



2020 Renewable Energy Plan

Public Service Company of Colorado | June 2019

Volume 1

Section 1 - Executive Summary

In this 2020 – 2021 Renewable Energy Plan (“Plan” or “2020-21 RE Plan” or “Plan”), Public Service of Colorado (“Public Service” or the “Company”) demonstrates the Company’s continued leadership in transiting to a more sustainable energy future, powered by less carbon-intensive fuel sources, while continuing to offer customers a variety of cost-effective renewable energy choices. The Company considers its 2020-21 RE Plan to be a bridge plan between its 2017-2019 Renewable Energy Plan (“2017-19 RE Plan”), where we implemented fairly significant programmatic changes, and our anticipated 2022 through 2025 Renewable Energy Plan (“2022-25 RE Plan”), which is expected to encapsulate some of the major legislative and regulatory changes that are occurring in Colorado. For example, the 2022-25 RE plan will be influenced greatly by new rules developed as part of the ongoing Notice Of Proposed Rulemaking (“NOPR”) Proceeding (Proceeding No. 19R-0096E); by new Distribution System Planning (“DSP”) rules that SB 19-236 directed the Commission to develop; potentially by the legislative direction in SB 19-236 to include as part of the next resource plan a potentially transformative Clean Energy Plan for the Company to achieve 80 percent carbon dioxide emissions reductions by 2030; in addition to any future legislation or regulations promulgated during this Plan period. In this 2020-21 RE Plan, we seek to continue the progress made on our renewable energy offerings to date in a logical progression, while working hard to formulate strategies to implement transformative new ideas and requirements. Importantly, through this Plan, the Company will continue to exceed Colorado’s current Renewable Energy Standard (“RES”), while meeting our customers’ growing energy demands in the most reliable, clean, and affordable way possible.

Under the 2020-21 RE Plan, the Company proposes a measured increase in renewable energy programs and related customer choice options. The Company is proposing only modest adjustments to our existing programs to “right size” them to customer demand. We propose some program expansions, some small program reductions, and some capacity transfers between programs. More specifically, we are proposing to reduce capacity to our Solar*Rewards® Small program in order to maintain this program, but

also to reflect that more people are choosing to interconnect their small systems outside the Company's Solar*Rewards® Small program on a Net Energy Metered Only ("NEM Only") basis. We are proposing to reduce capacity to our Solar*Rewards® Medium program based on historic trends, but shifting that capacity to our Solar*Rewards Community® Standard Offer program. We recommend keeping our Solar*Rewards® Large program open, but expanding capacity to respond to customer demand. We recognize some of our customers are unable to add solar directly on their properties but still have environmental goals. For these customers, we are committed to maintaining capacity for our Solar*Rewards Community® solar gardens program.

Our Plan isn't just about solar; we will continue our Windsource® program, which has a long history of providing a green energy option to our customers. Windsource® has been and continues to be a popular way for our customers to participate in renewable energy. The 2020-21 RE Plan also contains our Recycled Energy program which could acquire up to 20 MW per year. Recycled Energy is a clean energy option that uses what would otherwise be waste heat or steam to produce electricity at a customer's site.

We respectfully ask for the Commission to approve this 2020-21 RE Plan.

Renewable Energy Standard

In November 2004, Colorado voters passed Amendment 37 (codified at C.R.S. § 40-2-124) that established a RES for certain Colorado electric utilities termed Qualifying Retail Utilities ("QRUs").¹ The RES requires a QRU to generate or cause to be generated a certain percentage of their retail sales from renewable energy under certain retail rate impact limitations.

In 2010, the General Assembly passed HB 10-1001 that increased the Colorado RES to require a QRU to generate or cause to be generated minimum amounts of electricity from renewable resources (called "Eligible Energy Resources") equating to 30 percent

¹ Capitalized terms in this Compliance Plan, if not otherwise defined herein, shall have the same meanings as in the Commission Rules implementing the Renewable Energy Standard, 4 CCR 723-3-3650, *et seq.*

of its electric sales by 2020. HB 10-1001 also eliminated the solar standard that had originally been established by Amendment 37 and instead established a requirement that a portion of the 30 percent RES be met with Renewable Distributed Generation (“DG”). The DG requirement was divided between Wholesale DG and Retail DG; Retail DG is a renewable resource located on the site of customer facilities and interconnected on the customer’s side of the utility’s meter. By statute, it is limited in size to 120 percent of the customer’s electric load. Wholesale DG is defined as a renewable resource with a nameplate rating of 30 MW or less and does not qualify as Retail DG.

