BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

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IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF COLORADO FOR APPROVAL OF ITS 2022–2025 RENEWABLE ENERGY COMPLIANCE PLAN	**)**	**PROCEEDING NO. 21A-____EG**

DIRECT TESTIMONY AND ATTACHMENTS OF JACK W. IHLE

ON

BEHALF OF

PUBLIC SERVICE COMPANY OF COLORADO

December 20, 2021

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

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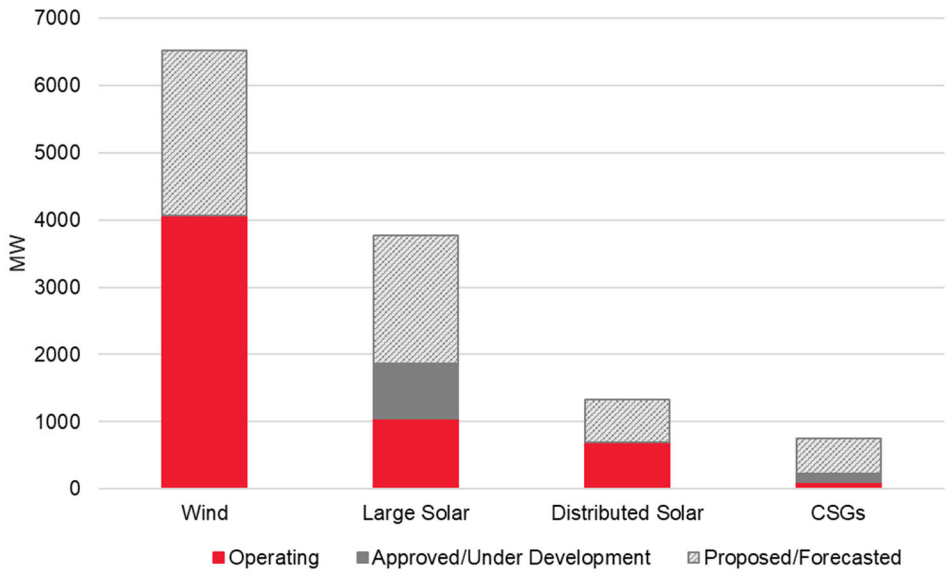
EXECUTIVE SUMMARY AND INTRODUCTION OF PUBLIC SERVICE COMPANY OF COLORADO'S 2022-2025 RENEWABLE ENERGY COMPLIANCE PLAN

Public Service Company of Colorado ("Public Service" or the "Company") is pleased to present its 2022-2025 Renewable Energy Compliance Plan ("2022-25 RE Plan" or "Plan"). This Plan is designed to build on a strong history of implementation of distributed generation ("DG") and renewable energy products on our system and take the distributed energy and customer choice programs that are the focus of our current RE Plan forward for the next four years. As of June 2021, Public Service has over approximately 67,000 rooftop solar customers, representing five percent of our residential customer base. This number has been growing at a pace of about 5,000-6,000 customers per year. Additionally, we have approximately 105 MW_{AC} of community solar gardens installed and approximately 152 MW under development. We have strong income qualified programs that allow our most vulnerable customers also participate in our customer focused private renewable energy programs. Under the 2022-25 RE Plan, the Company expects to add approximately 700 megawatts ("MW") of distributed resources

and 300 MW of utility-scale solar. The Plan will also offer new renewable products, solar plus storage, and a low-carbon natural gas product.

The 2022-25 RE Plan is designed to support a vision for a variety of clean energy resources on the Public Service system first articulated in the Company's 2021 Electric Resource Plan and Clean Energy Plan ("2021 ERP & CEP") filing in Proceeding No. 21A-0141E, including distributed energy resources ("DERs"). Specifically, the Company forecasts 1,158 MW of distributed solar resources (total from both on-site solar and community solar gardens ("CSGs")) between 2021 and 2030 that will be depended upon to deliver to meet the reliability needs of the system. This Plan now supports that trajectory by proposing 700 MW of distributed resources through 2025. For full context, the *proposed* 700 MW of incremental distributed energy resources through 2025 under this Plan is a significant contribution to a *forecasted* 1,158 MW of incremental DERs through 2030 that would join today's *existing* more than 600 MW of DERs, as reflected in the figure below.

Figure JWI-ES-1: Estimated Public Service Renewable Energy Capacity by 2030[1]



The existing, under development, and planned renewable energy of various types and sizes are all part of the Company's plan to reduce its carbon emissions by approximately 85 percent by 2030. In 2030, the Company anticipates that renewable energy will comprise about 80 percent of generation on an annual basis. The renewable energy specifically proposed to be offered for the years 2022 to 2025 under this Plan will support Public Service's broader renewable forecast and portfolio, while continuing to afford customers an array of choices that will enable them to achieve their own renewable energy and emission reduction goals.

[1] Figure notes: Figure includes power purchase agreements ("PPAs"), Company-owned resources, and distributed solar resources including "net metering only" or non-program distributed solar (which includes Big Horn Solar). The Large Solar category includes Renewable*Connect® solar capacity. The category Approved/Under Development represents resources selected and approved under the previous ERP in Proceeding No.16A-0396E, and distributed solar additions in progress based on previous and current RE Plans.

2022-25 RE Plan Themes

Theme 1: Grid Value

Beyond these high-level numbers, the 2022-25 RE Plan emphasizes several key themes. The first theme is grid value. As the amount of renewable energy on the Company's system increases, so too do the challenges of system integration and operation. Simply put, the forces of nature dictate the availability of wind and solar generation, the patterns of human activity drive energy demand, and the Company must reconcile the two. This results in both surpluses and shortages of renewable generation at different times, which do not always correspond with the level of demand. The utility has managed these challenges on larger-scale renewables through means such as monitoring, system dispatch, storage, and curtailments. As the scale of distributed resources on the Company's system increases, the need to develop more integration management tools also increases.

This RE Plan also seeks to drive more value from distributed resources by creating solar plus storage programs in the residential and CSG markets, structuring all distributed programs in alternating current ("AC") rather than direct current ("DC"), and providing the Company with operational flexibility with respect to CSGs.[2] The Company will also enhance the value of DERs by working to reduce the gap between offered program capacity and actual installed capacity.

[2] Structuring renewable programs in AC can flatten and broaden the generation output profile to some extent, though without storage the availability of sunshine still limits solar output to between certain hours of the day. The Company is introducing curtailment provisions into the S*RC Producer Agreement (Section 5.7) that may require an SRC Producer (or the PV System Owner) to curtail the delivery of PV Energy from the PV System for non-economic reasons.

Theme 2: Certainty

The second theme is certainty. The Company's proposed Plan increases certainty for Colorado's distributed solar and DER industry by proposing a four-year RE Plan, the longest in Public Service's history.[3] This four-year program offering period, with known capacity offered by year, will allow greater certainty for the DER industry to plan its business, market to customers, and finance its projects. The Company has worked to provide increased certainty for the industry by first forecasting the capacity trajectory for DERs in its recently filed 2021 ERP & CEP consistent with its 2030 objectives, and is following through in this Plan with a trajectory for 2022-2025 that is consistent with those 2030 goals. These renewable energy goals align with Colorado's emission reduction policy and are useful guideposts for this 2022-25 RE Plan. Interwoven with this theme of certainty is the increased integration of DERs under this Plan, which also aligns with the Company's overall resource planning efforts.

Theme 3: Budget Discipline & Transparency

The third theme of this Plan is budget discipline and transparency. There are three primary lenses to the budget question. The first budget lens is the Renewable Energy Standard Adjustment ("RESA") lens. This has historically been the dominant lens for RE Plans, as the RESA is the statutorily created vehicle to govern and recover the incremental costs of renewable energy. The RESA has been altered in recent years by the Colorado Energy Plan and Colorado Energy Plan Adjustment ("CEPA") which

[3] The four-year cycle is in Commission Rules, but the Company has sought and received waivers from this requirement in previous RE Plans.

reduced the RESA collection level from two percent to one percent.[4] The RESA is also potentially affected by Senate Bill 19-236 ("SB 19-236") and the Company's related 2021 ERP & CEP, and further by Decision No. C20-0700 in Proceeding No. 20AL-0191E, which provided for ending collection of the RESA on December 31, 2022 absent a proposal to extend it. The Company is proposing in this 2022-25 RE Plan to extend the RESA at a one percent collection level for the duration of the Plan and provides a forecast of the RESA and how it has calibrated the proposed programming, incentive levels, and capacities in this Plan to that forecast.

The second budget lens is equity. Public Service has included income-qualified ("IQ")[5] renewable programming since 2017, and the Company now proposes an increased focus on equity to meet the 40 percent spending requirement of Senate Bill 21-272 ("SB 21-272"). That bill sent a strong signal on inclusion of equity considerations in RE planning, and the Company's 2022-25 RE Plan is responsive to that signal, projecting an estimated 52 percent incentive expenditures for equity programming.

The third budget lens is total cost. While the RESA represents an incremental cost perspective on distributed (and other) renewables, the Company is taking a more comprehensive and disciplined cost approach to this Plan—one that is grounded in a revenue requirements approach. As a rate-regulated utility, the Company's rates and offerings are typically set based on revenue requirements modeling. Given the breadth and magnitude of RE offerings (and associated costs) the Company has in place and is

[4] This action was approved to support substantial amounts of renewable energy under the Colorado Energy Plan in Proceeding Nos. 16A-0396E (the "2016 ERP") and 17A-0797E (the Accelerated Depreciation/RESA Reduction or "ADRR" Proceeding).
[5] The term "Income Qualified" or "IQ" was previously characterized as "low income" programming in past RE Plans.

proposing, the Company believes it is an appropriate time to shift its RE planning to a more cost-disciplined approach that better aligns its renewable programming budgets with revenues intended to support such programming. The 2022-25 RE Plan will support approximately $3 billion in new solar and energy storage investments, and the revenue requirements for many of those investments will continue for more than 20 years past the approval of this Plan. Public Service presents this data to better inform the Commission of renewable program costs as the scale of DERs continues to increase, while the costs of large-scale resources continue to remain significantly lower than DERs on a per-MW basis.

In creating the proposals set forth in the 2022-25 RE Plan, the Company sought to incorporate the above-mentioned themes, while also considering significant input from stakeholders through robust engagement, as well as incorporating the Company's extensive experience in operating renewable programs across eight states. The table below summarizes the Company's key programming proposals contained in this Plan.

Table JWI-ES-1: Proposed Renewable Energy Plan Programs for 2022 – 2025[6]

	Offering	2022	2023	2024	2024	Total RE Plan
Net Metering Only	Net Metering Only	47	47	47	47	188
Solar*Rewards	Commercial & Industrial	15	15	15	15	60
	Large RFP	15	15	15	15	60
	Residential Income Qualified On-site Solar (CEO)	0.25	0.25	0.25	0.25	1
	Solar*Rewards Battery Connect	4.3	4.3	4.3	4.3	17.2
Off-site	Off-Site Solar	41	41	0	0	82
Solar*Rewards Community	CSG – Request for Proposal (RFP)	35	35	35	35	140
	CSG – Standard Offer	30	30	30	30	120
	Xcel Income Qualified CSGs	10	10	10	10	40
Total Distributed Renewable Programs		**198**	**198**	**157**	**157**	**708**
Renewable*Connect		300				300
Total Customer Renewable Programs						**1,008**

Overall, the programs and products proposed in the 2022-25 RE Plan will meet the Company's three key objectives to: (1) lead the clean energy transition; (2) enhance the customer experience; and (3) keep the bills lows. Equally important, the Company's proposed 2022-25 RE Plan helps support the State of Colorado's economywide greenhouse gas emission reduction goals as embodied in SB 19-236 and other recent and past legislation. This Plan works in conjunction with the Company's 2021 ERP & CEP to advance the clean energy transition. Public Service respectfully requests the Commission approve the 2022-25 RE Plan in full.

[6] Some numbers in this table do not sum due to rounding. The "Net Metering Only" category is not an incentive-funded program but is provided for reference.

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Attachment JWI-4	2020-21 RE Plan Compliance Table

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DIRECT TESTIMONY AND ATTACHMENTS OF JACK W. IHLE

I. INTRODUCTION, QUALIFICATIONS, AND PURPOSE OF TESTIMONY

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Jack W. Ihle. 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 Director, Regulatory and Strategic Analysis. 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 Director, Regulatory and Strategic Analysis, I am responsible for overseeing the Company's regulatory filings and strategy as they pertain to resource planning, renewable energy policy, retail product policy, electric vehicles, and other policy-driven issues. A 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. The purpose of my Direct Testimony is to provide an overview of the Company's 2022-2025 Renewable Energy Compliance Plan ("2022-25 RE Plan" or "Plan"), including an introduction of the Company witnesses filing Direct Testimony in support of the Plan. I explain the legislative and regulatory background pertaining to the Company's 2022-25 RE Plan, discuss the Renewable Energy Standard ("RES") requirements and compliance obligations applicable to this Plan filing, and demonstrate how our Plan meets or exceeds these requirements. I discuss the current state of the Company's renewable program offerings and describe the Company's proposals with respect to the acquisition of Retail Distributed Generation ("DG"), Non-DG, and Wholesale DG resources as part of this Plan, including how this aligns with the Company's current resource planning initiatives. I also provide an overview of cost recovery under the Renewable Energy Standard Adjustment ("RESA") and the Company's RESA forecast, and discuss the Company's going-forward proposal for the RESA as it relates to this Plan. Finally, I address other key issues (social cost of carbon, stakeholder outreach, administrative budget flexibility, and the Company's approach to income-qualified

("IQ") programs) relevant to the Plan and provide a list of the Company's requested approvals in this proceeding.

Q. PLEASE SUMMARIZE THE CONTEXT SURROUNDING THE COMPANY'S 2022-25 RE PLAN.

A. This 2022-25 RE Plan is an integral part of the Company's plan to continue to lead the clean energy transition in the State of Colorado while simultaneously enhancing our customer's experience and balancing that with keeping bills low. This Plan serves as a complement to the Company's 2021 Electric Resource Plan and Clean Energy Plan ("2021 ERP & CEP"), which is expected to lead to 85 percent carbon emission reductions below 2005 levels by 2030. The modeling assumptions for retail DG used in the 2021 ERP & CEP were key guideposts in developing the program capacities set forth in this Plan. Further, this Plan continues to build upon existing offerings with more customer choice for participation in voluntary renewable programming. As I discuss later in my testimony, customer demand for renewable energy programs remains strong within the Company's service territory with more than 10 percent of our retail customers opting into voluntary renewable programs today. Public Service expects the expansion of program capacity proposed in this Plan to more than double the amount of customer participation in voluntary renewable programs over the next four years.

Moreover, the 2022-25 RE Plan will support approximately 1 GW of total incremental capacity, corresponding to $3 billion in new solar and energy storage investments, and the revenue requirements for many of those investments will

continue for more than 20 years past the approval of this Plan. Given the breadth and magnitude of the RE offerings (and associated costs) the Company has in place and is proposing, the Company also believes it is an appropriate time to shift our RE planning to a more cost-disciplined approach that better aligns our renewable programming budgets with revenues intended to support such programming.

