, labor and material costs, and environmental impacts of two separate line and substation construction efforts by realizing efficiencies of scale."[29] Additionally, the joint project approach would maximize benefits to both Tri-State and Public Service customers "by constructing one larger project with more transmission capacity and redundancy than either partner would have constructed in an independent effort."[30] In light of this approach, the utilities explained in their joint motion to consolidate that consolidation was appropriate because the issues underlying the two CPCN applications were substantially similar, the rights of each party would not be prejudiced, and consolidation would "save the Commission and the parties … substantial resources by preventing wasteful duplication of pre-filed testimonies, discovery, witness examinations, and pre- and post-hearing pleadings."[31] The ALJ granted the utilities' request and consolidated the applications into one proceeding.[32]

Q. WHY IS PUBLIC SERVICE PROCEEDING WITH ITS CPCN APPLICATION NOW?

A. We are filing our CPCN application now in advance of our upcoming 2021 ERP & CEP filing and to accommodate the timeframe needed to fully develop and

[29] Docket Nos. 09A-324E & 09A-325E, Hr. Ex. 44 (SLV-Calumet-Comanche Transmission Project, 1/31/2009 Revised Project Description) (filed Feb. 1, 2010), at 2 § 3.

[30] *Id.*

[31] Docket Nos. 09A-324E & 09A-325E, Joint Motion to Consolidate (filed June 24, 2009), at ¶ 3.

[32] *See* Docket Nos. 09A-324E & 09A-325E, Decision No. R09-0723-I (mailed July 6, 2009), at ordering ¶¶ 7-10.

construct the Project for the related resource acquisitions that will be necessary to achieve the Company's 2030 emission reduction goal.

Q. HAS THE PROJECT BEEN DEVELOPED IN A MANNER TO EFFECTUATE TIMELY INTERCONNECTION OF RESOURCES ANTICIPATED TO BE BROUGHT ON IN THE 2021 ERP & CEP?

A. Yes. Public Service has crafted a sequencing schedule that would place the easternmost portions of the Pathway Project into service by 2025, maximizing the geographic diversity of wind resources that could interconnect to the Transmission Project and maximizing customer benefits through PTCs that are set to expire after 2025. These elements are critical to the Pathway Project, and a partnership cannot and will not change our planned timing of the Project.

Q. IS THE COMPANY'S CPCN APPLICATION MISSING ANY INFORMATION REQUIRED FOR THE COMMISSION TO EVALUATE THE PROJECT?

A. No. The CPCN Application is complete and provides the information necessary for the Commission and stakeholders to evaluate the Project. The Application and supporting testimony address transmission planning, the Project engineering and design, siting and land rights requirements, the anticipated Project schedule, and cost estimates.

Q. WILL ANY OF THESE OTHER UTILITIES SEEK COMMISSION APPROVAL OF THEIR PARTICIPATION IN THE PATHWAY PROJECT?

A. If utilities subject to Commission regulation determine they will participate, they will file their own CPCN application(s). Based on our continued discussions, the

Company expects that participating utilities will file their CPCN applications within 45 days of the Company's application.

Q. PROCEDURALLY, HOW DOES PUBLIC SERVICE PROPOSE TO PROCEED WITH THESE CPCN FILINGS IN THE EVENT ADDITIONAL CPCNS ARE FILED FOR THE PATHWAY PROJECT?

A. Similar to the San Luis Valley Project CPCN filing, Public Service's filing is designed to include the various common CPCN application elements that would be required regardless of the existence of a partnership, namely: (1) the overall Project purpose and need; (2) the alternatives considered; (3) the preferred alternative; (4) the engineering and design information; and (5) the Project schedule and costs. Within 45 days of the Company's CPCN application filing (i.e., on or before April 16, 2021), any participating Commission-regulated utility partners will file CPCN applications for their respective participation and ownership in the Project. These applications would adopt and incorporate the common elements of the CPCN application filed by Public Service here. Other utility applications would discuss: (1) project purpose and need from their perspectives; (2) each utility's own needs and how the Project meets those needs; (3) each utility's interest in the Project and additional details concerning segment responsibilities, if applicable; (4) any additional facilities each utility proposes to construct in connection with its participation in and use of the Project and for which they would need a CPCN; and (5) any additional studies (such as noise and magnetic field studies) to support the utility-specific facilities.

Should other utilities file CPCN applications, Public Service will join them in simultaneously moving the Commission to consolidate the CPCN proceedings and hear them *en banc* on a 250-day statutory timeline established by the date the Commission deems this filing complete, with the other utilities to request a shortened notice and intervention period (*e.g.*, 10 days). All intervenors permitted to intervene in the Company's CPCN proceeding would automatically be granted intervention in any other utilities' respective CPCN proceedings consolidated with this one. Once any additional CPCN applications have been filed, a revised and coordinated procedural schedule would be adopted to allow for further discovery on the new applications and the overall joint Project. Ultimately, if successful, the Commission would issue three CPCNs for each Commission-jurisdictional utility's interest in the Project.

Q. HOW WILL THIS PROCEDURAL TIMELINE RELATE TO THE TIMELINE OF THE COMPANY'S FORTHCOMING 2021 ERP & CEP?

A. Based on a 250-day timeline, Public Service expects a Commission decision on the Pathway Project would issue in early 2022. While the pendency of this proceeding will be concurrent with the Company's projected March 31, 2021 ERP & CEP proceeding, leading to a Phase I decision also anticipated in early 2022, this timeline will allow for the resolution of the Pathway Project proceeding in advance of the Company's Phase II RFP issuance. As I stated above, this timing is important as the regulatory certainty of a CPCN will allow developers to factor the Pathway Project into their resource bids, providing pricing commensurate with the ability to take advantage of PTCs, as well as the need to logistically get

construction underway for such a large endeavor which is not envisioned to be fully realized until 2027. Company witness Ms. Jackson addresses why, with or without a partnership, consolidation of this proceeding with the 2021 ERP & CEP proceeding is not appropriate.