In this same session, HB 10-1342 established what are commonly termed “community solar gardens” (“CSGs”), which are facilities that are large enough to meet the solar needs of many customers. Customers may participate in these 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 CSG generation that they acquired. This bill limited the Company to acquiring no more than 6 MW of solar garden capacity each year from 2011 through 2013 and provides for the Commission to establish the minimum and maximum capacity starting in 2014 and beyond. By Decision No. C14-1505, the Commission set the range of acquisitions between 6.5 MW and 30 MW in 2014, 2015, and 2016. For the years 2017 – 2019 the Company has offered a minimum capacity of 15 MW and an average maximum capacity of 35 MW for its General Solar*Rewards Community® General request for proposals (“RFP”). We are proposing to continue at these levels for our General RFP, but increase the overall CSG capacity level to 48 MW annually.

The recently signed HB 19-1003 increases the maximum project capacity size to 5 MW (10 MW after July 1, 2023), and removes the adjacent county limitation, which enables customers to subscribe to a CSG anywhere within a QRU’s service territory. The Company plans to implement these changes, along with any other Commission-approved changes that impact its Solar*Rewards Community® offerings, once the Commission issues its final rules, though it will implement such changes earlier if ordered by the Commission. Table 1 presents the annual RES requirements by year.

Table 1: Renewable Energy Standard

Period	RES	Distributed Generation	Retail Distributed Generation (Minimum)
2015 – 2016	20% of retail sales	1.75% of retail sales	Half of DG
2017-2019	20% of retail sales	2% of retail sales	Half of DG
2020 and beyond	30% of retail sales	3% of retail sales	Half of DG

SB 13-252 was enacted to, among other things, expand the definition of Eligible Energy Resources to include resources using coal mine methane and synthetic gas produced by pyrolysis of municipal solid waste so long as the Commission determines that the greenhouse gases emitted by these resources is not greater than the volume of greenhouse gases that would have been emitted into the atmosphere over a subsequent five-year period had the resource not converted the gas to electricity.

SB 13-252 allows for a 1.25 renewable energy credit (“REC”) bonus on all resources, other than retail distributed generation, placed in service prior to January 1, 2015. All incremental renewable resources placed in service prior to January 1, 2015 will retain the REC bonus.

Acquisition Plan

The Company is ahead of compliance in all categories of the RES (Retail DG, Wholesale DG, and Non-DG) and will be able to meet its RES compliance goals in 2020 and 2021 Compliance Years. Notwithstanding this, under its proposals, Public Service will continue to offer substantial amounts of Eligible Energy Resource options to its customers above these minimum state requirements through this 2020-21 RE Plan.

Non-Distributed Generation

Between the Company’s 600 MW Rush Creek Wind Project (Proceeding No. 16A-0117E), and the Company’s last Electric Resource Plan (“ERP”) in Proceeding No. 16A-

0396E (the “2016 ERP”), the Company has received authorization to acquire a substantial amount of utility-scale renewable energy resources. Public Service will have sufficient Non-DG RECs to meet and exceed the RES for 2020 and 2021 Compliance Years as a result of acquiring both wind and solar generation under our ERPs since 2005, as well as other wind generation contractually acquired by the Company in prior periods. Public Service also projects it will have sufficient Non-DG RECs from existing eligible energy resources for compliance through the full 10-year planning horizon under the current RES rules.

This Plan does not address the acquisition of incremental Non-DG resources. The Company’s retail rate impact results, which are presented in Attachment JW1-2, Tables 7-2(a) through 7-2(c), include all Non-DG resources used to meet the Company’s Non-DG compliance requirements. For the 2020 Compliance Year, the Company will have just over 3,100 MW (name plate) of Non-DG wind serving the Company system and 220 MW (name plate) capacity of Non-DG solar.

Wholesale Distributed Generation

The Company has a number of Wholesale DG resources serving the load needs of our customers. Commission Rule 3652(II) defines Wholesale DG to include renewable energy resources located in Colorado with a nameplate rating of 30 MW or less that do not qualify as retail renewable DG. The Wholesale DG resources, as listed in Attachment JW1-2, Table 4-2, include 61 MW of small hydro facilities, 23 MW of wind, 85 MW of solar and 3 MW of biomass. As a result of these renewable resources acquired under previous RFPs, as well as other generation owned or contractually acquired by the Company in prior periods, Public Service will have sufficient Wholesale DG RECs to meet its RES requirement for the 2020 and 2021 Compliance Years. In addition, Public Service projects it will have sufficient Wholesale DG RECs from existing Eligible Energy Resources for the full planning horizon under the 2020-21 RE Plan.