Q. PLEASE PROVIDE AN OVERVIEW OF THE COMPANY'S 2022-25 RE PLAN.

A. The 2022-25 RE Plan will add programs over a four-year period that cumulatively total more than 700 MW_{AC} of incremental distributed renewable capacity. Company witness Ms. Kerry R. Klemm's Direct Testimony discusses most of these program offerings, detailing the specific capacity and incentive levels the Company is proposing, along with applicable program modifications. Additionally, the Company is proposing to add an incremental 300 MW of cost-effective large-scale solar capacity to support continued customer interest in Renewable*Connect® "2.0," as further explained by Company witness Mr. R. Neil Cowan in his Direct Testimony. Further the Company is seeking to expand its Renewable*Connect program with adding another tranche of capacity, evolving its existing Windsource® product into the Renewable*Connect product line, offering and a new community purchase option, and a new renewable gas offering. This is all in addition to the existing 654 MW of cumulative capacity the Company has interconnected to date under renewable programs. Overall, the Company anticipates doubling its retail DG capacity through of this Plan.

Q. PLEASE SUMMARIZE THE ELIGIBLE ENERGY CAPACITY ADDITIONS THE COMPANY IS PROPOSING IN THIS PLAN.

A. Table JWI-D-1 below summarizes the Company's proposed capacity additions in this Plan, which Company witness Ms. Klemm discusses in more detail.

Table JWI-D-1: Program Offerings by Capacity MW_{AC}[7]

	Offering	2022	2023	2024	2024	Total RE Plan
Net Metering Only	Net Metering Only	47	47	47	47	188
Solar*Rewards	Commercial & Industrial	15	15	15	15	60
	Large RFP	15	15	15	15	60
	Residential Income Qualified On-site Solar (CEO)	0.25	0.25	0.25	0.25	1
	Solar*Rewards Battery Connect	4.3	4.3	4.3	4.3	17.2
Off-site	Off-Site Solar	41	41	0	0	82
Solar*Rewards Community	CSG – Request for Proposal (RFP)	35	35	35	35	140
	CSG – Standard Offer	30	30	30	30	120
	Xcel Income Qualified CSGs	10	10	10	10	40
Total Distributed Renewable Programs		**198**	**198**	**157**	**157**	**708**
Renewable*Connect		300				300
Total Customer Renewable Programs						**1,008**

Q. DOES THE COMPANY HAVE ANY PLANS TO ACQUIRE COMPANY-OWNED ELIGIBLE ENERGY RESOURCES DURING 2022-2025?

A. Yes. The Company is proposing to add a total of 40 MW of Company-owned CSGs serving IQ customers as part of its 2022-25 RE Plan, as described in Section V(B) of my Direct Testimony and in Ms. Klemm's Direct Testimony.

[7] Numbers in this table may not sum due to rounding. The "Net Metering Only" category is not an incentive-funded program but is provided for reference.

Q. WHAT DOES THE COMPANY PROPOSE FOR TIMING OF APPROVAL OF THE 2022-25 RE PLAN?

A. As I discuss throughout my Direct Testimony and particularly in Section III(B), 2021 marked an extremely active legislative session, which resulted in several proposed and enacted bills that directly and indirectly impact the Company's RE compliance and associated programming. The effects of these bills, coupled with several significant programming proposals that the Company is making (e.g., the Solar*Rewards® Battery Connect proposal), delayed the Company's 2022-25 RE Plan filing. Given that the Company does not anticipate a final Commission decision in this Proceeding until the third quarter of 2022, on December 10, 2021, Public Service filed an Unopposed Motion to Extend its 2020-2021 RE Plan and Waiver of Response Time in Proceeding No. 19A-0369E (the 2020-21 RE Plan Proceeding) ("Motion for Extension"). If approved, the current 2020-21 RE Plan would be extended until a final decision is issued in this Proceeding, which establishes the commencement date of this 2022-25 RE Plan. Ms. Klemm addresses how the Company's proposed 2022 capacity levels in this Proceeding are impacted by the Motion for Extension. Overall, the Company supports this approach as it will provide certainty and continuity for customers and other interested parties while this plan is litigated.

Q. IS THE COMPANY FILING A COPY OF ITS 2022-25 RE PLAN AS PART OF ITS APPLICATION IN THIS PROCEEDING?

A. Yes. The Company's 2022-25 RE Plan is attached to my Direct Testimony, incorporated by reference into the Application, in three Volumes. Attachment JWI-

1 is Volume 1, which is the Plan itself; Attachment JWI-2 is Volume 2, which
2 contains a series of tables supporting the Plan; and Attachment JWI-3 is Volume
3 3, which contains the Company's standard contracts and other documents related
4 to its Requests for Proposal ("RFPs") under the Plan.

5 **Q. WHAT SECTIONS OF THE 2022-25 RE PLAN DO YOU SPONSOR?**

6 A. I sponsor the following Sections of Volume 1 (Attachment JWI-1) of the Plan:

7 • Section 1 is the Executive Summary.

8 • Section 2 briefly summarizes the various sections of the Plan and lists the
9 filing requirements contained in Rule 3657 that are addressed by each
10 section.

11 • Section 5 describes the Company's planned acquisition of renewable
12 energy resources for all categories of renewable energy, which is
13 responsive to Rule 3657(b)(VII), (VIII), (X), (XI), (XII), (XIII), and (XIV). I
14 share sponsorship of this Section with Ms. Klemm and Mr. Trowbridge.

15 • Section 6 discusses the Company's proposals for other customer choice
16 products not addressed in Section 5, specifically Renewable*Connect,
17 Windsource, and Recycled Energy. I share sponsorship of this Section with
18 Ms. Klemm and Mr. Cowan.

19 • Section 8 describes the cost recovery and deferred accounting mechanisms
20 associated with implementing the Plan, which is responsive to Rule
21 3657(b)(VI). I share sponsorship of this Section with Mr. Trowbridge.

22 • Section 9 describes the Company's anticipated net metering ("NEM")
23 requirements consistent with Colorado law and Commission Rules.
24 Currently, the Company offers customers with customer-sited renewable
25 resources the ability to offset their energy charge commensurate with the
26 kilowatt-hours ("kWh") of energy produced by their on-site renewable
27 resource. Section 9 is responsive to Rule 3657(b)(XVI).

28 • Section 10 states that Public Service is not proposing any changes to the
29 Commission's interconnection rules or requirements at this time as these
30 rules (Rules 3850-3859) were recently revised in Proceeding 19R-0654E.

31 • Section 11 is the Conclusion. It lists the approvals requested by the
32 Company in our 2022-25 RE Plan. This Section is responsive to Rule
33 3657(c).

I summarize the Company witnesses sponsoring other portions of Volumes I, II, and III in the next section of my Direct Testimony.

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

A. Yes. In addition to the sections of Attachment JWI-1 I sponsor as discussed above, I am also sponsoring Attachment JWI-4, which is a table outlining compliance obligations and actions stemming from the Company's previous 2020-21 RE Plan.

II. WITNESS INTRODUCTIONS

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

A. In this section of my Direct Testimony, I provide a summary of the other Company witnesses also submitting Direct Testimony in this proceeding, and briefly discuss the various topics they address, including how the various components of the 2022-25 RE Plan comply with the Commission's Rules and past decisions regarding RE Plans.

Q. PLEASE INTRODUCE THE COMPANY WITNESSES AND EXPLAIN HOW THEIR TESTIMONY MEETS THE FILING REQUIREMENTS OF RULE 3657.

A. The following witnesses are providing testimony in support of the Company's Application:

Table JWI-D-2: Introduction of Witnesses

Witness	Summary of Testimony	Witness Sponsorship of Attachments JWI-1 – JWI-3
Jack W. Ihle Director, Regulatory and Strategic Analysis	I present the overview of the Company's 2022-25 RE Plan, and provide legislative and regulatory background, the current state of the Company's renewable programs, and an overview of cost recovery. I also discuss various other policy issues related to the Plan and present the Company's requested approvals. Attached to my Direct Testimony are Attachments JWI-1 through JWI-3 which comprise the Company's 2022-25 RE Plan.	JWI-1: Sections 1, 2, 9, 10, and 11; portions of Sections 5, 6, and 8. Sections 9, 10, and 11 are responsive to Rules 3657(b)(X), 3657(b)(XVI), 3657(b)(XVII), and 3657(c).
Kerry R. Klemm	Ms. Klemm presents the Company's customer choice Renewable Energy ("RE") options	JWI-1: Portions of Section 5 and 6. These Sections are responsive

Witness	Summary of Testimony	Witness Sponsorship of Attachments JWI-1 – JWI-3
Manager, Renewable Choice Programs	under its Solar*Rewards, Solar*Rewards Community®, and Recycled Energy programs, including proposed program capacities and incentive levels. Ms. Klemm also introduces the new Solar*Rewards Battery Connect and off-site solar customer DER programs.	to Rule 3657(b)(VII), (VIII), (X), (XI), (XII), (XIII), (XIV), and (XVII). All of JWI-3 with the exception of two contracts sponsored by Mr. Cowan. This attachment provides the Company's standard contracts and RFP documents as required by Rule 3657(b)(X) and (XVII).
Alexander G. Trowbridge Pricing Consultant	Mr. Trowbridge provides the framework for measuring the retail rate impact to customers as it relates to the Company's proposed 2022-25 RE Plan. He also summarizes existing modeling practices and assumptions.	JWI-1: Section 7 for the projected retail rate impacts and the information required by Rule 3661(h)(V); portions of Sections 5 and 8. JWI-2: Tables 7-1 through 7-3. Section 7 (JWI-1) and Tables 7-1 through 7-3 (JWI-2) are responsive to Rule 3657(b)(I), (II), (III), (VI), (VII), and (IX). Section 8 is responsive to Rule 3657(b)(VI).
Tara Fowler Director, Purchased Power	Ms. Fowler describes the Company's estimates of RECs needed to meet the RES, REC tracking methods, and projected REC transfers and retirements.	JWI-1: Section 4. JWI-2: Tables 4-1 through 4-5. Section 4 (JWI-1) and Tables 4-1 through 4-5 (JWI-2) are responsive to

Witness	Summary of Testimony	Witness Sponsorship of Attachments JWI-1 – JWI-3
		Rule 3657(b)(V), (VII), and (XV).
John M. Goodenough Manager, Energy Forecasting	Mr. Goodenough describes the Retail Energy Forecast impacting the Company's compliance obligations. Mr. Goodenough presents the Company's actual and forecasted sales from 2021 through 2031, which reflect the RES compliance requirements under Rules 3654(a)(II) and 3655(a)(III) as presented in Attachment JWI-2, Table 4-1.	JWI-1: Section 3, which is responsive to Rule 3657(b)(IV).
R. Neil Cowan Regulatory Policy Specialist, Public Service	Mr. Cowan discusses the Company's redesigned Renewable*Connect offering under this Plan, which includes bringing together four separate renewable programs (including Windsource) under an expanded Renewable*Connect brand.	JWI-1: Portions of Section 6. JWI-3: Two Renewable*Connect agreements.

Q. IS THE COMPANY SEEKING ANY RULE WAIVERS OR VARIANCES AS PART OF ITS FILING?

A. Yes. The Company is seeking the following waivers and variances needed to implement the 2022-25 RE Plan, as further discussed in its concurrently-filed Motion for Waivers and Variances:

- A waiver of Rule 3657(a) to allow the Company to file for approval of this RE Plan separately from (rather than concurrent with) an ERP, consistent with the relief granted in the Company's 2020-21 RE Plan;

- A variance from Rule 3615(a)(III), which limits PPAs for generation capacity/energy not included in an approved resource plan prior to acquisition to no more than two years or 30 MW of capacity. The Company seeks to enter into a PPA (or PPAs) for up to 300 MW of solar resources

for our Renewable*Connect 2.0 offering at a term of approximately 15 years;

- A waiver of Rule 3661(d) to allow the Company to use up to 15 percent of RESA collections to cover administrative costs. This will provide the necessary funding and flexibility for the Company to run its RE program offerings, particularly in light of the recent reduction to the RESA surcharge coupled with the expansion and increased complexity of our RE program offerings;

- Variances from Rules 3652(ff), 3664(a), and 3878(b), and related Electric Tariffs, to allow the Company to size retail renewable DG to supply up to 200 percent (rather than 120 percent) of a net metering customer's or CSG subscriber's reasonably expected average annual electricity consumption at all properties owned or leased by the customer within the Company's service territory, consistent with Senate Bill 21-261;

- To the extent necessary, a partial waiver of paragraph 21 of Decision No. C20-0700 in Proceeding No. 20AL-0191E, which in part directed the Company to file an Advice Letter triggering a holistic examination of the RESA should it propose further extension of the RESA after December 31, 2022; and,

- Any other waivers or variances deemed necessary to carry out the Company's proposals in this Proceeding and the decision points encompassed in the Commission's final decision in this Proceeding.

The Company also preemptively requests any additional waivers or variances not specifically mentioned in this list that may be needed to implement its proposed and/or ultimately approved RE Plan. The above-listed specific requests are discussed in more detail in the Motion for Waivers and Variances being filed contemporaneously filed with the Company's Application.

III. LEGISLATIVE AND REGULATORY BACKGROUND

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

A. In this section of my Direct Testimony, I provide a history of the implementation of the RES in Colorado and discuss recent legislative and regulatory developments as they pertain to the Company's 2022-25 RE Plan presented in this proceeding. I also address various compliance obligations stemming from the Company's last RE Plan approved in Proceeding No. 19A-0369E and how this Plan complies with each of those requirements.

A. Legislative Background

Q. PLEASE PROVIDE AN OVERVIEW OF THE LEGISLATIVE HISTORY BEHIND THE RES AND THE COMPANY'S RE PLAN FILINGS.

A. In 2004, the citizens of Colorado approved a RES through Ballot Amendment 37, which required certain electric utilities to generate, or cause to be generated, 10 percent of their energy from renewable energy resources by 2020, with lower intermediate standards beginning in 2007. In 2007, the General Assembly expanded the RES to 20 percent renewable energy by the year 2020 under House Bill 07-1281, which kept most of the original framework of Amendment 37 but increased the amount that could be charged to customers to acquire renewable energy from one percent to two percent of the customer's total bill.

Further changes to the RES were enacted through the General Assembly's passage of House Bill 10-1001 ("HB 10-1001") in 2010. The passage of HB 10-1001 resulted in a 30 percent RES requirement by 2020. Another significant

change brought about through HB 10-1001 was the elimination of a solar-specific RES component. The solar-specific RES was replaced with a higher-level DG standard. Beginning in 2020, HB 10-1001 requires investor-owned qualified retail utilities ("QRUs") to acquire DG equal to 3 percent of their retail sales.

There were two types of DG created by HB 10-1001: (1) retail distributed generation ("Retail DG"), defined as a renewable energy resource that is designed primarily to provide electric energy to serve the customer's load, which is located on the site of a customer's facilities and interconnected on the customer's side of the utility meter; and (2) wholesale distributed generation ("Wholesale DG"), defined as a renewable energy resource in Colorado with a nameplate rating of 30 MW or less that does not qualify as Retail DG. At least one-half of the DG standard must be met with Retail DG. Throughout this Plan, the Company refers to the various mandates of the RES as "Wholesale DG", "Retail DG", and "Non-DG" to ensure that the Company meets the total RES and the minimum requirements in each category.

In 2010, House Bill 10-1342 established what are commonly termed "community solar gardens" (or "CSGs"). Customers may participate in these community solar projects by acquiring a share of a larger facility for purposes of receiving a dollar credit on their electric bills commensurate with their share of the solar garden generation that they acquired. This bill directed the Commission to establish the minimum and maximum capacity levels.