V. COST ESTIMATES, PROJECT MANAGEMENT, AND COST RECOVERY

Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A. In this section of my Direct Testimony, I provide an overview of the Company's proposed cost estimates and cost recovery approach for the Pathway Project. I also discuss how the Company has developed its cost estimates for the Pathway Project in alignment with any potential partnership. Moreover, I testify regarding the Company's adapted approach to cost estimation—and specifically changes we have made in in light of recent Commission decisions. Company witness Mr. Brian J. Richter's Direct Testimony presents the Company's cost estimation methodology in greater detail, including an itemization of costs for the Pathway Project as required by Rule 3102(b)(IV).

Q. WHAT IS THE COMPANY'S COST ESTIMATE SUPPORTING ITS REQUEST THAT THE COMMISSION APPROVE THE PATHWAY PROJECT?

A. The Company currently estimates that the Pathway Project will cost approximately $1.7 billion. The Company estimates the May Valley-Longhorn Extension will cost approximately $250 million.

Q. IS THE COMPANY SEEKING A PRESUMPTION OF PRUDENCE FOR ITS COST ESTIMATES ASSOCIATED WITH THE PATHWAY PROJECT IN THIS PROCEEDING?

A. No. Public Service is seeking Commission approval of a CPCN, supported by its cost estimate for the Pathway Project, which is reasonable given the scope of the proposed work (i.e., a finding of need). However, the Company is not seeking a presumption of prudence for Project costs in this proceeding. This is consistent

with the approach recently ordered by the Commission in the Company's follow-on transmission CPCN proceedings for the 2016 ERP and CEPP. There, the Commission approved the Company's proposed cost estimates associated with transmission facilities needed to reliably implement its 2016 ERP, and further held that "[e]ven without a presumption of prudence, Public Service has assurance that it will recover all costs that it reasonably and prudently incurs to construct these approved projects."[33] As the Commission previously noted in the Pawnee-Daniels Park Project CPCN proceeding, so long as a cost estimate is adequate to determine the need for a project, "[p]rocedures are available to consider the prudency of expenditures in a future proceeding without jeopardizing timeliness to meet the future public convenience and necessity."[34]

Q. IS THE COMPANY SEEKING COMMISSION APPROVAL OF A CONTINGENCY FOR THE PATHWAY PROJECT?

A. No. As Company witness Mr. Richter further explains, the Company's cost estimate most closely aligns to a "scoping level" estimate, which is consistent with the level of estimate commonly provided in transmission CPCN filings.[35]

[33] Proceeding Nos. 19A-0728E & 20A-0063E, Decision No. C20-0648 (mailed Sept. 10, 2020), at ¶¶ 57-60, 68.

[34] Proceeding No. 14A-0287E, Decision No. R14-1405 (mailed Nov. 25, 2014), at ¶ 204 (affirmed by Decision No. C15-0316 (mailed Apr. 9, 2015)).

[35] *See* Proceeding No. 14A-0287E, Decision No. R14-1405 (mailed Nov. 25, 2014), at 9 n.2 (quoting Hearing Exhibit 201, Attachment No. TWG-1, at 6 n.1: "The level of accuracy for the cost estimates in this study is considered to be +/- 30%, which is typical for a project at this budgetary stage in the process … At this stage of the project, these are high level, scoping estimates, which are the best estimates that the Company is able to provide prior to detailed engineering of the Transmission Project."). Decision No. R14-1405 granted a CPCN for the Pawnee-Daniels Park Project and was approved by Commission Decision No. C15-0316 (mailed Apr. 9, 2015).

Nevertheless, in response to recent decisions in previous transmission CPCN proceedings, the Company has not included a request for approval of a contingency associated with the Project. We have instead refined development of a risk register that accounts for Project risk without a separate contingency amount. These allocated risk reserve amounts are accounted for in the Pathway Project's overall cost estimate of $1.7 billion and the May Valley-Longhorn Extension cost estimate of $250 million. However, the Company is not requesting approval of a cost contingency as part of its CPCN filing.

Q. WHY HAS THE COMPANY DECIDED NOT TO REQUEST A CONTINGENCY IN THIS PROCEEDING?

A. In past CPCN applications, the Company has included a contingency of up to +/- 30 percent for its overall cost estimate, commensurate with the level of cost refinement and certainty present at the time of filing a CPCN application. However, in recent CPCN proceedings, there has been confusion regarding the inclusion of both a risk reserve and an overall cost contingency in the Company's cost estimates. This confusion has particularly manifested itself in discussions regarding the interrelationship between these cost estimate approaches and the *accuracy* of the Company's cost estimation process.[36] To provide both the Commission and stakeholders with greater clarity and certainty regarding the

[36] *See* Proceeding Nos. 19A-0728E & 20A-0063E, Decision No. C20-0648 (mailed Sept. 10, 2020), at ¶¶ 50, 55 (discussing concepts of contingency and risk reserve); Proceeding No. 20A-0082E, Decision No. R20-0725 (mailed Oct. 12, 2020), at ¶¶ 56-61 (discussing relationship between contingency and risk reserve and indicating that "the ALJ fails to see any material distinction between a risk reserve and a contingency for purposes of reaching an appropriate cost estimate in the CPCN proceeding"), *aff'd* Decision No. C20-0886 (mailed Dec. 11, 2020), at ¶¶ 7, 19-24 (stating that the "estimated cost of the Pathway Project plus projected variance is what we consider when determining whether to grant the CPCN").

estimated costs associated with the Pathway Project, the Company has decided not to seek approval of a contingency range for the Project's total cost estimate. Mr. Richter further details the Company's risk reserve calculations, both generally and with respect to the Project, in his Direct Testimony.