Retail Distributed Generation

Tables 4-2 through 4-4, in Attachment JW1-2 of the 2020-21 RE Plan, set forth the projected totals for standard offer RECs and other REC purchases. RECs are presented by market segments: Small (0.5-25 kW), Medium (25.1-500.0 kW), Large (>500.0 kW), and Solar*Rewards Community® projects. RECs listed as “REC Only” are for those customer-sited roof-top solar systems installed prior to 2006.

As shown in Attachment JW1-2, Table 4-3, the Company has approximately 330 MW of on-site solar installations connected to the system. Those connections are expected to generate over 500,000 RECs annually while 50 MW of CSG installations are expected to produce approximately 81,000 RECs annually. The Company will have sufficient Retail DG RECs for Compliance in 2020 and 2021. Projected acquisition of Retail DG RECs for 2020 through 2021 is set forth in Attachment JW1-2, Tables 4-2, 4-3, and 4-4. The Company’s forecasts of the Retail Rate Impact and estimated Renewable Energy Standard Adjustment (“RESA”) balance are presented in Attachment JW1-2, Tables 7-1 through 7-2(c). The forecast of RESA expenditures presented in the Tables are based upon the maximum forecast capacity additions proposed in this Plan. The anticipated costs of our proposed programs are included in the On-Site Solar Costs set forth in Attachment JW1-2, Tables 7-2(a), (b) and (c).

Solar* Rewards Community®

The Solar*Rewards Community® program is a program that enables customers who cannot, or do not wish to participate, in rooftop solar. The program, which launched in August 2012, serves customers who purchase or lease portions of a CSG installed in their community. Subscribing customers receive credits on their bill for the energy produced at a central location, avoiding the need to install solar on their premises. This program provides Public Service customers with more solar choices.

Since 2012, and through the 2018 RFPs, 174 MW of solar garden projects were accepted into the Solar*Rewards Community® program. The 174 MW consisted of 119

CSGs owned by several different developers and located throughout Public Service's territory. As of the end of 2018, 51 CSGs are energized. An additional 68 CSGs are in various stages of development including engineering design review.

Windsource®

Xcel Energy's Windsource® program is one of the largest utility green pricing programs in the country. As of 2018 there were nearly 52,000 Windsource® customers in Colorado. The program remains a vital part of Public Service's renewable portfolio and enables our customers to proactively purchase renewable energy to offset their energy use and meet their personal and business needs. The Windsource® program was originally established as an experimental, voluntary, value-priced energy program. Designed to stimulate wind development in Colorado, the program was responsible for development of the first commercial wind farm in Colorado, the 30 MW Ponnequin wind farm. Demand for the program grew significantly and Windsource® is now one of the leading voluntary green power programs in the country.

In 2018, the Company credited \$2.96 million in premiums from Windsource® sales to its RESA, which increases the amount of dollars available to acquire renewable resources. Public Service retires RECs in proportion to the amount of Windsource® sales above what is inherent in those sales that are retired for RES compliance.

Windsource® is structured to accomplish the following objectives:

- Meet the demand of customers who wish to purchase renewable energy in excess of RES;
- Offer renewable energy at reasonable rates under flexible terms;
- Ensure that non-participants are not economically impacted by the Windsource® program;
- Minimize year-to-year Windsource® price volatility;
- Ensure renewable energy supplies are readily available to meet rapid changes in voluntary program demand; and,

- Increase the amount of renewable generation on the system in accordance with customer demand.

Public Service is not proposing any changes to the pricing for Windsource® in 2020 and 2021.

Recycled Energy

The Company's Recycled Energy program offers customers an avenue to generate clean energy through the use of waste heat and steam, which would otherwise not be used at all. According to 4 CCR 723-3-3652(v):

“Recycled energy” means energy produced by a generation unit with a nameplate capacity of not more than fifteen megawatts that converts the otherwise lost energy from the heat from exhaust stacks or pipes to electricity and that does not combust additional fossil fuel. Recycled energy does not include energy produced by any system that uses energy, lost or otherwise, from a process whose primary purpose is the generation of electricity, including, without limitation, any process involving engine-driven generation or pumped hydroelectricity generation.