In 2013, Senate Bill 13-252 was enacted to expand the RES compliance to cooperative electric associations and expand the definition of Eligible Energy

Resources to include resources using coal mine methane and synthetic gas produced by pyrolysis of municipal solid waste. House Bill 15-1284 ("HB 15-1284"), enacted in 2015, expanded the geographic reach of CSGs by allowing CSGs to offer subscriptions to customers located in the same county or to customers in adjacent counties.

In 2019, the passage of House Bill 19-1003 ("HB 19-1003") impacted CSGs in several ways. HB 19-1003 increased the maximum CSG system size from 2 MW to 5 MW, or up to 10 MW after July 1, 2023, at the Commission's discretion. In addition, it removed the requirement that CSGs obtain subscribers from the county where they are located or an adjacent county, allowing CSGs to offer subscriptions anywhere in the host utility's service territory. Further, HB 19-1003 required the Commission to initiate or consider in an ongoing proceeding by January 30, 2020, whether the subscriber or the Company will receive the Renewable Energy Credit ("REC") generated by a CSG. Proceeding No. 19R-0608E, the CSG rulemaking, allowed CSGs up to 10 MW after July 1, 2023, and allowed/required utilities to offer customers the ability to receive the REC from a CSG.

2019 also saw the passage of Senate Bill 19-236 ("SB 19-236"), a bill which covered several issues affecting the Commission and the electric utility industry in Colorado. Notably, SB 19-236 required electric public utilities to consider the cost of carbon "when determining the cost, benefit or net present value" of plans submitted for resource planning, RES planning, electric Demand-Side Management ("DSM") planning, and beneficial electrification plans. The cost of

carbon provisions specify the use of the federal government's most recent social cost of carbon. This provision on the cost of carbon does not prohibit the Commission or the Company from also considering other costs for carbon emissions.

Q. PLEASE SUMMARIZE THE GENERATION THRESHOLDS THE COMPANY MUST MEET THROUGH ITS PLAN UNDER THE RES REQUIREMENTS ESTABLISHED BY THE GENERAL ASSEMBLY.

A. Each year of the Company's 2022-25 RE Plan must meet the maximum (post-2020) statutory thresholds required under the RES for the three distinct types of Eligible Energy Resources, as set forth in Table JWI-D-3 below:

Table JWI-D-3: RES Requirements

Period	Eligible Energy (Overall)	DG	Retail DG
2015-2016	20% of retail sales	1.75% of retail sales	At least ½ of DG
2017-2019	20% of retail sales	2% of retail sales	At least ½ of DG
2020 and beyond	30% of retail sales	3% of retail sales	At least ½ of DG

Q. HAS THE COMPANY HISTORICALLY COMPLIED WITH THE RES?

A. Yes. Since the RES requirements went into effect, the Company has consistently presented RE Plans that have enabled it to meet or exceed those requirements. Public Service has also filed with the Commission annual compliance reports under Rule 3662, demonstrating the Company's continued compliance with the RES.

Q. WILL PUBLIC SERVICE BE IN A POSITION TO MEET OR EXCEED THE RES FOR COMPLIANCE YEARS 2022 THROUGH 2025?

A. Yes. This is discussed in more detail later in my testimony.

B. <u>2021 Legislation</u>

Q. WAS THERE ANY NEW LEGISLATION PASSED IN 2021 THAT IMPACTS THIS 2022-25 RE PLAN?

A. Yes. Four bills, Senate Bill 21-261 ("SB 21-261"), Senate Bill 21-272 ("SB 21-272"), House Bill 21-1266 ("HB 21-1266"), and House Bill 21-1238 ("HB 21-1238"), were passed during the 2021 Legislative Session that impact RES requirements or programming during the 2022-2025 period covered by this Plan. Table JWI-D-4 below briefly summarizes the key provisions of these bills, as well as whether each key provision affects the 2022-25 RE Plan.

Table JWI-D-4

Bill	Change/Requirement	RE Plan Impact	Supporting Witness
SB 21-261	Off-site solar installations	Yes – proposed in Plan	Ihle, Klemm
	200% system size limit on DERs	Yes – proposed in Plan	Klemm
	Standard Offer System Sizing – 1 MW	Yes – proposed in Plan	Klemm
	Energy Storage RESA eligibility	Yes – proposed in Plan	Klemm
	Multi-Unit Buildings and Tenants	No - rulemaking required	N/A
	Meter Collar Adapter	Process implemented in Dec. 2021	Ihle, Klemm
	Excess Billing Credits/Donations for IQ customer programs	Yes – proposed in Plan	Klemm
SB 21-272	40% of Expenditures/Investment to IQ and DICs	Yes – proposed in Plan	Ihle, Klemm
HB 21-1266	RECs and clean energy requirements	Yes	Ihle
HB 21-1238	Increase Social Cost of Carbon	Yes – avoided carbon benefit calculation adjusted	Ihle

Q. PLEASE DESCRIBE SB 21-261 AND HOW IT AFFECTS THE RE PLAN.

A. SB 21-261, "Public Utilities Commission Encourage Renewable Energy Generation," includes several measures that affect renewable programming, some of which directly affect this RE Plan. These measures include a wholly new off-site solar program that could become a major new part of the Company's renewable programs, an increase in the statutory limit on the size of distributed solar systems from 120 percent to 200 percent, an increase in the size of on-site

distributed solar standard offer requirements from 500 kW to 1 MW, changes to the eligibility of the statutory cost recovery provisions allowing battery storage charged by renewable energy to be eligible for RESA funding, new provisions for multi-unit building programs, changes to allow the use of a "meter collar" for onsite distributed solar installations, and a provision creating the ability to donate excess CSG bill credits toward IQ customer programs.

Q. PLEASE DESCRIBE THE OFF-SITE SOLAR PROGRAM SET FORTH IN SB 21-261.

A. This new program may be the most significant change under SB 21-261. Described in detail at §§ 40-2-124(e)(I)(C), 40-2-124(e)(I)(E), 40-2-124(j)(VI)(A), and 40-2-124(j)(VI)(B), C.R.S., the statute directs the utility to set up a new class of policy-supported DG: off-site solar. The statutory changes require qualifying retail utilities to offer a standard offer to allow customers to build and interconnect a solar facility at one property and use the generation to bill credits applicable to another property or properties. For the 2022 and 2023 compliance years, the statute also requires the utility to "reserve" capacity equal to "one-quarter of one percent of the utility's annual retail sales from the immediately preceding year," which the Company calculates to be approximately 41 MW in 2022 and 2023. For RE Plan purposes, the 41 MW was calculated as follows:[8]

[8] The Company will be required to state the final capacity numbers based upon the prior year's retail sales. The Company would expect to issue the final capacity amount once retail sales numbers are finalized from the prior year, likely by the end of January 2022 and 2023. Any unallocated or cancelled capacity would carry forward into the remaining years of the Plan.

Table JWI-D-5

Input	Value	Source
2020 Electric Retail Sales (MWh)	28,844,533	2020 RES Report
One-quarter of one percent	72,111.33	§ 40-2-124(e)(I)(E), C.R.S.
Capacity Factor	0.20	Operational CSG Capacity Factor
Capacity Conversion (MW)	**41**	

After 2023, the bill grants discretion to the Commission on program capacity. Section 40-2-124(e)(I)(C), C.R.S. provides for a bill credit mechanism that is conceptually similar to the CSG program. Company witness Mr. Trowbridge addresses the Company's proposed bill credit for its new off-site programming. Sections 40-2-124(j)(VI)(A) and 40-2-124(j)(VI)(C), C.R.S. limit these installations to no more than 500 kW each, and no more than 300 kW for a multi-meter installation. The statute also directs that customers be allowed to retain or sell the REC to the utility.

Q. PLEASE DESCRIBE THE INCREASE IN CAPACITY LIMITS FOR ON-SITE DISTRIBUTED SOLAR SYSTEMS UNDER SB 21-261.

A. Section 40-2-124(1)(a)(VIII), C.R.S. now modifies the terms of retail DG in two ways. The first is to broaden the definition of retail DG to include the off-site solar program I described above. The second is to increase the maximum size for retail DG from 120 percent to 200 percent of the "reasonably expected average annual total consumption of electricity." Aside from the numerical increase, the addition of the phrase "reasonably expected" into statute by SB 21-261 creates some ambiguity in terms of the baseline to set the percentage against, as the Company

has historically established this baseline from actual usage during a recent historical year.

The Company has already begun to implement this statutory change by providing customers with behind the meter Retail DG systems the ability to allow system sizing up to 200 percent of reasonably expected average annual load. The Company would note that this statutory change may benefit from a Commission rulemaking to establish the 200 percent limit in rules and to establish a generally applicable definition of "reasonably expected."[9] The Company does not, however, believe that a rulemaking is a prerequisite to implementing this statutory change.

Q. PLEASE DESCRIBE THE CAPACITY INCREASE IN STANDARD OFFER REQUIREMENTS FOR ON-SITE DISTRIBUTED SOLAR SYSTEMS UNDER SB 21-261.

A. SB 21-261 modifies § 40-2-124(1)(e)(III), C.R.S. to expand the Standard Offer program applicability to systems up to one MW in size, from a previous 500 kW. Following from this, the Company has expanded its Solar*Rewards Medium Standard Offer program to cover onsite systems up to one MW. Company witness Ms. Klemm describes the Company's planned changes to the Solar*Rewards Medium program in more detail in her Direct Testimony.

[9] The Company observes that a fairly small fraction of onsite solar customers today seek systems over 100 percent, and that the 200 percent limit will allow significantly more flexibility for customers who may anticipate buying an EV or adopting electrification for water or building heating.

Q. PLEASE DESCRIBE THE NEW MULTI-UNIT OR MULTI-TENANT BUILDING PROVISIONS UNDER SB 21-261.

A. At § 40-1-103.5(3)(a), C.R.S., SB 21-261 requires the Commission to adopt or amend rules to "enable landlords of a multi-unit buildings and tenants in multi-unit buildings to share in the production from a net metered retail distributed generation installation." The statute contemplates that this change first requires Commission action through new or amended rules. The Company would further note that executing this change will require complex changes to our billing system, as net metering and solar incentive payments currently are set up to only occur on a single customer/premise level and for one customer rate class. The details of allocating production to various tenants, potentially of different rate classes and clarifying incentive eligibility and distribution would also benefit from clarification via rulemaking before the Company and building owners execute the necessary systems changes on their ends. For these reasons and in the interests of efficiency, the Company intends to begin the necessary Information Technology work to enable these functions after clarifying rules have been developed and become final. Public Service estimates it will need up to six months to complete and test its billing system and application portal changes prior to launch and will also need to communicate and train interested customers and solar industry representatives in advance of launch, which could take additional time beyond the six months.

Q. PLEASE DESCRIBE THE METER COLLAR ADAPTER PROVISIONS OF SB 21-261.

A. SB 21-261 creates at § 40-2-124(1)(e)(I)(A.5), C.R.S. a requirement for the utility to allow the use of a "meter collar," a particular type of onsite solar interconnection made at the customer meter. This provision requires the utility to create a process within 180 days of the bill's effective date to approve meter collars that meet certain safety requirements. Public Service implemented this process on December 17th through dissemination of an updated copy of its "Xcel Energy Standard for Electric Installation Use (Blue Book)."[10] The Company will also formalize this process through an anticipated filing with the Commission in January of 2022.

Q. PLEASE DESCRIBE THE EXCESS BILL CREDIT DONATION PROVISIONS OF SB 21-261.

A. SB 21-261 modifies § 40-2-124(1)(e)(I)(B), C.R.S., to allow the customer or the utility to donate excess net metering bill credits to a third-party administrator to provide low-income energy assistance and bill reductions. Ms. Klemm explains this process in detail in her Direct Testimony, including how this interacts with Rule 3881.

[10] The Xcel Energy Standard for Electric Installation Use is available at https://co.my.xcelenergy.com/s/renewable/developers/interconnection.

Q. PLEASE DESCRIBE SB 21-261'S PROVISION THAT DIRECTS THE UTILITY TO PROVIDE AN OPTION FOR OFF-SITE CUSTOMERS TO SELL RECS TO THE COMPANY.

A. As described by Company witness Ms. Klemm, the Company's proposed Off-Site program is functionally similar to the Company's On-Site Net Metering Only option. By default, participating customers will retain the RECs associated with their installation. However, SB 21-261 includes a provision which allows off-site customers to sell their RECs to the Company. For customers that wish to sell their RECs to Public Service, the Company may purchase these RECs at a value that corresponds to the Company's compliance obligations, and as indicated later in my testimony, the Company already has an adequate number of RECs to meet these obligations. Based upon today's projections, the Company does not and will not need to purchase any of these RECs from off-site generating customers, and thus the Company is not currently offering a value to pay for these RECs.

Q. IS THE COMPANY PLANNING TO IMPLEMENT CHANGES WITH REGARDS TO CUSTOMER RETENTION OF RECS FOR CSGS?

A. Yes. Rule 3882(a)(III), which has been newly promulgated since the Company's last RE Plan was approved, requires the Company to propose at least one standard offer that will "enable CSG subscribers to retain the RECs generated by the CSG. The standard offer may result in differing compensation that would enable the CSG subscribers to retain the RECs generated by the CSG." Similarly, Rule 3882(c) allows that for competitive solicitations, the CSG owner will "state in its proposed contract with the utility whether the RECs will be retained by CSG

subscribers or ownership of the RECs will be transferred to the utility. Compensation may differ that would enable the CSG subscribers to keep the RECs generated by the CSG."

To date, CSGs have sold all energy and RECs to the Company as part of a single transaction. Rule 3882(a), however, recognizes that in circumstances where a CSG customer is permitted to retain the RECs rather than the developer, an energy-only transaction will inherently occur. In turn, the Company believes it is appropriate to establish "differing compensation" levels for transactions which include both the energy and REC sales to the Company versus transactions which only include an energy sale to the Company (where the CSG retains the REC). The Company will implement this through a REC adjustment provision. To implement the flexibility and choice for CSGs as directed by Rule 3882, the Company proposes to set the REC price for CSG purposes equal to the then-current price for customer purchases of RECs from renewable projects in the Company's service territory under the Renewable*Connect Month-to-Month program (currently known as Windsouce®). The Company intends for this to result in a consistent difference in compensation between CSGs that retain RECs for their subscribers and CSGs that sell both the energy and REC to the Company.

Q. ARE THERE ANY OTHER CHANGES REGARDING RECS THAT WARRANT DISCUSSION?

A. Yes, the Company is no longer selling excess compliance RECs to customers outside of Colorado. This was an internal Company policy decision not driven by regulation or statute which became effective July 1, 2021. The Company

discussed this corporate policy change in more detail in its 2020 Sustainability Report.[11]

Q. PLEASE DESCRIBE SB 21-272 AND HOW IT AFFECTS THE RE PLAN.

A. SB 21-272, known as "Measures to Modernize the Public Utilities Commission," made several changes to the operations of the Commission. The provision that most affects this RE Plan is found in a modification to § 40-2-124(1)(g), C.R.S., the "Retail rate impact rule" of the Colorado RES. The provision, at § 40-2-124(1)(g)(I)(D), C.R.S., reads as follows:

> TO ADDRESS HISTORICAL EQUITY ISSUES CONCERNING ACCESS BY LOW-INCOME CUSTOMERS TO RENEWABLE ENERGY AND RETAIL DISTRIBUTED GENERATION PROGRAMS AND PRIORITIZE INVESTMENT AND DIRECT BENEFITS FOR DISPROPORTIONATELY IMPACTED COMMUNITIES, THE COMMISSION SHALL REQUIRE QUALIFYING RETAIL UTILITIES TO PLAN THEIR EXPENDITURES SO THAT, BEFORE REACHING THE LIMITS IMPOSED BY THIS SUBSECTION (1)(g), THEY WILL PRIORITIZE RENEWABLE ENERGY INVESTMENT AND PROGRAMS FOR LOW-INCOME CUSTOMERS AND DISPROPORTIONATELY IMPACTED COMMUNITIES. BEGINNING ON JANUARY 1, 2022, AND CONTINUING THROUGH AT LEAST DECEMBER 31, 2028, NOT LESS THAN FORTY PERCENT OF SUCH EXPENDITURES, NOT INCLUDING ANY FUNDS SET ASIDE TO RECOVER THE COST OF CLEAN ENERGY RESOURCES AND DIRECTLY RELATED INTERCONNECTION FACILITIES PURSUANT TO SECTION 40-2-125.5 (4)(a)(VIII), SHALL BE DIRECTED TO PROGRAMS, INCENTIVES, OR OTHER DIRECT INVESTMENTS BENEFITTING LOW-INCOME CUSTOMERS AND DISPROPORTIONATELY IMPACTED COMMUNITIES.