Q. HAS THE COMPANY OTHERWISE REFINED HOW IT PRESENTS ITS COST ESTIMATE BASED ON THESE RECENT COMMISSION PROCEEDINGS?

A. Yes. As Mr. Richter explains, given the magnitude and complexity of the Pathway Project and in response to Commission and stakeholder input in several recent CPCN proceedings, the Company is providing detailed cost estimates for the Pathway Project that go beyond what is required by Rule 3102(b)(IV). The Company has provided its detailed cost estimates for the Project and May Valley-Longhorn Extension in Attachments BJR-1 and BJR-3 to Mr. Richter's Direct Testimony.

Q. IS THERE UNCERTAINTY REFLECTED IN THE PROJECT'S COST ESTIMATE?

A. While the Company is confident in its cost estimation process, it is impossible to know a project's costs with 100 percent certainty until a project is complete and all costs have been incurred. It is to be expected that unknown factors outside of the Company's control will arise over the course of its multi-year development and construction for a project of this scope. As discussed in the Direct Testimonies of Company witnesses Mr. Craig and Ms. Rowe, the Company developed its Project cost estimates based on well-informed assumptions regarding siting, routing, permitting and engineering design requirements. However, due to certain

variables and unknowns at this stage of the Project, these assumptions and the associated cost estimates are subject to change as the Project moves through the various stages of planning, engineering, and construction. For example, cost estimates may change: (1) if final routing results in line segments being longer than estimated due to unforeseen routing or permitting challenges; (2) if structure or foundation designs change as a result of field investigations; or (3) if the price of materials, such as steel, changes significantly. These and other variables that may influence Project cost estimates are captured to the extent feasible in the Company's risk register process described in Mr. Richter's Direct Testimony.

Q. DOES THE COMPANY ANTICIPATE ITS COST ESTIMATES WILL CHANGE IN THE EVENT OF A PARTNERSHIP?

A. No. Public Service expects the cost estimates provided in support of this CPCN will not change if other utilities join the Pathway Project as partners. What would change in the event of a partnership, however, is Public Service's share of the Project costs, which would be commensurate with the Company's percentage ownership/interest in the Pathway Project.

Q. IS PUBLIC SERVICE PROPOSING ANY PERFORMANCE INCENTIVE MECHANISM(S) ("PIM") AS PART OF THIS FILING?

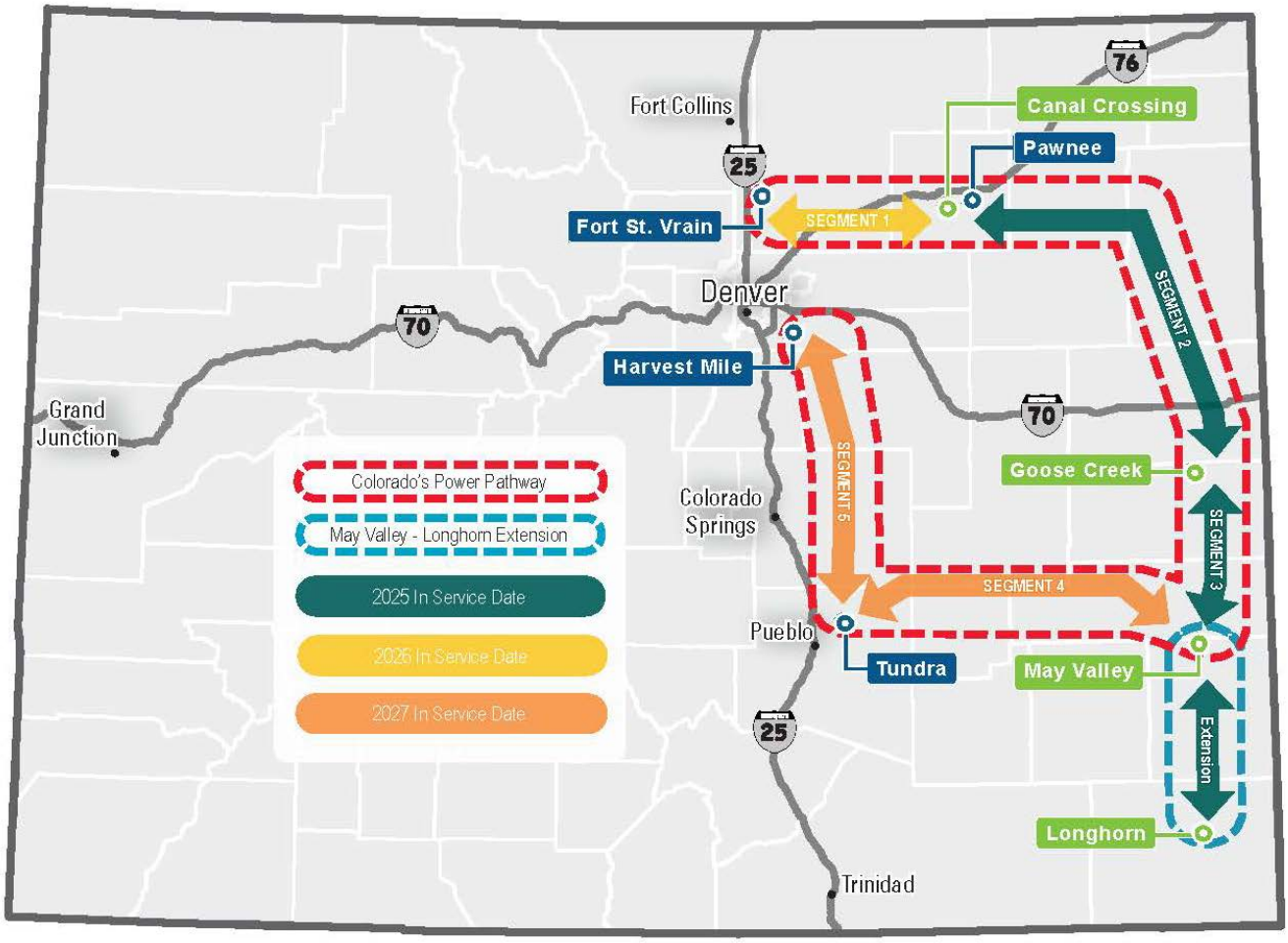
A. No. Public Service is not proposing a PIM as part of this proceeding. However, we are aware the Commission has expressed interest in this area, and as a Company we believe there is merit to thoughtful and well-crafted performance-based incentives. We will continue to evaluate potential PIMs that could apply to this or future transmission projects. Additionally, we are also evaluating potential