Although Recycled Energy is not defined as a renewable energy resource under the Commission's Rules, and therefore does not produce RECs, it is an Eligible Energy Resource and generation of energy from a recycled energy generator can be used to meet Colorado's RES under C.R.S. § 40-2-124.

The Company is not proposing any changes to its Recycled Energy program in 2020 and 2021.

Renewable*Connect®

Renewable*Connect® was launched in 2018 using a two-phase enrollment period in June/July, during which time the program became fully subscribed. In 2018, there were 3,411 subscribers, with 14 percent of capacity subscribed by residential customers and 86 percent of capacity subscribed to commercial/industrial customers.

After the program was fully subscribed in July 2018, a program waitlist became available to customers. At the end of 2018, there were 976 residential customers on the waitlist, representing roughly 2.5 MW of demand, and 85 commercial/industrial customers on the waitlist, representing roughly 166 MW of additional demand.

The Company is not proposing any changes to its Renewable*Connect® program in this RE Plan filing.

RESA Deferred Balance

Commission Rule 3661 establishes the parameters for determining the retail rate impact of implementing the RES. Rule 3661(a) states that the net rate impact of Public Service's actions to comply with the RES shall not exceed two percent of the total electric bill annually for each retail customer. The Company projects that contributions to the RESA will be sufficient to cover the costs to be charged to the RESA for the years 2020 through 2021.

Our projection that we will not need to advance funds to the RESA during the compliance period is based upon certain projections and assumptions embodied in this 2020-21 RE Plan.

Section 2 – Introduction

Public Service Company of Colorado's 2020-21 RE Plan is comprised of three attachments. Attachment JW1-1 contains a narrative that describes the details of the Company's proposals for complying with the Commission's rules implementing the RES, 4 CCR 723-3-3650 *et seq.* Attachment JW1-2 contains the tables that are referenced in Attachment JW1-1. Attachment JW1-3 contains the Solar*Rewards® and Solar*Rewards Community® RFPs and contracts, and interconnection agreements.

The first part of Attachment JW1-1 is divided into 11 sections, which provide all the information required by Commission Rule 3657:

- **Section 1** Executive Summary.
- **Section 2** Introduction.
- **Section 3** Retail Energy Forecast. This section describes Public Service's retail energy forecast used to estimate the Company's retail electricity sales from 2019 through 2030. Rule 3657(b)(IV).
- **Section 4** Estimates of Existing and Forecasted RECs. This section describes the Company's estimates of the RECs that the Company must acquire to meet the RES, and describes the Company's projected transfer of RECs to its wholesale customers, RECs which are projected to be retired on behalf of the Windsource® customers, and RECs which are projected to be sold in the market. This section focuses on the years 2019 through 2021, but also provides longer-range projections of RECs needed through 2029. Rules 3657(b)(V), 3657(b)(VII), and 3657(b)(XV).
- **Section 5** Acquisition Plans. This Section describes Public Service's plans to acquire eligible energy from various categories of solar and non-solar resources, divided into subparts for each resource type. Rules 3657(b)(VII), (VIII), (IX), (X), (XI), (XII), (XIII), and (XIV). This section of the Plan also includes the acquisition of solar resources for the Solar*Rewards

Community® program including minimum and maximum recommended amounts.

- **Section 6** Other Customer Choice Products. This section discusses how Recycled Energy, Renewable*Connect®, and Windsorce® programs fit into the Public Service portfolio of renewable resources. This section includes features of the programs and explains the premiums we propose to charge for these services.
- **Section 7** Retail Rate Impact. This section discusses the retail rate impact of the Company's projection of the costs of acquiring the proposed Eligible Energy Resources through 2029. Rules 3657(b)(I), (II), and (III).
- **Section 8** Cost Recovery. This section describes the cost recovery mechanism proposed by the Company associated with the cost of implementing the RES within the retail rate impact cap. This section establishes the funds the Company proposes to loan the RESA in advance of customer recovery. Rule 3657(b)(VI).
- **Section 9** Net Metering. This section describes anticipated net metering requirements in 2020 pursuant to Rule 3657(b)(XVI).
- **Section 10** Interconnection. This section explains that the Company is not proposing any changes to its interconnection procedures under Rule 3667.
- **Section 11** Conclusion. This section presents the approvals the Company is seeking as part of the 2020-21 RE Plan including the various elements presented in the Plan. Rule 3657(c).

Section 3 – Retail Energy Forecast

For its 2020-21 RE Plan, Public Service is using its most recent retail energy forecast, which was developed in March of 2019.