This new provision creates a strong and numerically-expressed focus on programming for low-income/income-qualified (or "IQ") customers and disproportionately impacted communities (or "DICs"). The Company interprets this

[11] Available at https://investors.xcelenergy.com/esg/sustainability-report/default.aspx.

requirement to create a minimum percentage expenditure requirement on its incentive spending for programs that create expenditures under its RE Plan(s).[12] The statute specifically calls out calendar years 2022 through 2028 for this requirement, spanning the entirety of this 2022-25 RE Plan and beyond.

The Company's interpretation of this statute, with its emphasis on planning, applies to new planned program expenditures, such as those now proposed in this Plan; "pre-committed" expenditures generally funded by the RESA are obligated to customers and power producers under existing contracts or program commitments.

Q. PLEASE DESCRIBE THE COMPANY'S COMPLIANCE WITH THESE PROVISIONS OF SB 21-272.

A. Some of the proposals being offered in this RE Plan are designed to achieve or exceed the 40 percent threshold primarily through a combination of adding or adjusting equity-focused allocation of program incentives, as well as the continuation or expansion of expenditures on specific equity programs, such as the Company-owned IQ CSGs and the solar rooftop program administered by the Colorado Energy Office ("CEO") (i.e., the Low-Income Rooftop Solar program, which is now referred to as the Residential IQ On-Site Solar program under this RE Plan). Company witness Ms. KIemm describes the Company's specific programs where the 2022-25 RE Plan is designed to meet and exceed the 40

[12] The Company interprets this provision of SB 21-272 to apply to programs required by § 40-2-124. Programs such as Windsource and Renewable*Connect that are not required by § 40-2-124 do not have this obligation.

percent requirement; in fact, we currently expect to achieve 52 percent on this metric.

Public Service notes some practical limitations with subsection (D)—most notably, that the statute does not acknowledge the procedural lag (based on statutory deadlines for processing applications) associated with bringing forward and litigating Company proposals before the Commission. Notably, SB 21-272 was signed into law on June 10, 2021; thus, even if the Company had submitted its 2022-25 RE Plan the next day (an extreme example for purposes of illustration), the Company would likely not have an approved Plan by the beginning of 2022 due to normal, statutorily based procedural timelines for Applications.

Here, the new RE Plan will not be approved and in effect until well into 2022, with the Company requesting its existing 2020-21 RE Plan be extended until a final 2022-25 RE Plan is approved later in 2022 as explained earlier in my testimony. While achieving greater equity through our renewable energy program offerings has been a focus of the last two RE Plans, the current 2020-21 RE Plan was designed and approved before this new statutory requirement existed. Thus, the combination of the two Plans in effect in 2022 may not achieve the full 40 percent of expenditures in 2022. The Company notes, however, that it is making its best efforts to achieve the new requirement beginning with this Plan and over the full period identified in statute given the reasonable and unavoidable ramp-up that must occur in 2022.

That said, Public Service believes it has sufficiently complied with the statutory language set forth in subsection (D) for two reasons. First, SB 21-272

requires the Company to "*plan*" its expenditures to "prioritize renewable energy investments and programs for low-income customers and disproportionately impacted communities." It goes on to require that beginning on January 1, 2022, "not less than 40 percent of such expenditures…shall be *directed* to programs, incentives, or other direct investments benefitting low-income customers and disproportionately impacted communities." When read in whole with consideration given to both sentences contained in subpart (D), Public Service believes this 2022-25 RE Plan amounts to the Company "planning" and "directing" its expenditures to prioritize and benefit low-income customers and disproportionately impacted communities as required by subpart (D). Second, the compliance timeframe is defined as "beginning on January 1, 2022, and continuing through at least December 31, 2028," thus permitting achievement of the requirement over the period identified. Again, while the Company has developed its Plan to comply with this requirement on an annual basis going forward. In the case of 2022, Public Service believes it has sufficiently complied with the timeframes set forth in SB 21-272.

Q. HOW DOES THE STATUTE DEFINE THE TERMS "LOW-INCOME CUSTOMERS" AND "DISPROPORTIONATELY IMPACTED COMMUNITIES?"

A. SB 21-272 defines "Low Income" as meeting one or more of the following criteria:

> (A) MEDIAN HOUSEHOLD INCOME LESS THAN OR EQUAL TO TWO HUNDRED PERCENT OF THE FEDERAL POVERTY GUIDELINE;
>
> (B) MEDIAN HOUSEHOLD INCOME LESS THAN OR EQUAL TO EIGHTY PERCENT OF AREA MEDIAN INCOME; OR

> (C) QUALIFICATION UNDER INCOME GUIDELINES ADOPTED BY THE DEPARTMENT OF HUMAN SERVICES PURSUANT TO SECTION 40-8.5-105.

The Company has had programming for low-income customers such as the Company-owned CSGs program, the CEO-administered Low-Income Rooftop Solar Program, and the IQ CSG RFP and Standard Offer programs. Generally, the Company has been utilizing the criteria for low-income of at or below 185 percent of the current federal poverty level. This tracks with current Commission Rules, and specifically CSG Rule 3877(f)(I).[13] The term "Disproportionately impacted communities" is, to the Company's knowledge, a new term in this section of statute, and SB 21-272 spelled out a definition at § 40-2-108(3)(d)(II), C.R.S.:

> "DISPROPORTIONATELY IMPACTED COMMUNITY" MEANS A COMMUNITY THAT IS IN A CENSUS BLOCK GROUP, AS DETERMINED IN ACCORDANCE WITH THE MOST RECENT UNITED STATES CENSUS, WHERE THE PROPORTION OF HOUSEHOLDS THAT ARE LOW INCOME IS GREATER THAN FORTY PERCENT, THE PROPORTION OF HOUSEHOLDS THAT IDENTIFY AS MINORITY IS GREATER THAN FORTY PERCENT, OR THE PROPORTION OF HOUSEHOLDS THAT ARE HOUSING COST-BURDENED IS GREATER THAN FORTY PERCENT; OR IS ANY OTHER COMMUNITY AS IDENTIFIED OR APPROVED BY A STATE AGENCY, IF:
>
> (A) THE COMMUNITY HAS A HISTORY OF ENVIRONMENTAL RACISM PERPETUATED THROUGH REDLINING, ANTI-INDIGENOUS, ANTI-IMMIGRANT, ANTI-HISPANIC, OR ANTI-BLACK LAWS; OR
>
> (B) THE COMMUNITY IS ONE WHERE MULTIPLE FACTORS, INCLUDING SOCIOECONOMIC STRESSORS, DISPROPORTIONATE ENVIRONMENTAL BURDENS, VULNERABILITY TO ENVIRONMENTAL DEGRADATION, AND LACK OF PUBLIC PARTICIPATION, MAY ACT CUMULATIVELY TO AFFECT HEALTH AND THE ENVIRONMENT AND CONTRIBUTE TO PERSISTENT DISPARITIES.

[13] CEO's rooftop program that we are calling "Solar*Rewards Income Qualified On-Site Solar" program utilizes the 200 percent metric.

Q. DOES SB 21-272 AFFECT THE COMPANY'S MANAGEMENT OF RECS?

A. Potentially, yes. SB 21-272 includes provisions affecting RECs at § 40-2-124(1)(d)(II), C.R.S.:

> THE SYSTEM OF TRADABLE RENEWABLE ENERGY CREDITS MUST INCLUDE REQUIREMENTS FOR THE RETIREMENT OF RENEWABLE ENERGY CREDITS TO ENSURE THAT COMPLIANCE WITH THE RENEWABLE ENERGY STANDARD:
>
> (A) IS EFFECTUATED IN A MANNER THAT BENEFITS COLORADO'S CITIES, COUNTIES, AND BUSINESSES;
>
> (B) ENABLES A UTILITY'S CUSTOMERS TO ACCOUNT FOR THE ENVIRONMENTAL BENEFITS OF THE RENEWABLE ENERGY GENERATED TO SERVE THOSE CUSTOMERS AND PURCHASED FOR THOSE CUSTOMERS; AND
>
> (C) IS CONSISTENT WITH TIMELY ATTAINMENT OF THE STATE'S CLEAN ENERGY AND CLIMATE GOALS.

In general, these provisions place new conditions on the trading of RECs, and it is not clear to the Company if these changes will influence current or anticipated REC trading practices. For instance, the condition at (A) above is, in my view, consistent with previous Commission decisions allowing the sale of RECs with a significant proportion of sales margins shared back to customers as passed through the RESA; for example, most recently in Decision No. R21-0033 in Proceeding No. 20A-0226E, which allowed the continuation of REC sales by the Company for the calendar years 2021, 2022, and 2023. The condition at (B) above is something the Company has sought to achieve for its customers, for example by, after consultation with customers, voluntarily proposing and establishing the Certified Renewable Percentage concept in Proceeding No. 19A-0268E.

Xcel Energy, the holding company of Public Service, is going further in this direction, however, by implementing a new internal policy where after July 1, 2021, the Company will not initiate the sale of RECs generated from its portfolio unless it is necessary to avoid penalties in jurisdictions where it is penalized for not selling RECs within their established shelf life or the RECs are transferred to or retained by customers as part of voluntary programs or service arrangements.[14] This is a voluntary policy on the part of the Company and its holding company Xcel Energy that achieves the intent of condition (B) above by maximizing the RECs held and retired for our retail and wholesale customers. Condition (C) above is, the Company believes, a reference to and generally consistent with provisions from SB 19-236 (at § 40-2-125.5(3)(III), C.R.S.) and HB 21-1266 (at § 25-7-1-5(1)(e)(VIII)(H), C.R.S.). The HB 21-1266 provisions are discussed further below. Finally, the Company notes that the phrase "must include requirements for" in this part of SB 21-272 appears to imply future changes to Commission Rules.

Q. PLEASE DESCRIBE HB 21-1266 AND HOW IT AFFECTS THIS RE PLAN.

A. HB 21-1266, "Environmental Justice Disproportionate Impacted Community," creates new environmental justice and equity provisions in Colorado energy policy and new emissions greenhouse gas emissions targets for the oil and gas and manufacturing and industrial sectors. More directly related to renewable energy and this 2022-25 RE Plan, HB 21-1266 includes the following language that helpfully reduces uncertainty associated with REC management, the Company's

[14] Some sales of such RECs will continue through 2023 pursuant to sales contracts established prior to this voluntary policy of Xcel Energy.

achievement of clean energy targets under § 40-2-125.5, C.R.S., and voluntary renewable programs. The provision is at § 25-7-1-5(1)(e)(VIII)(H), C.R.S.:

> IN VERIFYING CLEAN ENERGY PLANS OR A WHOLESALE GENERATION AND TRANSMISSION COOPERATIVE ELECTRIC RESOURCE PLAN SUBMITTED IN ACCORDANCE WITH SUBSECTION (1)(e)(VIII)(I) OF THIS SECTION, THE DIVISION SHALL PREVENT DOUBLE COUNTING OF EMISSION REDUCTIONS AMONG UTILITIES AND SHALL CONSIDER ELECTRICITY GENERATED BY RENEWABLE ENERGY RESOURCES AS HAVING ZERO GREENHOUSE GAS EMISSIONS ONLY IF: THE ELECTRICITY IS ACCOMPANIED BY ANY ASSOCIATED RENEWABLE ENERGY CREDIT, AND THE RENEWABLE ENERGY CREDIT IS RETIRED ON BEHALF OF THE UTILITY'S CUSTOMERS IN THE YEAR GENERATED; OR THE ELECTRICITY IS GENERATED BY RETAIL DISTRIBUTED GENERATION, AS DEFINED IN SECTIONS 40-2-124 (1)(a)(VIII) AND 40-2-127 (2)(b)(I)(A) AND (2)(b)(I)(B) AND THE RETAIL CUSTOMER RETAINS THE RENEWABLE ENERGY CREDIT AS PART OF A VOLUNTARY RENEWABLE ENERGY PROGRAM.

This provision requires that utilities applying clean energy under Clean Energy Plans to the emissions targets of § 40-2-125.5, C.R.S. must have and retire the RECs in the year generated; this is similar to language already codified at § 40-2-125.5, C.R.S., which was enacted in 2019 by SB 19-236. The last part of this provision clarifies that the utility may use clean energy toward compliance with the § 40-2-125.5, C.R.S. targets if that electricity has a REC that is retained by the customer.

This condition can be triggered if the customer is a “net metering only” customer who does not take an incentive from the Company’s Solar*Rewards program, or if the customer participates in the CSG program supporting customer REC retention that is proposed in Ms. Klemm’s Direct Testimony. This new provision reduces the chances that distributed energy on the Company’s system

does not a create a penalty or greater requirement for emissions reduction under § 40-2-125.5, C.R.S. because the Company did not and could not retain and retire the REC for that generation.

Q. DOES HB 21-1238 CHANGE THE SOCIAL COST OF CARBON USED TO CALCULATE THE EMISSIONS BENEFITS OF THIS 2022-25 RE PLAN?

A. Yes. HB 21-1238, by modifying statutory language at 40-3.2-106, increased the social cost of carbon to a level not less than $68 per short ton. The Company has used the increased values in its analysis, as discussed later in my testimony.

C. <u>Recent Regulatory Background</u>

Q. HAVE THERE BEEN ANY REGULATORY DEVELOPMENTS SINCE THE COMPANY'S LAST RE PLAN WAS APPROVED THAT HAVE IMPACTED THE DEVELOPMENT OF THIS 2022-25 RE PLAN?

A. Yes. As the Company noted in its last RE Plan proceeding (Proceeding No. 19A-0369E), the 2020-21 RE Plan was intended to serve as a "bridge" toward this 2022-25 RE Plan, and one of the reasons for this approach was the fact that relevant Commission rulemakings resulting from the busy 2019 legislative session remained ongoing in Proceeding Nos. 19R-0096E, 19R-0608E, and 19R-0654E at the time the 2020-21 RE Plan was approved. These rulemakings have since concluded, with a number of rule changes relevant to the Company's RE Plan requirements.

Notably, within Proceeding No. 19R-0608E, the CSG rulemaking led to the following modifications: (1) the addition of transmission interconnections; (2) an increase in the maximum CSG project capacity from five to 10 MW (after July 1,

2023); (3) allowing for excess credit and unsubscribed energy donations; and (4) providing for customer REC retention.