PIMs to propose as part of the forthcoming 2021 ERP & CEP, or as part of follow-on transmission CPCNs related to the 2021 ERP & CEP.

Q. WHAT IS THE COMPANY'S ANTICIPATED CONSTRUCTION TIMELINE AND IN-SERVICING SCHEDULE FOR THE PATHWAY PROJECT?

A. For Segments 2 (Canal Crossing to Goose Creek) and 3 (Goose Creek to May Valley) and the associated substations (Pawnee, Canal Crossing, Goose Creek, and May Valley), construction will start in 2023 with an estimated in-service date at the end of 2025. For Segment 1 (Fort St. Vrain to Canal Crossing) and the Fort St. Vrain Substation, construction will start in 2024 with an estimated in-service date at the end of 2026. For Segments 4 (May Valley to Tundra) and 5 (Tundra to Harvest Mile) and the associated Tundra and Harvest Miles Substations, construction will start in 2025 with an estimated in-service date at the end of 2027. The proposed May Valley-Longhorn Extension, if approved in this proceeding, has an anticipated in-service date at the end of 2025. Figure BAT-D-4 provides a visual depiction of the Company's proposed sequencing:

Figure BAT-D-4: Proposed Project Sequencing and Estimated In-Service Dates



The Company's estimated construction schedule is discussed further in Company witness Mr. Richter's Direct Testimony.

Q. WHAT FACTORS HAVE INFORMED THE COMPANY'S PLANNED SEQUENCING?

A. The segment numbers for the Pathway Project were assigned in clockwise geographical order along the length of the proposed transmission loop. The planned sequencing for the Project's construction and in-service dates are informed by several factors, including:

- The Company's upcoming 2021 ERP & CEP and the expiration of PTCs and Investment Tax Credits ("ITCs") (and related need for generation developers to be in-service for the 2025 expiration), as discussed in more detail by Company witness Mr. Hill;

- The reliability benefits from networking the existing Rush Creek/Cheyenne Ridge Gen-Tie, as discussed in more detail by Company witness Ms. King;

- The potential for more challenging routing and permitting activities that may be required for Segment 5 (Tundra to Harvest Mile), as discussed in more detail by Company witness Ms. Rowe; and,

- The feasibility of constructing hundreds of miles of transmission from a labor and materials procurement perspective.

Q. HOW DOES THE TIMING OF FEDERAL TAX CREDITS INFLUENCE THE COMPANY'S PROPOSED PROJECT TIMELINE?

A. As explained in Company witness Mr. Hill's Direct Testimony, the Consolidated Appropriations Act, passed by Congress and signed into law at the end of 2020, included statutory provisions that will affect resource acquisition timing in the 2021 ERP & CEP. The legislation extended the in-service date when wind and solar facilities need to be placed in service from end-of-year 2024 to end-of-year 2025. Specifically, wind and solar facilities placed in-service by December 31, 2025 can qualify for 60 percent PTC and 26 percent ITC, respectively, so long as the project has begun construction by January 1, 2022 (PTC) and January 1, 2023 (ITC). The ability of a generation facility to qualify for these tax credits will provide considerable cost savings to customers; therefore, a driver of the Company's proposed construction timeline for the Project is how it can maximize customer benefits through tax credits—as well as the need to advance emission reductions.

Mr. Hill provides some illustrative examples of the benefits of capturing these tax credits for customers.

Q. WHAT STEPS DOES THE COMPANY INTEND TO TAKE FROM A PROJECT PERSPECTIVE TO POSITION ITSELF TO CAPTURE THE BENEFIT OF THE PTC AND ITC EXTENSION FOR CUSTOMERS?

A. Public Service plans to sequence the construction of the Pathway Project in order to put customers in the best position to benefit from the acquisition of tax-advantaged clean energy resources. This sequencing is discussed in more detail by Company witness Mr. Richter.

Q. WHAT ARE THE IMPLICATIONS ON THE PROJECT IF FEDERAL LEGISLATION IS PASSED EXTENDING THESE FEDERAL TAX CREDITS *BEYOND* THE MOST RECENT EXTENSION?