Q. REGARDING THE COMPANY'S LAST RE PLAN IN PROCEEDING NO. 19A-0369E, DID THE COMMISSION DIRECT THE COMPANY TO TAKE ANY FOLLOW-ON STEPS AS PART OF ITS APPROVAL?

A. Yes. Decision Nos. R20-0099, C20-0289, and C20-0431 approving the Company's 2020-21 RE Plan set forth several requirements applicable this RE Plan filing, as well as a number of follow-on filing and conferral requirements aimed at advancing certain key issues raised over the course of the 2020-21 RE Plan proceeding. An overview of the compliance obligations contained in those decisions, and compliance actions to the Company has taken, is provided in Attachment JWI-4.

Additionally, as required by Rule 3662, the Company filed its annual RES Compliance Report for 2020 on June 1, 2021. In its review of the report filed on August 2, 2021 pursuant to Rule 3663, Staff found that the Company had complied with the 2020 RES requirements and noted that the Company's report had provided additional transparency regarding actual costs to ratepayers resulting from its complying with and exceeding the RES. The Commission agreed with Staff's findings.[15]

[15] Proceeding No. 19A-0369E, Decision No. C21-0567 (mailed Sept. 14, 2021).

Q. DOES THE COMPANY'S 2022-25 RE PLAN MEET THE REQUIREMENTS PREVIOUSLY SET FORTH FOR THE COMPANY'S NEXT RE PLAN IN PROCEEDING NO. 19A-0369E?

A. Yes. As shown in Attachment JWI-4, the Company has incorporated all of the information required by the Commission in the previous 2020-21 RE Plan proceeding.

Q. DID THE STAKEHOLDER PROCESS THAT FOLLOWED THE 2020-21 RE PLAN INFLUENCE THE COMPANY'S PROPOSALS SET FORTH IN THIS RE PLAN?

A. Yes, especially the Company's Solar*Rewards Battery Connect offering in this RE Plan. During deliberations concerning the 2020-21 RE Plan, the Commission signaled for the Company to, "…continue to encourage solar + storage programs be integral to future proceedings and ongoing stakeholder engagement."[16] The subject of solar plus storage continued to be a topic of discussion during various stakeholder meetings, including 2022-25 RE Plan stakeholder meetings.

This activity and the passage of SB 21-261 has further enabled the Company to develop its proposed RESA-supported Solar*Rewards Battery Connect program as part of this RE Plan, where doing so in our last RE Plan proved too difficult given the lack of statutory support. This bill may enable other beneficial storage programs in the future as well, such as a potential future CSG plus storage pilot that I discuss below.

[16] Proceeding No. 19A-0369E, Decision No. C20-0749, at ¶ 27 (mailed Oct. 26, 2020).

Q. APART FROM WHAT WAS REQUIRED IN PROCEEDING NO. 19A-0369E, HAS THE COMPANY ENGAGED WITH STAKEHOLDERS ON ANY OTHER ISSUES LEADING UP TO THIS RE PLAN FILING?

A. Yes, the Company has continued to extensively engage stakeholders on a number of aspects of its RE planning and renewable program offerings. I discuss the Company's stakeholder outreach and engagement in more detail later in my Direct Testimony.

IV. THE RENEWABLE ENERGY LANDSCAPE

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

A. In this section of my Direct Testimony, I discuss the Company's programs dedicated to the provision of renewable energy for all classes of customers, and the basis for certain changes being proposed in this Plan compared to previous RE Plans. I also discuss the alignment between this 2022-25 RE Plan and the Company's current resource planning initiatives.

A. Market Overview

Q. PLEASE PROVIDE AN OVERVIEW OF THE CURRENT STATE OF RENEWABLE CUSTOMER CHOICE PROGRAMS AVAILABLE TO PUBLIC SERVICE CUSTOMERS.

A. Table JWI-D-6 provides a snapshot of the renewable customer choice market as served by programs developed under previous RE Plans, and also through rate or pricing policy as determined by this Commission.

Table JWI-D-6: Customer Participation in Voluntary Renewable Energy Programs[17]

Program	Number of Customers	% Res. Customers	Res. MW	% C&I Customers	C&I MW	Total MW
Windsource	72,906	97%	29.0	3%	10.0	39
Solar*Rewards Small	38,328	88%	156.8	12%	19.2	176.0
Solar*Rewards Medium	1,620	27%	4.8	73%	100.0	104.8
Solar*Rewards Large	41	0%	0.0	100%	38.4	38.4
Net Metering Only Small	28,551	88%	121.6	12%	12.0	133.6
Net Metering Only Medium	73	14%	0.3	86%	5.3	5.6
Net Metering Only Large	2	0%	0.0	100%	1.6	1.6
Solar*Rewards Community	2,740	78%	81.8	22%	23.1	104.9
Renewable*Connect	3,083	78%	6.5	22%	43.5	50
Total	**147,344**		**400.8**		**253**	**654**

Together, more than 147,000 customers, or approximately 10 percent of total retail customers, participate in some form of a renewable customer choice program. These programs attract participation from both residential and non-residential customers, with approximately three-quarters of total program capacity going to residential customers and one-quarter going to commercial and industrial ("C&I") customers. In total, the Company's current renewable choice offerings support approximately 654 MW of renewable energy.

Additionally, the Company provides on-site solar programs for every customer size. Table JWI-D-6 shows that the Windsource, Solar*Rewards Small, and Net Metering Only – Small programs are the largest by customer count, and these serve the residential and small commercial markets. Public Service's Solar*Rewards Community program offers an option for all types of customers,

[17] Through June 30, 2021. Capacities expressed in AC. Solar*Rewards programs are tracked in DC and were converted to AC using 1.2 DC:AC ratio.

whether residential, commercial, or low-income, without a suitable roof, or for those who may not want to own or manage an on-site solar system. For over two decades, Windsource has provided an affordable and flexible option for all types of customers to obtain up to 100 percent of their energy from renewably sourced resources. Renewable*Connect offers a larger-scale option that can be used by any customer, but is particularly attractive to larger corporations or municipal customers who wish to have their utility provider help them to achieve sustainability or renewable energy goals.

Q. GENERALLY SPEAKING, HOW DOES THE 2022-25 RE PLAN BUILD ON WHAT THE COMPANY PRESENTED IN ITS PREVIOUS RE PLAN?

A. First, fundamentally, all of the Company's RE Plans have built upon one another as capacity installed under previous RE Plans and existing programs are generally still online and have grown on a cumulative basis.[18] Thus, the 654 MW of renewable capacity supported by customer choice will be augmented by approximately an additional 708 MW of new renewable capacity under this RE Plan from both distributed and large-scale solar. The Company is proposing to continue offering an incentive program for each customer on-site solar program class (e.g., small, medium, large, etc.) served by every program from the previous RE Plan, and these programs will continue to add to the cumulative capacity totals.

Second, the Company proposes to add new programs. Under the Renewable*Connect brand, the Company is proposing to move renewable choice

[18] This statement assumes a 20-year system life for most types of solar installed under the RE Plans, which were first proposed in the year 2008.

programming into an entirely new sector of our business, the natural gas sector. This product will offer a product with renewable natural gas ("RNG") and carbon offsets that can allow a customer of our gas local distribution company ("LDC") to claim net zero carbon emissions reductions. The Company is also proposing to add new solar plus storage programming, Solar*Rewards Battery Connect, as part of this RE Plan, which will add a new and exciting dimension for solar customers and for enhancing the value of solar energy to the grid. Further, as discussed above in the legislative summary section (Section III), the Colorado General Assembly directed an expansion of renewable choice programming by creating a new off-site solar program aimed at corporate buyers, and by creating a CSG program that allows customers to retain RECs. The 2022-2025 RE Plan proposes both new programs and features consistent with these legislative updates.

Q. PLEASE EXPLAIN HOW THIS RE PLAN SUPPORTS CONTINUED GROWTH OF THE RE MARKET IN COLORADO.

A. This Plan is intended to drive significant investment in new solar and DER capacity in Colorado. This in turn will support direct and indirect jobs and local tax base. The four-year duration of this RE Plan will provide certainty for the solar and DER industry, as well as customers, considering participation in the suite of renewable programming. The increased integration of the planned RE Plan capacity combined with the larger, utility-scale resources proposed in the 2021 ERP & CEP will provide a more robust foundation for the establishment of solar programs, even beyond the term of this 2022-25 RE Plan. Table JWI-D-7 below shows that our

2022-2025 RE Plan will support approximately $3 billion in total DER and voluntary customer renewable program investments in Colorado over its four-year period.

Table JWI-D-7:
Estimated Capital Investment by Program Under the 2022-25 RE Plan

Program	Plan Total ($M)
Net Metering Only	$976
Solar*Rewards Battery Connect	$131
Solar*Rewards Medium	$193
Solar*Rewards Large	$160
Off-Site	$303
Solar*Rewards Community	$800
Renewable*Connect	$413
Total	$2,977

B. Integration of the RE Plan with Company Planning and Operations

Q. HOW DOES THE RE PLAN PLANNING PROCESS INTEGRATE WITH OTHER COMPANY PLANNING PROCESSES LIKE THE 2021 ERP & CEP?

A. The RE Plan integrates with Company planning processes in several ways. First, the distributed solar forecast assumptions set forth in the Company's 2021 ERP & CEP are a key guidepost for the development of capacity amongst the various programs proposed in this RE Plan. In this regard, the proposed RE Plan is more closely aligned to the ongoing 2021 ERP & CEP than any previous RE Plan. Second, the Company is proposing programs and pilots that are intended to provide value to the grid. As these programs evolve over time, the Company expects that there will be the potential for even further integration and alignment with proceedings like the Company's next ERP and upcoming Distribution System Planning ("DSP") filing.

Q. WHAT OTHER FACTORS MUST THE COMPANY CONSIDER GIVEN THE INTERACTION OF DER AND UTILITY-SCALE RESOURCES?

A. Serving customer loads in a safe, reliable, and cost-effective manner requires that renewable DERs and utility-scale generation resources work together. The Company is increasingly relying on renewable energy resources to serve load. DERs, as modeled in the Company's 2021 ERP & CEP forecast, will comprise a substantial amount of generation capacity by 2030.

Q. ARE THERE ATTRIBUTES OF DERS THAT THE COMPANY MUST CONSIDER WHEN PLANNING ITS SYSTEM?

A. Yes. Currently, many types of DERs are compensated at the same rate regardless of when and where these resources inject energy into the system. Effectively, there are no performance requirements for DERs compared to the performance obligations and accountability required for utility-scale generation resources. At low DER penetration levels, the planning and operational challenges created by these dynamics are modest. However, in a mature DER market, these impacts can be material.

Q. WHAT CHALLENGES DOES THIS PRESENT WHEN PLANNING AND OPERATING THE COMPANY'S ELECTRIC SYSTEM?

A. At a high level, as more non-dispatchable renewable energy is added to the system over time, the less valuable that energy becomes from a capacity and system reliability perspective. This is true for both utility-scale resources as well as DERs. This concept, referred to as Effective Load Carrying Capability ("ELCC"), is described in detail in the Direct Testimony of Company witness Kent L. Scholl in

Proceeding No. 21A-0141E. However, I note that while ELCC values are used to determine whether a particular portfolio of resources can be expected to reliably meet forecasted load in the ERP process, ELCC has historically not been considered when developing RE programs, performance incentives, and bill credit amounts.

Q. PLEASE EXPLAIN HOW THE COMPANY IS BEGINNING TO ADDRESS THESE CHALLENGES WITHIN THIS PLAN.

A. As I noted earlier in my testimony, providing grid value is one of the core principles that has guided the Company in developing the proposed programs within this RE Plan. For the first time in the history of the Company's RE Plan filings, the Company has designed a customer program to specifically target grid value through the use of paired solar and battery energy storage for residential and small commercial customers (Solar*Rewards Battery Connect) in addition to proposing a pilot intended to create firm capacity from battery energy storage systems ("BESS") paired with CSGs. Programs such as these will become increasingly necessary as the Company continues to add more renewable energy to its system.

Q. PLEASE EXPLAIN HOW THE SOLAR*REWARDS BATTERY CONNECT PROGRAM WILL PROVIDE VALUE TO THE GRID.

A. The Company's proposed Solar*Rewards Battery Connect program will build upon the Company's existing DSM Battery Connect pilot, which allows the Company to directly dispatch customer-owned batteries (through vendor software control platforms) to reduce coincident system demand. Importantly, because this program is incentivized through the RESA, it will require that the batteries are

charged by 100 percent renewable energy.[19] A more detailed explanation of the structure of the program is provided in Company witness Ms. Klemm's Direct Testimony.

Q. PLEASE EXPLAIN THE CSG BATTERY ENERGY STORAGE PILOT THE COMPANY IS CONTEMPLATING.

A. The Company is also contemplating development of a pilot, which would seek to deploy 10 MW of DC-coupled BESS paired with CSGs. The Company plans to develop a payment structure which would compensate the grid value provided by the battery. Unlike the residential battery program, the Company would expect developers or operators to be capable of self-dispatching their batteries to meet performance requirements like those that we require for bulk-scale resources.

While the Company is not requesting specific approval of the pilot at this time, the purpose here is to signal the Company's intent and to preview the concept with the Commission and parties so that it might streamline future approval.

Q. PLEASE EXPLAIN HOW A CSG BATTERY ENERGY STORAGE PILOT WOULD PROVIDE VALUE TO THE GRID.

A. As noted earlier in my Direct Testimony, distributed solar, and CSGs specifically, will make up an increasing amount of generation capacity on the Company's system through 2030 and beyond. However, the value of that solar energy will decline over time as more solar capacity is added to the system and the

[19] SB 21-261 introduces the term "Renewable Energy Storage" as a new class of "Eligible Energy Resources." *See* § 40-2-124(1)(a), C.R.S. In order to qualify as Eligible Energy Storage, the storage device must be charged 100 percent by renewable energy. *See* § 40-2-124(1)(a)(VII.5), C.R.S.

Company's load curve, net of renewables ("the net load curve"), will look dramatically different. Firm resources that can be dispatched (either by the Company directly or by operators of assets) will be increasingly necessary to integrate all the intermittent generation on the Company's system. The Company believes that providing a payment to BESS charged by renewable energy could provide system value and help mitigate some of the integration challenges on a system with high amounts of variable renewable energy.

Q. ARE THERE OTHER BENEFITS ASSOCIATED WITH PAIRING BESS WITH CSGS?

A. Yes. Pairing CSGs with storage may increase the amount of renewable kWh provided to the grid. Over time, the Company has observed the ratio of the DC nameplate PV panel capacity to the AC-inverter rating has generally increased, leading to "oversizing" of systems. However, this also means that during peak production hours (i.e., midday when the sun is shining brightest), not all energy generated by the PV panels can be sent to the grid through the inverter. This dynamic leads to "inverter clipping"—effectively lost renewable energy production. However, with a battery, it is possible to recapture some of this clipped energy, therefore increasing the overall production of renewable kWh provided to our system. Additionally, oversizing can help firm up production during shoulder hours where the Company would expect to see solar energy production drop off dramatically. In addition, there may be efficiencies that can be gained from an interconnection cost perspective for co-located solar and storage.

Q. PLEASE PROVIDE ANY OTHER RELEVANT DETAILS ON THIS ANTICIPATED PILOT.

A. As I alluded to above, the Company is still in the preliminary stages of developing this "proof of concept" for the pilot, and we plan to continue to develop this concept through the RE Plan stakeholder process. The Company intends to limit the initial program size to 10 MW of BESS capacity. Part of developing this pilot will include identifying the most appropriate funding mechanism, as it is likely the RESA may not be able to support such a program given existing demands and proposed commitments on available RESA funding.

Q. HOW MAY GRID VALUE PROVIDED BY THE COMPANY'S PLANNED AND PROPOSED STORAGE PROGRAMS EVOLVE OVER TIME?

A. Both the proposed residential battery program and contemplated CSG storage concept identified above are initially focused on providing bulk-scale (e.g., coincident system peak) benefits. Both programs may evolve to encapsulate other value streams in the future. For example, it may be possible to also align these programs (to the extent there is overlap) with distribution system value. Potential alignment will likely require more sophisticated control technology to schedule and coordinate dispatch of assets, likely either through a demand response management system ("DRMS") or distributed energy resource management system ("DERMS"). The Company is already beginning to explore these technologies and software platforms and anticipates issuing a request for information ("RFI") in early 2022. The Company believes it may be logical to

propose these types of technologies and tools in other proceedings that are closely related, such as the Company's forthcoming DSP application in 2022.

C. Budget Approach to 2022-25 RE Plan

Q. PLEASE EXPLAIN WHY THE COMPANY CHOSE A COMPREHENSIVE BUDGET APPROACH TO DEVELOPING THIS RE PLAN.

A. The Company felt it is was important to establish a budget approach for several reasons.

First, previous RE Plans have historically only focused on a given plan or program's impact on the RESA, with little attention paid to the amount of revenue available to support the plan or program. Incremental energy costs for Eligible Energy Resources are debited from the RESA as explained by Company witness Mr. Trowbridge. However, there are also cost impacts to the Electric Commodity Adjustment ("ECA") and costs from net metering which are socialized to all customers. In addition, it is important to manage the RESA in a way that supports both Retail DG along with other resource commitments from the Company's ERPs. In reality, as Mr. Trowbridge explains, the dynamics of these cost impacts are more complex. Given the breadth and magnitude of RE offerings (and associated costs) the Company has in place and is proposing, it is an appropriate time to shift the RE planning to a more cost-disciplined approach that better aligns the renewable programming budgets with revenues intended to support such programming. Accordingly, in considering this RE Plan, the Company is presenting a complete and transparent view of all renewable DG costs, not just costs from incentives which impact the RESA as the Company has presented in previous plans.

Second, many of the costs reflected in this Plan reflect 20-year commitments funded by all customers. These costs build cumulatively upon each other throughout the course of the Plan. It is important that the Commission have this information in considering the reasonableness and appropriateness of this Plan.

Q. PLEASE EXPLAIN THE DIFFERENT COST CATEGORIES REFLECTED IN THE PLAN'S BUDGET.

A. The cost categories in the budget reflect the following categories. Cost estimates for each category are provided in more detail in the Direct Testimony of Company witness Ms. Klemm (Table KRK-D-4).

- **Year 1 / Annual Incentive Costs** – These costs are the summation of any performance-based incentives ("PBIs") (e.g., $/kWh), capacity-based incentives (e.g., $/kW), and any other incentives available to DER. These costs are initially charged to the RESA in the year paid. Modeled avoided costs associated with resource generation is recorded to the ECA throughout the life of the asset.

- **20-year Total Resource Costs –** These costs are equal to the sum of PBIs, upfront incentives, and annual program incentives, plus bill credit impacts from CSG or net energy metering (where applicable) over a 20-year period. Some of these costs are funded by the RESA but more are funded by the ECA.

Q. WHY DID THE COMPANY CONSIDER THESE COST CATEGORIES?

A. These cost categories reflect all potential cost impacts to various funding mechanisms including the RESA and ECA. As evidenced by the cost estimates presented in Table KRK-D-4, for many programs (e.g., Solar*Rewards On-Site),

the RESA impact for payment of PBIs and other incentives is relatively small compared to other cost impacts like bill credits.

Q. PLEASE EXPLAIN WHAT THE BILL CREDITS FOR ON-SITE SOLAR REPRESENT.

A. The bill credits represent the average benefit ($/kWh) that customers receive from self-generation that is used to offset customer bills. This includes credits for savings associated with both on-site consumption of self-generation, as well as kWh credits provided at the customer's full retail rate for any exported generation when a customer's system may produce more energy than is being consumed on-site. The bill credits are based on total bill savings, which include avoided base rate charges in addition to avoided riders and adjustments as a result of customer generation.

Q. HOW DID THE COMPANY CALCULATE THESE CREDITS?

A. The Company analyzed data across all (i.e., tens of thousands) current on-site solar customers in 2020 to develop this new bill credit analysis presented in this 2022-25 RE Plan. We offer this new data to help the Commission and stakeholders understand the total amount of these credits, and the total dollars and average credit in $/kWh by rate schedule. This analysis represents a refinement of the value of bill credits granted to on-site solar customers. The bill credits are calculated by rate schedule using each schedule's applicable rates and existing net metering customer use data. For existing net metering customers, actual bills which are based on net use were compared to hypothetical bills based on estimated or actual gross use. The total dollar difference between actual net-

use bills and hypothetical gross-use bills was then divided by total customer generation (kWh) to determine the average bill credit ($/kWh) that customers receive from self-generation. The following table lists the 2020 average net metering credits for each of Public Service's rate schedules. The table shows that credits are highest for Residential and Small Commercial customers, but that the Secondary Photovoltaic Time of Use Option also provides comparable credits for larger C&I customers.

Table JWI-D-8:
Average 2020 Net Metering Credits by Rate Schedule

	Average NEM Credit	Total Value of Bill Credits in 2020
Residential (R)	$0.105/kWh	$43,167,328
Residential Time of Use (RE-TOU)	$0.120/kWh	$1,096,769
Residential Demand Time Differentiated (RD-TDR)	$0.044/kWh	$22,306
Residential Demand (RD)	$0.060/kWh	$16,542
Small Commercial (C)	$0.102/kWh	$1,555,497
Secondary General (SG)	$0.072/kWh	$6,577,501
Secondary Photovoltaic Time of Use – Option A (SPVTOU-A)	$0.100/kWh	$2,594,621
Secondary Photovoltaic Time of Use – Option B (SPVTOU-B)	$0.096/kWh	$1,296,022
Secondary Low Load Factor (SGL)	$0.213/kWh	$2,271,514
Primary General (PG)	$0.082/kWh	$1,493,350
Transmission General (TG)	$0.082/kWh	$808,563
Weighted Average Credit	**$0.102/kWh**	**$60,900,012**

The bill credits are calculated by rate schedule using each schedule's applicable rates and historical net metering customer use data. For existing net metering customers, actual bills which are based on net use were compared to hypothetical bills based on estimated or actual gross use. The total dollar difference between actual net-use bills and hypothetical gross-use bills was then divided by total customer generation (kWh) to determine the average bill credit ($/kWh) that customers receive from self-generation.

Q. WILL THE TOTAL AGGREGATE *VOLUME* OF BILL CREDITS INCREASE OVER TIME?

A. Yes. Based upon historical NEM-only installations, the Company expects to see continued growth of systems, thereby leading to additional generation of bill credits for new systems (as well as continuing to provide bill credits to already installed systems indefinitely).[20]

Q. WILL THE TOTAL AGGREGATE *COST* OF BILL CREDITS INCREASE OVER TIME?

A. Yes, the cost impact of the bill credits are a product of total customer generation and the export compensation treatment set by tariffs. As explained above, the Company expects customer generation capacity to continue to increase.[21] To the extent any changes to these bill credits are triggered as a result of future electric rate cases or other filings, which may impact the crediting applied to exported

[20] The Company notes that there are no defined terms for NEM compensation (unlike PBIs and REC purchases which are limited to 20 years for Solar*Rewards customers).
[21] The Company forecasts, on average, approximately 47 MW of NEM-only systems will be added annually through 2025.

generation, then the bill credits may fluctuate over time. In the aggregate, however, the Company generally expects the cost of these credits to increase over time.

V. RES COMPLIANCE FORECAST

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

A. In this section of my Direct Testimony, I present the Company's proposals with regard to the acquisition of Non-DG, Wholesale DG, and Retail DG resources as part of this 2022-25 RE Plan.

A. Non-DG and Wholesale DG

Q. IS THE COMPANY SEEKING TO ACQUIRE ANY ADDITIONAL WHOLESALE DG OR NON-DG ELIGIBLE ENERGY RESOURCES UNDER ITS 2022-25 RE PLAN?

A. No. As I explained earlier in my testimony, the Company's existing Eligible Energy Resources position it to exceed the RES in both the Wholesale DG and Non-DG categories through 2025. The compliance for these categories of generation is demonstrated in Table 4-2 in Attachment JWI-2, as sponsored by Company witness Ms. Fowler.

The Company's ongoing transition to cleaner energy, and notably renewable Eligible Energy Resources, continues as part of economic resource acquisitions conducted through the ERP process. For example, we currently forecast that the previously approved Colorado Energy Plan in Proceeding No. 16A-0396E will lead to more than 50 percent renewable energy on our system by 2025; this markedly exceeds the RES requirement of 30 percent for 2020 and beyond. The ongoing 2021 ERP & CEP in Proceeding No. 21A-0141E will continue to drive significant new renewable in the later years of this decade.

Q. WHAT IS THE COMPANY PROPOSING WITH RESPECT TO ITS RENEWABLE*CONNECT PROGRAM?

A. The Company is proposing a significant update and expansion to its Renewable*Connect program in response to continued strong customer demand. The existing Renewable*Connect program's capacity is 50 MW, and it has been fully subscribed since it launched in 2018. There is currently a waitlist for the program, and several larger customers have expressed interest in it.

The Company is therefore proposing to continue the existing 50 MW Renewable*Connect program, while adding four new programs under the Renewable*Connect umbrella:

(1) **Renewable*Connect 2.0:** an expansion of the current sold-out program including acquisition of 300 MW of incremental solar generation, to be procured as a 15-year PPA;

(2) **Renewable*Connect Month-to-Month:** formerly the Company's Windsource program;

(3) **Renewable*Connect Community:** a REC purchase program for communities served by Public Service; and,

(4) **Renewable*Connect Natural Gas:** a new program that offers customers to reduce the carbon footprint of their natural gas usage through a combination of RNG and carbon offsets.

Company witness Mr. Cowan discusses the Company's proposed Renewable*Connect expansion in greater detail in his Direct Testimony.

Q. WHAT IS THE COMPANY PROPOSING WITH RESPECT TO ITS WINDSOURCE PROGRAM?

A. As Mr. Cowan explains, the Company is proposing to discontinue the Windsource program name and migrate currently subscribed Windsource customers to the new Renewable*Connect Month-to-Month program, structured similarly to the existing Windsource program but incorporating solar resources along with the wind resources and with a reduced price of $1.00 per 100-kWh block (as compared to the current $1.50 per block price for the Windsource program). While Windsource remains a popular program, this change will eliminate a separation between wind and solar customer choice programs that customers have found both limiting and confusing.

Q. IS THE COMPANY PROPOSING THE ACQUISITION OF ANY OTHER WHOLESALE DG RESOURCES?

A. The Company is seeking to add up to 300 MW of solar generation for its Renewable*Connect 2.0 program. The Company is also committed to working to support communities which may have accelerated renewable energy goals, such as the City of Boulder. The City of Boulder's Clean Energy Plan – Zero Emissions Community ("CEP-ZEC"), which was presented by City of Boulder witness Mr. Matthew A. Lehrman in Proceeding No. 21A-0141E, is one such example where Company acquisition of incremental renewable energy resources could support these accelerated goals. If the Company is successful in designing such a program, it anticipates that any future proposals would be brought forth in a separate filing before the Commission.

Q. HOW COULD THE COMPANY ACQUIRE THE RESOURCES FOR THESE PROGRAMS?

A. As I explained in my Rebuttal Testimony in Proceeding No. 21A-0141E, there are two options for resource acquisitions for R*C 2.0 and CEP-ZEC. These can come by way of the remaining bids in the Phase II of the 2021 ERP & CEP (after selected bids and back-up bids), or from separate resource solicitations.

B. <u>Retail DG</u>

Q. WHAT IS THE CURRENT STATUS OF THE COMPANY'S CUSTOMER-SITED SOLAR PROGRAMS?

A. In general, the Company meets its Retail DG requirement from our Solar*Rewards and Solar*Rewards Community programs (collectively called "Solar*Rewards programs"). As of December 31, 2020, the Company had acquired more than 466 MW_{DC} of Retail DG capacity resulting in the production of approximately 629,000 RECs on an annual basis.[22] This places the Company well beyond its RES compliance requirement for the Retail DG component of Colorado's RES in 2021, and under the 2022-25 RE Plan, the Company will continue to exceed the minimum RES requirements for Retail DG.

Q. WHAT ARE THE COMPANY'S PLANS FOR ACQUIRING ADDITIONAL CUSTOMER-SITED SOLAR UNDER ITS 2022-25 RE PLAN?

A. As described in Section 5 of Volume 1 of the Plan (Attachment JWI-1) and as Company witness Ms. Klemm explains in detail, the Company is proposing to

[22] Proceeding No. 19A-0369E, 2020 RES Report, at 10 and Attachment C (filed June 1, 2021).

continue programs which will support approximately 138 MW_{AC} of customer-sited solar generation through small, medium, large, and IQ programs.

Q. WHAT IS THE COMPANY PROPOSING WITH RESPECT TO ITS SOLAR*REWARDS SMALL PROGRAM?

A. As discussed by Ms. Klemm, the Company is proposing to transition its Solar*Rewards Small program to a new Solar*Rewards Battery Connect offering. Market observations and installations for NEM-only systems suggest that PBIs are no longer needed to support the growth of onsite residential solar in its service territory, and that those incentives could be better allocated to encouraging solar plus storage market growth. The Company proposes to maintain the Solar*Rewards Small program incentive of $0.005/kWh, paid for 20 years, plus an additional upfront incentive of $125/kW of paired battery capacity (capped at $1,250 for residential systems and $2500 for small commercial systems). The Company also proposes to offer a PBI of $100 for meeting a certain percentage of dispatch events to provide grid benefits.

Q. WHAT ABOUT THE COMPANY'S SOLAR*REWARDS MEDIUM PROGRAM?

A. The Company is proposing to rebrand the Solar*Rewards Medium program to Solar*Rewards Commercial and Industrial (or "C&I"). Under this new heading, the Company will offer 15 MW_{AC} of Solar*Rewards Medium capacity annually, which is a reduction from the 24 MW_{DC} (approximately 19 MW_{AC}) annually offered in the last RE Plan under the Solar*Rewards Medium program. This reduction is intended to accommodate the new Off-Site Solar offering that is expected to serve the same category of customers as the Solar*Rewards Medium and Large

programs. The Company also proposes to increase the maximum individual system project size from 500 kW to 1 MW, in adherence with recent legislation.

Additionally, the Company is proposing to divide the Solar*Rewards C&I program into three size categories with tiered incentives, to encourage a wider range of commercial customers by allowing the Company to offset the proportionally higher installation costs for smaller solar projects. The Company proposes incentive levels of $0.04/kWh for the C&I small size category, $0.0375/kWh for the C&I medium size category (consistent with the existing Solar*Rewards Medium incentive level), and $0.0350/kWh for the C&I large size category. Ms. Klemm provides further details in her Direct Testimony.