A. At this point in time, any further changes are speculative. To be sure, such changes could drive additional cost-savings for customers. It seems to me a short-sighted strategy, however, to sit back and bet on further action from the U.S. Congress. I do not say that critically of the Federal government, I just know that implementing meaningful Federal energy policy changes is not an easy task. Accordingly, it is an unsound strategy to stand pat, and we need to move forward now to harness the benefits of the recent extension. Further, even if Federal tax credits (i.e., the PTC and ITC) were extended as part of future Federal legislation, we do not believe such an extension in and of itself would have any negative implications on the proposed Pathway Project or our proposed sequencing. If

anything, customers would hopefully benefit from additional Federal tax credit savings by virtue of an extended timeline to capture them.

Q. ARE THERE ADDITIONAL REASONS BEYOND CAPTURING FEDERAL TAX CREDITS THAT SUPPORT PROMPT ACTION ON THIS PROJECT?

A. Yes. Colorado's economywide greenhouse gas emissions reduction targets under HB19-1261 include a 26 percent target for reduction by 2025. This target will be challenging to meet and bringing on clean energy earlier will be critical in the State of Colorado's efforts to meet both the 2025 and 2030 goals in the bill. Further, partner communities have emissions reduction objectives during the 2020s, and in general our customers and communities support carbon dioxide emissions reduction, and support it occurring sooner.

Q. PLEASE DISCUSS THE COMPANY'S EXPERIENCE THAT WILL ENABLE IT TO DEVELOP A PROJECT OF THIS MAGNITUDE.

A. Xcel Energy has a growing portfolio of investor-owned transmission systems with more than 20,000 miles of transmission lines and more than 1,200 substations across 10 states, serving 22,000 megawatts of customer load. Xcel Energy has a well-established history of successfully developing, constructing, and managing large-scale transmission projects across our footprint, including recent or ongoing projects spanning nearly 800 miles in our upper Midwest service area and nearly 1,500 miles in Texas and New Mexico.

More specifically, Public Service's more recent experience with complex, large-scale projects includes: (1) the 115-mile, 345 kV Pawnee-Daniels Park Project plus substations, approved in Proceeding No. 14A-0287E; (2) the 90-mile,

345 kV Rush Creek Gen-Tie plus substations, approved in Proceeding No. 16A-0117E; and (3) the 70-mile, 345 kV Rush Creek Gen-Tie extension plus substations, approved in Proceeding No. 18A-0905E.

As Mr. Richter explains, the Company also has well-developed project management and cost estimation processes in place to accurately forecast, track, and control project expenditures. Those who work within each of the Company's business areas are experts within their field, with years of collective subject matter expertise and knowledge of current and emerging industry best practices. Public Service is confident that the same processes and expertise that enabled it to successfully complete these past transmission projects will enable successful project development here as well.

Q. HOW DOES THE COMPANY PROPOSE TO RECOVER THE COSTS ASSOCIATED WITH THE PATHWAY PROJECT?

A. Public Service will recover the retail share of capital costs associated with constructing the Pathway Project facilities through its Transmission Cost Adjustment ("TCA"), subject to the terms set forth in the Company's TCA tariff. Public Service will recover the share of costs associated with the Pathway Project from wholesale transmission customers through its FERC-jurisdictional transmission rates.

Q. ARE THERE ANY OTHER COST-RECOVERY ISSUES YOU WOULD LIKE TO DISCUSS THAT RELATE TO THE PATHWAY PROJECT?

A. Yes. One of the additional benefits of the Pathway Project is that it will result in the existing Rush Creek Gen-Tie and a portion of the Cheyenne Ridge Gen-Tie

extension and associated facilities becoming networked transmission facilities, and no longer functionalized as transmission serving generation. While Company witness Ms. King discusses the benefits of this from a transmission planning perspective, this will also have implications from a regulatory and ratemaking perspective.

The Company is currently recovering the retail portion of the Rush Creek Gen-Tie costs through retail base rates because this portion of the Gen-Tie exclusively serves the generating facilities interconnected to it and is classified as a production asset. The Company is currently recovering costs associated with the Cheyenne Ridge extension of the Gen-Tie through the Electric Commodity Adjustment ("ECA").

Once any Rush Creek or Cheyenne Ridge Gen-Tie assets become networked facilities, they will no longer be classified as "transmission serving generation" (*i.e.*, production assets). After these Gen-Tie facilities are networked, any costs related to the networked facilities previously classified as production will be reclassified as transmission costs. The Company will request Commission approval to implement the necessary rate changes as part of a rate case and/or other appropriate filing(s) considering when Rush Creek/Cheyenne Ridge facilities become networked facilities.

Q. HOW DOES THE COMPANY PROPOSE TO INFORM THE COMMISSION OF ANY FUTURE CHANGES TO ITS PROJECT COST ESTIMATES?

A. Although the Commission's Rules do not require reporting on projects that are granted a CPCN, the Commission has in the past required semi-annual reporting