Q. WHAT ABOUT THE COMPANY'S SOLAR*REWARDS LARGE PROGRAM?

A. The Company proposes to continue the Solar*Rewards Large RFP for this offering, with certain adjustments. Namely, the Company proposes to reduce program capacity from 20 MW_{DC} to 15 MW_{AC} (to accommodate the new Off-Site Solar offering, as with the Solar*Rewards Medium program). The Company also proposes to increase the minimum project size to 1.01 MW; consequently, the Company proposes to remove the carveout for smaller systems of 1.5 MW or less, and implement a new bid cap of $0.03/kWh. Ms. Klemm provides further details on these and other proposed program changes in her Direct Testimony.

Q. PLEASE DESCRIBE THE COMPANY'S PROPOSED NEW OFF-SITE SOLAR OFFERING.

A. The Company anticipates offering a total of approximately 82 MW_{AC} of off-site solar capacity over the Plan period. It is expected that there will be some overlap between this new off-site offering and prospective on-site and CSG customers.

Q. WHAT IS THE COMPANY PROPOSING WITH RESPECT TO ITS SOLAR*REWARDS COMMUNITY PROGRAM?

A. The Company is proposing the continuation of all three of its current Solar*Rewards Community (RFP, Standard Offer, and IQ Company-owned CSGs) offerings over the Plan period collectively accounting for 75 MW_{AC} of annual plan capacity. Notably, and as explained by Ms. Klemm, the Company has substantially increased the amount of capacity which will be made available under the Solar*Rewards Community Standard Offer program.

Q. IS THE COMPANY PROPOSING TO CONTINUE ADDING ANY CAPACITY FOR COMPANY-OWNED CSGS?

A. Yes. The Company is proposing to add up to 10 MW_{AC} of Company-owned CSGs annually over the Plan period that will support IQ customers, for a total capacity expansion of 40 MW_{AC}, and utilize project labor agreements ("PLAs") with union labor as we are doing for the 8 MW that was approved by the Commission in the 2020-21 RE Plan.

As required by Rule 3657(b)(XI), the Company anticipates the additional Company-owned IQ CSGs will impact an estimated 1,500 additional subscribers

per year of this Plan, or 6,000 subscribers receiving an estimated $170 in net bill savings each year.

Q. HOW DOES THE COMPANY PLAN TO SUPPORT LOW-INCOME/IQ CUSTOMERS THROUGH ITS RETAIL DG PROGRAMS?

A. This will be accomplished through a combination of programs. As mentioned above, the Company proposes a total of 40 MW of CSG capacity for IQ customers through participation in our Company-owned CSGs. The Company will continue to support 1 MW of CEO's IQ rooftop solar program, which we are calling the Residential IQ On-Site Solar program for purposes of this RE Plan. We are also seeking to support IQ customers through participation in the Company's Solar*Rewards C&I program, which Ms. Klemm discusses. Finally, there will be IQ customers who will be able to participate in non-Company-offered CSG programs. Altogether, the Company is significantly expanding opportunities for IQ customers in the 2022-25 RE Plan.

Q. IS THE COMPANY PROPOSING TO ACQUIRE OTHER CUSTOMER-SITED ELIGIBLE ENERGY RESOURCES UNDER THIS PLAN?

A. Yes, the Company is proposing to continue its established Recycled Energy program. The Company will also offer incentives that will support approximately 4 MW of renewable battery energy storage capacity annually through the Company's Solar*Rewards Battery Connect program.

Q. PLEASE PROVIDE AN OVERVIEW OF THE COMPANY'S RECYCLED ENERGY PROGRAM.

A. The Company's Recycled Energy Program was introduced in the Company's 2017-19 RE Plan and included the corresponding tariff pages for Recycled Energy Service ("Schedule RE"). The Company's Recycled Energy program is designed to provide an incentive for customers who deploy recycled energy electric generating facilities, which turn waste heat into electricity. Recycled energy is defined as energy produced by a system which converts otherwise lost heat energy from exhaust stacks or pipes into electricity, without using additional fossil fuel. The Company is not proposing any changes to the program in the 2022-25 RE Plan.

VI. COST RECOVERY AND RESA SUMMARY

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

A. In this section of my Direct Testimony, I discuss the current status and forecast of the Company's RESA balance and the retail rate impact associated with this 2022-25 RE Plan. I also discuss the Company's request to continue the RESA at a one percent collection level.

Q. HOW DOES THE COMPANY PLAN TO RECOVER THE COSTS OF RENEWABLE ENERGY ASSOCIATED WITH ITS 2022-25 RE PLAN?

A. The Company recovers the costs of renewable energy through a combination of the RESA deferred account and the ECA deferred account. This allocation is consistent with legislative directive as well as Commission Rules. Section 40-2-124(1)(g), C.R.S., implemented by Rule 3661, establishes a maximum retail rate impact for RES programs of two percent of the total electric bill annually for each customer.

Public Service has a deferred account, called the RESA, which tracks the incremental costs of the renewable energy acquired. The RESA is a rate adjustment mechanism that prior to 2021 added two percent to each customer's total bill. However, in accordance with Decision No. C18-0762 in Proceeding No. 17A-0797E and Decision No. C20-0700 in Proceeding No. 20AL-0191E, the RESA surcharge was reduced to one percent effective November 1, 2020, via Advice No. 1836 – Electric (Proceeding No. 20AL-0436E), to offset the newly implemented one percent CEPA surcharge while still keeping the overall rate impact at two

percent.[23] The RESA deferred account tracks the revenues received from the RESA rider and the incremental costs of renewable energy incurred by the Company.

The RESA is designed so that the incremental costs of Eligible Energy Resources (sometimes referred to in shorthand as "renewable energy") are paid through the RESA account, while non-incremental costs are paid through the ECA. The non-incremental cost is equivalent to the cost of non-Eligible Energy Resources that are displaced by the acquisition of the Eligible Energy Resources. On Public Service's system, the non-incremental cost is sometimes referred to as the "avoided cost."

The incremental costs of Eligible Energy Resources cannot be directly measured, because the utility must compare the actual cost of the resource that is acquired with the hypothetical cost of the resource that it did not acquire (the proverbial "road not taken"). As a consequence, the incremental costs that are paid through the RESA are determined by sophisticated computer modeling of Public Service's generation system and through the development of two plans, referred to in Rule 3661(h) as the "RES Plan" and the "No-RES Plan." Company witness Mr. Trowbridge describes this modeling in more detail in his Direct Testimony as well as in Attachment JWI-1, Section 7 of the Plan.

[23] Proceeding No. 17A-0797E, Decision No. C18-0762, at ¶¶ 3, 32 (mailed Sept. 10, 2018); Proceeding No. 20AL-0191E, Decision No. C20-0700, at ¶ 19 (mailed Oct. 2, 2020).

Q. WHAT IS THE COMPANY PROPOSING WITH RESPECT TO CONTINUATION OF THE RESA?

A. Per Decision No. C20-0700 and the Company's existing RESA tariff, the RESA is currently set to expire on December 31, 2022.[24] However, this Plan supports the extension of RESA collections past December 31, 2022 and maintaining collections at one percent through the duration of the 2022-25 RE Plan. Consequently, the Company is proposing to extend the RESA at one percent through the duration of this Plan and through 2030. As the Company continues its path to 100 percent carbon reductions by 2050, the RESA will continue to provide an important source of support to managing customer bill impacts.

Consistent with Decision No. C20-0700, the Company proposes to use this proceeding for parties and the Commission to conduct a holistic examination of the RESA surcharge, and proposes to file a compliance Advice Letter in this proceeding to implement any resulting changes to its RESA tariff.[25] This proceeding is the most appropriate forum to address RESA issues in the context of the Company's anticipated RE Plan offerings, rather than a standalone Advice Letter proceeding, and that this approach is in keeping with the intent of Decision No. C20-0700. While the Company does not believe any waivers or variances from Decision No. C20-0700 are necessary to implement this approach, to the extent the Commission deems necessary, the Company requests that it be granted any such waivers or variances.

[24] Proceeding No. 20AL-0191E, Decision No. C20-0700, at ¶ 20 (mailed Oct. 2, 2020).
[25] Proceeding No. 20AL-0191E, Decision No. C20-0700 at ¶ 21 (mailed Oct. 2, 2020).

Company witness Mr. Trowbridge discusses the Company's proposed implementation of the RESA if extended by the Commission. He also presents and supports the revenue requirements justifying continuation of the RESA at the proposed level, as required by Decision No. C20-0700. As Mr. Trowbridge explains in his Direct Testimony, the Company is proposing to maintain the current allocation of cost recovery for renewable energy between the RESA and ECA for the 2022-25 RE Plan.

Q. PLEASE PROVIDE AN OVERVIEW OF THE RESA STATUS AND FORECAST PROVIDED IT IS EXTENDED BY THE COMMISSION.

A. As explained in Mr. Trowbridge's Direct Testimony and assuming the Company's RESA extension is approved, the RESA balance is projected to be positive throughout the term of the 2022-25 RE Plan and over the 10-year planning period until 2030.

Q. IS THE RETAIL RATE IMPACT SECTION OF THE PLAN IN COMPLIANCE WITH COMMISSION RULE?

A. Yes, the Retail Rate Impact section of the Plan complies with Rule 3661. Specifically, Rule 3661(a) provides that the net retail rate impact of Public Service's actions comply with the RES statute and Commission Rule if the RESA rate does not exceed two percent of the annual total electric bill for each retail customer. In addition, Rule 3661(f) requires the Company to estimate the retail rate impact of its RES at the beginning of the Compliance Year and for a minimum of 10 years after, and identify the funds needed to comply with the RES and retail rate impact

rules. We provide this information in Section 7 of the Plan and related Table 7-2(c).

VII. OTHER ISSUES

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

A. In this section of my Direct Testimony, I discuss several remaining issues not addressed earlier in my Direct Testimony, specifically: (1) the importance of flexibility in the Plan and its programs; (2) the need for flexibility regarding the Company's program administration budget given recent trends, and the variance the Company is requesting in this Proceeding as a result; (3) the Company's proposal to incorporate the social cost of carbon (as set forth in SB 19-236 and modified by HB 21-1238) into its modeling for the 2022-25 RE Plan; (4) the Company's plans to continue stakeholder outreach and engagement meetings similar to our efforts following recent RE Plans; and, (5) the Company's efforts with respect to its Commission-ordered review of the Company's IQ programming, and how this has been impacted by recent legislation.

A. Plan and Program Flexibility

Q. IS IT POSSIBLE THE COMPANY MAY NEED TO MAKE ADJUSTMENTS TO THE 2022-25 RE PLAN OVER THE COURSE OF THE PLAN?

A. Potentially. Since this RE Plan covers four years and it is entirely conceivable that due to the longer duration the Plan adjustments may be warranted. As with the current 2020-21 RE Plan, the Company has filed Motions to make certain modifications and believes that that Commission Rule 3657(d) provides a way for the Company to make appropriate adjustments to the RE Plan.

Q. WHAT CHANGING CIRCUMSTANCES MIGHT REQUIRE THE COMPANY TO REQUEST AN ADJUSTMENT TO ITS 2022-25 RE PLAN?

A. A principal example would be the need to adapt to legislation which may be passed over the course of the Plan that would impact the requirements for it or its programs. As we saw with 2021's busy legislative session, this can have significant impacts on the programs the Company can or must bring forward and the design of the programs themselves, as well as cost recovery, administrative, and other issues. Another example would be amendments required by or stemming from the Commission's final decision in this Proceeding, such as the Commission's directive in the 2020-21 RE Plan that required the Company to request an amendment to its Commission-approved Plan to implement any changes to its Solar*Rewards Community bid evaluation criteria.[26] This is not an exhaustive list, of course, as any number of unforeseen circumstances could impact the Company's RES programming over the next four years—hence the need for flexibility.

Q. HOW DOES THE COMPANY PROPOSE TO IMPLEMENT ANY SUCH ADJUSTMENTS OR AMENDMENTS, IF NEEDED?

A. Under the 2020-21 RE Plan the Company has made adjustments through a motion process. Rule 3657(d) states that the Company "may apply to the Commission at any time for approval of amendments to an approved RES compliance plan."[27] I am not a lawyer, but I believe that in the interest of administrative efficiency, the

[26] Proceeding No. 19A-0369E, Decision No. C20-0289, at ¶ 35 (mailed Apr. 28, 2020).
[27] 4 CCR 723-3-3657(d).

most appropriate interpretation of this provision is that it supports both requests made by motion in the case of smaller adjustments/amendments, and requests made by separate application if more significant changes are needed. This interpretation is consistent with how the Company approached amendments in the 2020-21 RE Plan. The Company therefore proposes to use both motions and applications as appropriate going forward, to adjust the approved 2022-25 RE Plan as needed.

B. Program Administration Budget Flexibility

Q. IS THE RESA BEING COLLECTED AT A LOWER RATE THAN IN THE RECENT PAST?

A. Yes. As of November 1, 2020, the RESA collection rate was reduced from two percent to one percent, as approved by the Commission. As I explained above, this was done in conjunction with the creation of the CEPA, which in turn was used to help fund the costs of early retirement of Comanche 1 and Comanche 2 as decided in Proceeding Nos. 16A-0396E, 17A-0797E, and 20AL-0191E. Also, the Company has ended new sales of RECs to out-of-state entities, and while some of the previously established sales agreements result in REC sales revenue through approximately 2023, the revenue from these types of REC sales will decline and end during the course of this 2022-25 RE Plan. The revenue has historically been material to the RESA—in 2020, the Company's REC sales delivered $7.2 million to the RESA from hybrid REC sales alone.

Q. ARE PROGRAM ADMINISTRATION COSTS INCREASING?

A. Yes, in general administration costs and other costs such as activities to support interaction have grown. This increase in administration costs can be attributed to two primary factors. First, programs have generally increased in capacity over time, as mentioned earlier in my Direct Testimony. All else being equal, supporting more capacity leads to greater administrative costs. Second, as Colorado is a robust and mature market for DER, the technical and program administration complexity has increased substantially which has required increased spending on training, technology, and incremental labor. In response, the Company has increased its use of administration costs collected under the RESA that are used for labor, travel, technology expenses, advertising, and educational and promotional efforts to support RES programs and DER implementation.

Q. AS RESA REVENUES HAVE DECREASED, AND ADMINISTRATION COSTS HAVE RISEN, HAVE ADMINISTRATIVE COSTS AS A PERCENT OF RESA REVENUES INCREASED?

A. Yes. Recently, administrative costs have been rising to close to 10 percent of revenues, and as the Company seeks to administer a growing set of renewable programs through the RESA, it is expected that administrative costs may well rise.

Q. IS THERE A COMMISSION RULE GUIDING THE LEVEL OF ADMINISTRATIVE COSTS THAT MAY BE CHARGED FROM THE RESA?

A. Yes. Commission Rule 3661(d) limits administrative costs to 10 percent of the total annual RESA collection.

Q. COULD THE ADMINISTRATIVE COST LIMIT IN RULE 3661(d) LIMIT THE COMPANY'S ABILITY TO ADMINISTER RENEWABLE PROGRAMS?

A. Yes. As the Company seeks to administer more renewable programs, and address increasingly complex interconnection issues, administrative costs could rise. While the "10 percent rule" has not recently been a binding constraint, it could now limit the ability to effectively administer programs, which could slow the implementation of distributed resources.