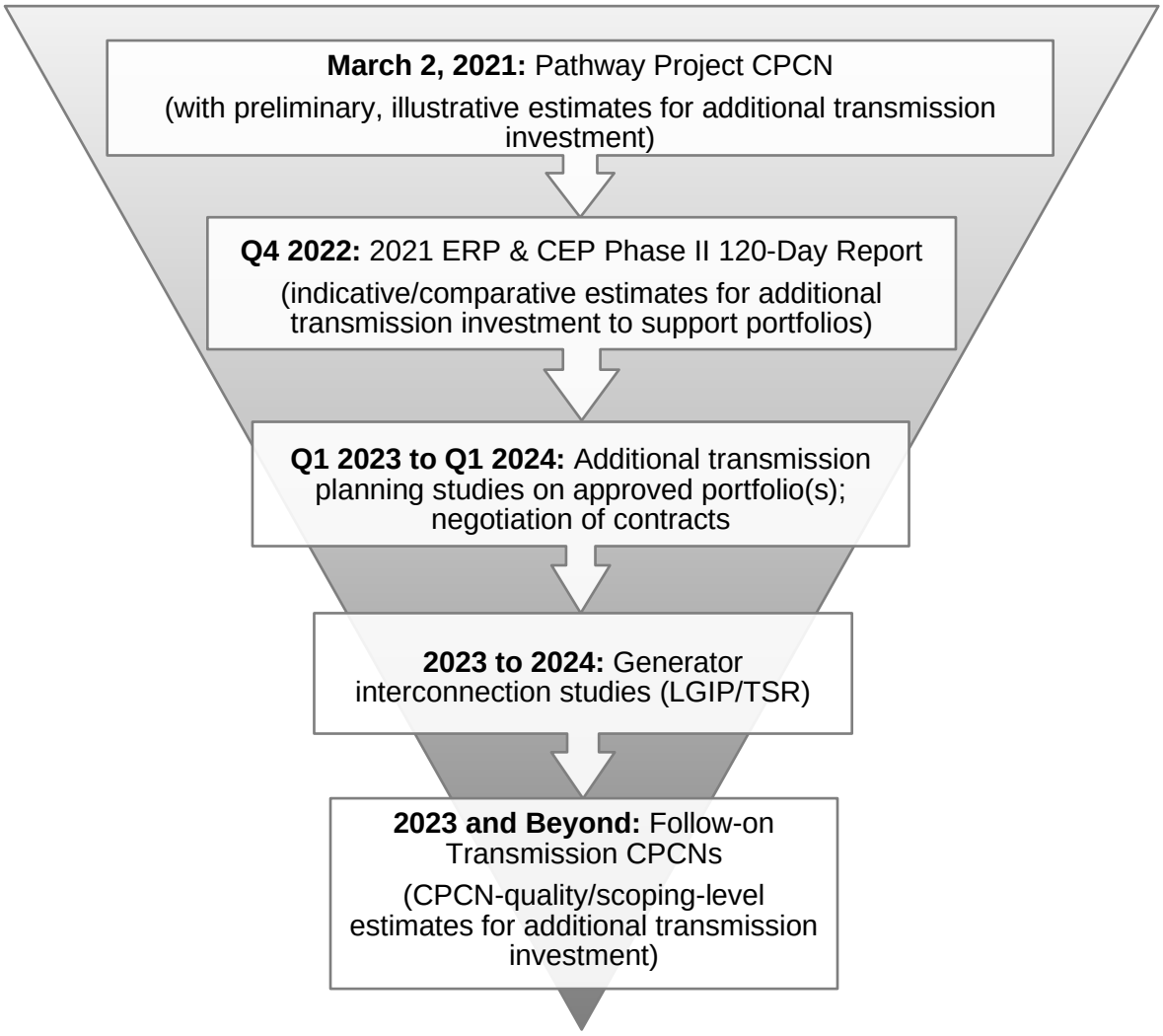
for projects of larger or more complex magnitudes. In recognition of the transparency that semi-annual reporting provides the Commission and stakeholders, Public Service proposes to report on the Pathway Project in a manner similar to that recently approved by the Commission in Consolidated Proceeding Nos. 19A-0728E and 20A-0063E. Company witness Mr. Richter discusses the Company's semi-annual reporting proposal in more detail in his Direct Testimony.

Q. WILL OTHER TRANSMISSION INVESTMENT BE NEEDED TO IMPLEMENT THE COMPANY'S FORTHCOMING 2021 ERP & CEP?

A. Yes. The Pathway Project reflects a significant component of the transmission investment necessary to accommodate the 2021 ERP & CEP. At the same time, it is nearly certain that additional transmission investment will be needed to ultimately implement the final approved resource plan. This will likely include reactive support/voltage controls and other network upgrades, similar to what was required to implement resources selected in the 2016 ERP and CEPP. The Company will not be able to begin identifying the additional transmission costs associated with the 2021 ERP & CEP until it has received and evaluated bids, and built resource portfolios, through the 120-Day Report process. Once final resources are approved through the Commission's Phase II decision, the Transmission Planning team will conduct additional, more specific studies on the approved portfolio(s) as it deems necessary. The Company will then further refine its transmission cost estimates to CPCN-quality levels for any follow-on transmission investment following the necessary interconnection studies.

Company witness Ms. King discusses this process more fully in her Direct Testimony, and Figure BAT-D-5 below provides a high-level visual representation. Note that the timeline shown in Figure BAT-D-5 is a rough projection for illustrative purposes only, and is subject to change based on future developments.

Figure BAT-D-5: Estimated Timeline for Additional 2021 ERP & CEP Transmission Investment



Q. ON WHAT TIMELINE DOES THE COMPANY ANTICIPATE IT WILL BE ABLE TO BRING FORWARD MORE REFINED ESTIMATES FOR THE OTHER TRANSMISSION INVESTMENT NECESSARY TO IMPLEMENT THE 2021 ERP & CEP?

A. Assuming a March 31, 2021 filing for its 2021 ERP & CEP, the Company anticipates its Phase II 120-Day Report will be filed late next year. The 120-Day Report will provide the Commission with indicative/comparative estimates of the full scope of transmission investment associated with the various Phase II portfolios evaluated, which is incremental to the costs associated with the Pathway Project. The Company will then perform more detailed planning studies and begin generator interconnection studies after a Phase II decision issues that approves the final resource plan portfolio. Following these studies, Public Service will file follow-on transmission CPCN applications with CPCN-quality cost estimates for these additional transmission investment needed to interconnect the chosen generation resources. This is the same process that the Company followed in the 2016 ERP and CEPP. Company witness Ms. King discusses this process in detail in her Direct Testimony, including the specific studies the Company will perform.

Q. ARE THERE ANY OTHER REGULATORY CONSIDERATIONS ABOUT THE PROJECT YOU WOULD LIKE TO DISCUSS?

A. Yes. I stated above that one substation included in the Project, the Tundra Substation, is planned but not yet in service. While Ms. King further discusses the technical aspects of the Tundra Substation, I would like to provide some additional clarifying information regarding the CPCN for this facility.

Q. PLEASE EXPLAIN.

A. The Company has identified the Tundra Substation throughout its Direct Case as a "planned' but not in-service project, as it has been separately identified in previous filings before the Commission. Specifically, the Company identified in its 120-Day Report in the 2016 ERP proceeding certain generation facilities in the approved CEPP that would require the construction of the Tundra Substation. The need for the substation was also identified in the Company's 2020 Rule 3627 Plan filed on February 3, 2020.[37]

We further identified the Tundra Substation in the Company's 2020 Rule 3206 Report as "a new 345 kV switching station tapping the Comanche – Daniels Park 345 kV Line." The Rule 3206 Report noted that the substation will consist of a 3-breaker ring configuration and is needed to interconnect the new 250 MW / 125 MW solar-plus-storage generating facility approved as part of the CEPP.[38] A Rule 3206 Report is a report the Company submits each year to the Commission pursuant to Rule 3206. The Rule 3206 Report identifies planned new construction or extension of transmission facilities for the next three calendar years.

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[37] *See* Proceeding No. 20M-0008E, 10-Year Transmission Plan for the State of Colorado to Comply with Rule 3627, at 5, 53 (filed Feb. 3, 2020). The substation is identified among future other transmission projects as the "CEPP Switching Station Bid X645."

The Company's 2019 Rule 3206 Report noted that the 2016 ERP and CEPP would require switching stations "to interconnect generation resources that comprise the CEPP" and that Public Service "is continuing to study other necessary switching stations necessary to implement the CEPP and associated costs." *See* Proceeding No. 19M-0005E, Rule 3206 Report: Proposed Construction or Extension of Transmission Facilities, 2020 through 2022 (filed Apr. 30, 2019), at 25.

[38] Proceeding No. 20M-0005E, Rule 3206 Report: Proposed Construction or Extension of Transmission Facilities, 2021 through 2023 (filed Apr. 30, 2020), at 23. In the Company's Amended Rule 3206 Report, filed on November 11, 2020, the description of the Tundra Substation appears on page 25.

Q. HAS THE COMPANY FILED A CPCN APPLICATION FOR THE TUNDRA SUBSTATION?

A. Not yet. The Company anticipates filing an application for a CPCN for the Tundra Substation, potentially with other interconnection facilities needed to reliably interconnect the CEPP, in mid-2021. That CPCN application will seek approval for only those portions of the Tundra Substation necessary to interconnect the generation facilities from the 2016 ERP and CEPP. The substation would be in service by the end of 2022.

VI. ECONOMIC DEVELOPMENT AND BEST VALUE EMPLOYMENT METRICS

Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A. In this section of my Direct Testimony, I discuss the economic development benefits of the Pathway Project and the Company's proposed use and reporting of BVEM for the Pathway Project.

Q. WHAT TYPES OF ECONOMIC DEVELOPMENT BENEFITS WILL THE PATHWAY PROJECT DELIVER?

A. The $1.7 billion Pathway Project (and $250 million May Valley-Longhorn Extension, if approved) will support the economic vitality of our state, while delivering significant economic benefits to rural communities across eastern and southern Colorado over the short- and long-term. More immediately, Project construction will require substantial amounts of contract labor, while also providing local jurisdictions and host communities with additional tax revenues and potential employment opportunities. Moreover, once the Project is completed, it will drive ongoing job opportunities and employment in the clean energy projects that ultimately interconnect to the Pathway Project.

Q. DOES THE COMPANY ANTICIPATE THERE WILL BE OPPORTUNITIES FOR UNION LABOR TO HELP DEVELOP THE PATHWAY PROJECT?

A. Yes.

Q. IS THE COMPANY REQUIRED TO SOLICIT BVEM FOR TRANSMISSION PROJECTS LIKE THE PATHWAY PROJECT?

A. No. While Rule 3102 requires this information be provided for construction or expansion of generation facilities, there is no equivalent requirement for

transmission facilities such as the Pathway Project. However, the Company is choosing to provide this information as it believes it is both appropriate and beneficial to support Colorado's local workforce.

Q. IS THE COMPANY PROPOSING TO VOLUNTARILY PROVIDE BVEM INFORMATION FOR ANY ELEMENTS OF THE PATHWAY PROJECT?

A. Yes. Various elements of the transmission line for the Pathway Project will be constructed by contractors selected through a competitive solicitation process. The Company plans to request that bidders provide BVEM information as part of their proposals. This includes information regarding the availability of training programs, employment of Colorado workers as compared to importation of out-of-state workers, long-term career opportunities, and industry-standard wages, health care, and pension benefits, as set forth in Commission Rules. In addition, given the ERP Rules are not finalized, we will follow a similar approach to that of the Cheyenne Ridge Wind Project competitive process for transmission and include guidelines for BVEM that go beyond the current rule requirements. These guidelines were developed based on additional discussions with union and labor stakeholders, and in my view, they provide helpful supplemental information to the Company in evaluating the BVEM for a particular contractor. Public Service will weigh these factors in its evaluation of the bids received and consider them in evaluating responses in the competitive process.