Q. IS THE COMPANY SEEKING A VARIANCE OF COMMISSION RULE 3661(d), THE 10 PERCENT ADMINISTRATIVE LIMIT?

A. Yes. The Company is seeking to allow the administrative costs to be up to 15 percent per year. While it is not expected to have administrative costs as high as 15 percent every year, the flexibility will ensure that the Company can administer programs effectively over the course of this Plan. The requested variance of Rule 3661(d) accompanies this 2022-25 RE Plan filing and is also summarized in the requested approvals at the end of my testimony.

Q. DOES THE COMPANY MAKE ANY PROFIT FROM ADMINISTRATIVE COSTS FUNDED BY THE RESA?

A. No. The administrative costs are treated as deferred Operations and Maintenance ("O&M") expenses and are charged directly against the RESA without interest or a carrying charge.

Q. DO THE EXISTING OR PROPOSED WINDSOURCE OR RENEWABLE*CONNECT PROGRAMS USE ANY RESA FUNDS OR CREATE ADMINISTRATIVE COSTS?

A. The current Windsource program does have some administrative costs; however, that program's proceeds are applied towards the RESA. As for Renewable*Connect, that program is entirely self-contained with no administrative costs charged to the RESA.

C. Cost of Carbon

Q. HOW DOES THE COMPANY PROPOSE TO INCORPORATE THE COST OF CARBON INTO ITS 2022-25 RE PLAN?

A. As discussed earlier, the Colorado Legislature passed SB 19-236 in the 2019 legislative session. This bill required the Company to consider the cost of carbon in its RES planning. The cost of carbon provisions specified the use of the federal government's most recent social cost of carbon, but in any case, the social cost of carbon must be at least $46 per short ton. HB 21-1238 then increased this value to a minimum of $68 per short ton. Applying the cost of carbon to RES planning is still a new consideration in Colorado, and the Company notes that at this point there are no Rules to follow on this matter for RES planning.

Q. WHAT COSTS OF CARBON DID THE COMPANY APPLY IN THIS ANALYSIS?

A. The Company applied the social cost of carbon using the latest Federal Interagency Working Group on Social Cost of Greenhouse Gases guidance using a 2.5 percent discount rate in accordance with HB 21-1238. These costs were converted from metric tons to short tons, and from 2020 dollars to nominal values.

Q. WHAT WERE THE RESULTS OF THE COMPANY'S COST OF CARBON ANALYSIS FOR THIS PLAN?

A. The total avoided cost reaches $28.4 million annually by the final year of the Plan.

Table JWI-D-9: Avoided Cost of Carbon[28]

	2022	2023	2024	2025
CO_2 Emissions Avoided (Short Tons)	87,983	175,965	263,948	341,697
SCC $/Short Ton	$74.59	$ 77.34	$80.17	$83.08
Total Avoided Social Carbon Costs	$6,562,976	$13,609,712	$21,161,359	$28,389,588

D. Stakeholder Outreach

Q. HOW HAS THE RES PLANNING STAKEHOLDER ENGAGEMENT PROCESS CHANGED IN RECENT YEARS?

A. Since the 2017-19 RE Plan the Company has had an active relationship with a variety of stakeholders. From the settlement of that RE Plan we were required to meet on certain topics and hold certain types of quarterly stakeholder meetings. Working with stakeholders, we have since that time consolidated meetings and started to meet with smaller groups of stakeholders on more specific issues. Today, our normal requirement for Retail DG programs is to have a general stakeholder meeting each quarter where more general topics are discussed. In those meetings, the Company provides updates on program performance and upcoming regulatory filings of relevance, and we have also invited parties to "guest speak" on certain topics.

[28] These tables represent emission reductions generated through the on-site, off-site, and CSG programs. The Company has not included Renewable*Connect in these totals because it believes that § 40-3.2-106, C.R.S. applies to only RE programs under § 40-2-124, C.R.S.

As mentioned, stakeholder meetings have also been at times more focused on particular issues and more frequent. An example of these is the stakeholder meetings the Company has hosted for developing CSG RFP scoring criteria. Our collective work on these has taken multiple meetings, over a more compressed timeframe (two to three weeks), and had a much smaller audience than the general quarterly stakeholder meetings.

The Company's only recommendation regarding stakeholder meetings is that they continue as they have and without rigid requirements. The Company and stakeholders have proven that parties are willing to engage and share. There may not always be total consensus with these meetings, but the Company, and I believe stakeholders, find that they are useful and productive.

Q. PLEASE DISCUSS THE STAKEHOLDER ENGAGEMENT THAT TOOK PLACE BETWEEN APPROVAL OF THE COMPANY'S LAST RE PLAN AND THIS 2022-25 RE PLAN FILING.

A. The Company has regularly met and communicated with stakeholders since its 2020-21 RE Plan was approved, with an eye toward further improving and refining the Company's renewable program offerings in anticipation of this 2022-25 RE Plan. In addition to engaging informally with stakeholders in the ordinary course of business, the Company has also regularly held stakeholder meetings to discuss specific topics; this has included solar plus storage, CSG scoring criteria, the 2021 legislative session, low income/IQ programs, general program performance, and RE Plan program input, to name a few. The Company has included summary

reports of the stakeholder meetings in its annual RES Compliance Reports, with the most recent filed this past June in Proceeding No. 19A-0369E.

Q. DID THE COMPANY IMPLEMENT ALL OF THE PROPOSALS THAT CAME OUT OF THESE STAKEHOLDER MEETINGS?

A. A wide range of ideas and feedback are raised through the stakeholder process, and while these are helpful to consider, it is not feasible or appropriate for the Company to adopt every proposal set forth by stakeholders. Generally, however, this continued collaboration has led to a number of beneficial modifications to the RE Plan that have garnered broad stakeholder support, many of which have impacted the contents of the 2022-25 RE Plan being presented in this Proceeding.

Q. WHAT WERE SOME OF THE MUTUALLY BENEFICIAL OUTCOMES THAT CAME OUT OF THIS STAKEHOLDER COLLABORATION?

A. There have been a number of beneficial outcomes, but more generally these meetings have been a success by simply allowing parties to engage more frequently and in a more casual, non-litigated setting, where ideas can be shared and discussion can flow more freely. Below are some specific stakeholder successes that have positively impacted this RE Plan and related proceedings:

- **Modifying Solar*Rewards Community 2021 RFP Criteria** – The Company collaborated with individual stakeholders, including the Colorado Solar and Storage Association ("COSSA"), to modify the process and bid evaluation criteria for the Company's 2021 RFP. The Company's Motion to amend the RFP scoring criteria was unopposed by stakeholders and unanimously approved the Commission in Proceeding No. 19A-0369E.

- **DSP Rule Change –** The Company collaborated with individual stakeholders, including COSSA, to propose an amended rule related to assessing the distribution system for the ability of CSGs to interconnect

(Proceeding No. 20R-0516E). The proposed rule change was unanimously accepted by the Commission.

Q. DOES THE COMPANY INTEND TO CONTINUE THE PRACTICE OF HOSTING STAKEHOLDER MEETINGS AFTER THE 2022-25 RE PLAN IS APPROVED?

A. Yes. As demonstrated above, the Company believes that stakeholder collaboration has overall led to improved outcomes for the Company's customers.

E. <u>IQ Program Review</u>

Q. PLEASE DESCRIBE THE COMPANY'S EFFORTS TO UNDERTAKE A REVIEW OF IQ PROGRAMMING?

A. As part of Decision No. R20-0099 in Proceeding No. 19A-0369E, the Company was directed to initiate stakeholder outreach to further investigate low-income issues across the broad spectrum of customer needs.[29] During 2020 and 2021 the Company held several stakeholder meetings on the topic as a group or on a more one-on-one basis. The Company found the research useful and stakeholder discussions were informative.

As the Company was progressing with these engagements, the 2021 legislative session provided a new and greater level of focus on IQ and environmental justice issues that far surpassed the scope that the Company had envisioned when it recommended a low-income/IQ holistic review in the 2020-21 RE Plan. This forced the Company to engage with stakeholders shortly after the legislative session ended to begin discussions on how to practically approach new requirements such as those detailed in SB 21-272.

[29] Proceeding No. 19A-0369E, Decision No. R20-0099, at ¶ 164 (mailed Feb. 14, 2020).

Q. HAS THE LEGISLATURE SPECIFICALLY DIRECTED THE COMPANY AND THE COMMISSION ON IQ PROGRAMMING ISSUES RELEVANT TO RE PLANS?

A. Yes. I described these at length earlier in my Direct Testimony in the legislative review section.

Q. DOES THE COMPANY PLAN TO COMPLY WITH THIS NEW LAW CONCERNING THE REQUIRED RE PLAN INVESTMENT FOR IQ CUSTOMERS AND DISPROPORTIONATELY IMPACTED COMMUNITIES?

A. Yes. The Company is putting forth a 2022-25 RE Plan that proposes annual incentive expenditures (e.g., PBIs, one-time payments, and installment incentive payments) that are targeted for IQ/DIC purposes. To comply with the statutory 40 percent metric, the Company proposes to use the annual incentive expenditures from the various programs that are supported by the RESA that are targeted for IQ/DIC purposes as compared to all incentive expenditures. Based upon what the Company has proposed in the 2022-25 RE Plan the Company estimates that it will have targeted 52 percent of incentive expenditures for IQ/DIC purposes.

VIII. DEFERRAL OF LEGAL AND HEARING EXPENSES

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

A. In this section of my testimony, I support the Company's request to defer expenses associated with preparing and litigating this proceeding. The Company is requesting that the Commission approve a deferral of expenses related to outside legal counsel work, as well as transcript and hearing costs. Specifically, the Company is requesting the review, approval, and recovery of these expenses be brought forward in a future cost recovery proceeding. These expenses would be deferred into a regulatory asset without interest until they are presented for cost recovery. Public Service commits to presenting the actual expenses at the time of the future cost recovery filing.

Q. PLEASE LIST AND DESCRIBE THE MAJOR EXPENSE CATEGORIES YOU ARE REQUESTING FOR DEFERRAL.

A. The major categories of expenses for the Company's 2022-25 RE Plan are listed below:

- **Transcripts/Hearing Costs:** During the course of this proceeding, a court reporter will be necessary to transcribe depositions and hearings before the Commission. There is a cost of having court reporters record and transcribe these proceedings; this fee increases or decreases based upon the timeframe by which the reporter is asked to prepare the transcript.

- **Legal Counsel:** The Company has an in-house legal department whose regulatory team works on matters before the Commission. However, the Company's heavy caseload cannot solely be carried via the in-house legal team, so retention of outside attorneys for this work is necessary. RE Plans are complex, statutorily required, and are not routinely filed every year like some of the Company's existing filing obligations. The Company's ability to rely on its in-house counsel for RE Plans is dependent upon other pending litigated matters. Therefore, outside legal assistance is crucial.

Q. PLEASE DISCUSS THE TRANSCRIPT AND HEARING COSTS THAT THE COMPANY IS PROJECTING TO INCUR AS PART OF THE RE PLAN?

A. The Company anticipates incurring an approximate cost of $27,250 for the purchase of transcripts of the hearings and other hearing costs.

Q. PLEASE DISCUSS THE OUTSIDE LEGAL FEES THAT THE COMPANY IS PROJECTING TO INCUR AS PART OF THE RE PLAN?

A. Outside legal costs are estimated to be $550,000 for the legal services provided by Wilkinson Barker Knauer LLP ("WBK"). WBK was retained for its expertise and specific knowledge of Public Service and other Xcel Energy operating companies, as well as the firm's specific experience working on issues related to this filing and past RE plans. The firm provided, or will provide, assistance in assembling testimony and attachments, witness preparation, responding to discovery, and generally processing the case. The Company's internal legal team works hard to ensure that duties are appropriately assigned to outside legal counsel and to ensure that work efforts are not duplicative. The internal and external legal teams work as a unit and are in constant coordination to be as efficient as possible.

IX. REQUESTED APPROVALS AND CONCLUSION

Q. WHAT IS THE COMPANY REQUESTING THE COMMISSION APPROVE UNDER THIS APPLICATION?

A. The Company respectfully requests that the Commission approve its 2022-25 RE Plan in full, including without limitation:

- The Company's proposed acquisition/capacity levels, incentive levels, and programming proposals for its Solar*Rewards, Solar*Rewards Community, and Solar*Rewards Residential IQ On-Site Solar programs, including the Company's proposal to transition the Solar*Rewards Small offering to a Solar*Rewards Battery Connect offering;

- The Company's proposal to develop and own an additional 40 MW of Company-owned CSG capacity using a PLA;

- The Company's proposed Off-Site Solar capacity and programming proposals, including the Company's proposed methodology for calculating the net metering credit minus a reasonable charge for delivery;

- The Company's proposed Renewable*Connect capacity and programming proposals, including its Renewable*Connect 1.0, Renewable*Connect 2.0, Renewable*Connect Month-to-Month (formerly known as Windsource), Renewable*Connect Community, and Renewable*Connect Natural Gas proposals, inclusive of the Company's proposed acquisition plan;

- The Company's request to maintain RESA collections at the current rate of one percent;

- The Company's request to defer expenses associated with preparing and litigating this proceeding;

- All requests for waivers and variances set forth in the contemporaneously-filed Motion for Waivers and Variances, along with any other waivers or variances to the extent the Commission deems them necessary to implement the Company's proposed and/or ultimately approved Plan, as set forth in the Company's contemporaneously-filed Motion for Waivers and Variances;

- The Company's request for alternative forms of notice for the 2022-25 RE Plan, as set forth in the Company's contemporaneously-filed Motion for Alternative Forms of Notice; and,

- All other requested approvals and proposals set forth in the Company's Direct Case, in addition to any other approvals or relief necessary to implement the Company's proposed 2022-25 RE Plan.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

Statement of Qualifications

Jack W. Ihle

Jack Ihle is Director of Regulatory & Strategy Analysis for Xcel Energy – Colorado. He leads a team responsible for regulatory aspects of resource planning, renewable energy planning, electric vehicles and other policy issues. He has testified before the Colorado Public Utilities Commission, the Colorado Legislature, the Minnesota Legislature, and the New Mexico Environmental Improvement Board.

Mr. Ihle previously worked in environmental policy for ten years, most recently serving as Director of Environmental Policy while leading Xcel Energy's climate policy, environmental policy and environmental communications efforts across the Company's eight states. Mr. Ihle has also served in energy consulting roles with IHS Markit and Platts, focusing on renewable energy, climate policy and forecasting engagements.

Mr. Ihle has a Master of Science degree in Energy & Resources from the University of California at Berkeley, and a Bachelor of Arts degree in Political Science from Bowling Green State University. He serves on the board of directors for Volunteers for Outdoor Colorado, and has previously served on the boards of the Regional Air Quality Council, XPAC, the Solar Technology Acceleration Center and WEST Associates.

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

* * * * *

IN THE MATTER OF THE	)	
APPLICATION OF PUBLIC SERVICE	)	
COMPANY OF COLORADO FOR	)	
APPROVAL OF ITS 2022–2025	)	**PROCEEDING NO. 21A-____EG**
RENEWABLE ENERGY COMPLIANCE	)	
PLAN	)	

AFFIDAVIT OF JACK W. IHLE
ON BEHALF OF
PUBLIC SERVICE COMPANY OF COLORADO

I, Jack W. Ihle, being duly sworn, state that the Direct Testimony and attachments were prepared by me or under my supervision, control, and direction; that the Direct Testimony and attachments are 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 17th day of December 2021.

Jack W. Ihle
Director, Regulatory and Strategic Analysis

Subscribed and sworn to before me this 17th day of Dec., 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