Given Public Service plans to solicit BVEM information as part of its competitive solicitation process for construction of the transmission line elements of the Pathway Project, this information cannot be known until the Company enters

into contracts with the selected bidders. Public Service will therefore file a status report within 45 days of awarding contracts to provide the Commission with BVEM information for the chosen contractor(s), as contemplated in Rule 3102(f). Consistent with that rule, parties will also be able to file comments on this status report within 15 days.

VII. CONCLUSION AND RECOMMENDATIONS

Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS.

A. I recommend the Commission: (1) issue Public Service a CPCN for the approximately 560-mile 345 kV, double circuit Pathway Project and associated substation expansions and additions; (2) find that the Project is reasonable and in the public interest, supported by the Company's cost estimate of approximately $1.7 billion for the Project, consistent with recent Commission findings; and, (3) find that, consistent with Commission Rule 3206(e) and (f), the expected maximum magnetic field and noise levels associated with the Pathway Project are reasonable and require no further mitigation or prudent avoidance measures.

Additionally, I recommend the Commission consider issuing a CPCN in this proceeding for an additional transmission facility—the May Valley-Longhorn Extension—that would further enhance the geographic diversity of renewable resource projects that could come online in the future. If the Commission approves the May Valley-Longhorn Extension in this proceeding, based on the Company's cost estimate and other information in our direct case, the Company requests the Commission also find that the expected maximum magnetic field and noise levels associated with the May Valley-Longhorn Extension are reasonable and require no further mitigation or prudent avoidance measures.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

Statement of Qualifications

Brooke A. Trammell

As the Regional Vice President of Rates and Regulatory Affairs, I am responsible for providing leadership, direction, and technical expertise related to regulatory processes and functions for Public Service. My duties include the design and implementation of Public Service's regulatory strategy and programs, and directing and supervising Public Service's regulatory activities, including oversight of rate cases and other related filings. Those duties include: administration of regulatory tariffs, rules, and forms; regulatory case direction and administration; compliance reporting; complaint response; and working with regulatory staffs and agencies. Additionally, I oversee the rate implementation procedures for all of Xcel Energy's utility operating companies.[39]

I accepted the Regional Vice President position with Public Service in June 2018 after holding the Director of Customer and Community Relations position in another Xcel Energy Inc. subsidiary, Southwestern Public Service Company ("SPS"), since June 2016. From January 2014 to June 2016, I was Manager, Rate Cases and was responsible for the strategic oversight of SPS's regulatory activity in Texas after being promoted from Case Specialist, the position in which I started with Xcel Energy in September 2012. As a Case Specialist, I supported SPS's proceedings before regulatory authorities in Texas and New Mexico as well as the Federal Energy Regulatory Commission and led SPS's

[39] Xcel Energy Inc.'s operations include the activity of four wholly-owned utility subsidiaries that serve electricity and natural gas customers in eight states. These utility subsidiaries, referred to as operating companies, are Northern States Power-Minnesota serving electric and natural gas customers in Minnesota, North Dakota, and South Dakota; Northern States Power-Wisconsin serving electric and natural gas customers in Wisconsin and Michigan; Southwestern Public Service Company serving electric customers in Texas and New Mexico; and Public Service serving electric, natural gas and steam customers in Colorado.

participation and policy analysis in administrative rulemaking proceedings in all jurisdictions.

Prior to Xcel Energy, I was employed with PNMR Services Company, a wholly-owned subsidiary of PNM Resources, Inc., the parent holding company of Public Service Company of New Mexico and Texas-New Mexico Power Company. I held various roles in the Pricing and Regulatory Services department including Rates Analyst II, Senior Rates Analyst and Project Manager, Federal Regulatory Affairs. In those positions, I provided cost of service, cost allocation, pricing, and rate design analysis to support general rate cases, audited rate calculations and filing packages, and managed regulatory filings and proceedings in the company's retail jurisdictions before managing PNM's regulatory proceedings before the Federal Energy Regulatory Commission and leading strategic regulatory and transmission policy initiatives.

I hold a Master of Business Administration degree from West Texas A&M University along with a Master of Arts degree in Economics with a specialization in Public Utility Regulation and a Bachelor of Science degree in Agricultural Economics and Agricultural Business from New Mexico State University.

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 A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR COLORADO'S POWER PATHWAY 345 KV TRANSMISSION PROJECT AND ASSOCIATED FINDINGS REGARDING NOISE AND MAGNETIC FIELD REASONABLENESS	**PROCEEDING NO. 21-XXXXE**

AFFIDAVIT OF BROOKE A. TRAMMELL
ON BEHALF OF
PUBLIC SERVICE COMPANY OF COLORADO

I, Brooke A. Trammell, being duly sworn, state that the Direct Testimony was prepared by me or under my supervision, control, and direction; that the Direct Testimony is true and correct to the best of my information, knowledge and belief; and that I would give the same testimony orally and would present the same attachments if asked under oath.

Dated at Denver, Colorado, this 1st day of March, 2021.

Brooke A. Trammell
~~Regional Vice President~~ of
Rates and Regulatory Affairs

Subscribed and sworn to before me this 1st day of Mar., 2021.

AMANDA CLARK
Notary Public
State of Colorado
Notary ID # 20164004880
My Commission Expires 03-25-2024

Notary Public

My Commission expires 3/25/2024