Forecast Methodology

Public Service uses monthly historical customer and sales data by rate class, together with historical and forecast weather, economic, demographic, price, and appliance saturation and efficiency data to develop its forecast of energy sales. The residential sales and commercial and industrial sales forecasts are developed using a Statistically-Adjusted End-Use (“SAE”) modeling approach. The SAE method entails specifying energy use as a function of the primary end-use variables (heating, cooling, and base use). The factors that affect these end-use energy requirements include price, economic and demographic variables, weather, and appliance saturation and efficiency indices.

Forecasts for sales to resale customers are developed using information from the customers and trend analysis or contractual requirements. The wholesale sales forecasts are net of the contractual schedules of energy allocations from Western Area Power Administration (“WAPA”).

The historical customer, sales, and price data are obtained from the Company’s billing system. Forecasted economic and demographic data are obtained from IHS Markit. Historical and forecasted appliance saturation and efficiency data is obtained through studies conducted by the Company and from Itron, Inc.

Forecast Overview

From 2009 through 2018, Public Service experienced historical growth in retail electric sales, averaging 0.3 percent per year. This growth was driven by an increase in the number of customers and expansion of natural resource-based industries throughout its service territory, somewhat off-set by lighting efficiency gains, Demand-Side Management (“DSM”), and DG solar. Public Service’s combined annual retail and long-

term firm wholesale electric sales decreased at an average rate of -1.0 percent over the past 10 years. The negative historical growth rate reflects increases in retail sales being more than offset by large declines in wholesale sales due to the expiration of resale contracts. This loss of wholesale customers has stabilized in the last several years.

Public Service's retail electric sales are forecasted to increase at an average annual rate of 0.5 percent through 2030, while combined annual retail and long-term firm wholesale electric sales are projected to grow at 0.7 percent per year on average through 2030. The projected growth rate in retail electric sales reflects continued residential and commercial customer growth, along with increasing sales due to electric vehicles. This growth is, in turn, offset by: the implementation of federal energy efficiency standards; the inclusion in the energy sales forecast the assumption that we will achieve the 2019-2023 DSM goals of 500 gigawatt-hours per year that the Commission ordered in Proceeding No. 17A-0462EG, Decision No. C18-0417; the continued installation of customer-sited solar generation; and loss of load due to a large customer installing Combined Heat and Power operations at its facilities.

Details of the March 2019 Energy Sales Forecast

The results of Public Service's projected growth rate can be explained by several factors: 1) retail customer growth, which is projected to grow at an average annual rate of 1.0 percent through 2030; 2) the implementation of federal energy efficiency initiatives (including further lighting standards); 3) the inclusion in the energy sales forecast the assumption that we will achieve the 2019-2023 DSM goals of 500 gigawatt-hours per year that the Commission ordered in Proceeding No. 17A-0462EG, Decision No. C18-0417; 4) reduced volumes resulting from the installation of customer-sited solar generation; and 5) increasing penetration of electric vehicles. The combination of these factors results in an expected growth in energy sales that is slightly higher than historical growth.

Residential energy sales increased by an average of 0.6 percent per year over the past 10 years, with customer growth averaging 1.1 percent per year and use per customer decreasing at an average annual rate of -0.5 percent since 2009. This customer growth is expected to continue, with annual gains averaging 1.1 percent per year through 2030. Use per customer is expected to increase at an average annual rate of 0.2 percent through 2030. The increase in use per customer is due to the increasing penetration of electric vehicles, somewhat off-set by the implementation of federal energy efficiency initiatives; the achievement of DSM goals; and reduced volumes resulting from the installation of customer-sited solar generation. As a result, residential sales are forecasted to increase at 1.4 percent per year on average through 2030.

Commercial and industrial sales are projected to increase at an average annual rate of 0.05 percent through 2030, which is slightly slower than the average growth of 0.2 percent per year since 2009. The slower forecasted growth is primarily due to: the achievement of DSM goals; the implementation of federal energy efficiency initiatives that reduce lighting-related usage; and reduced volumes resulting from the installation of customer-sited solar generation.

Over the past 10 years, total long-term firm resale sales decreased by -10.5 percent per year on average. This negative rate reflects the expiration of some wholesale contracts. Through 2030, long-term firm resale sales are expected to increase by 2.9 percent per year on average. Public Service's combined retail and long-term firm wholesale electric sales are projected to grow at 0.7 percent per year on average through 2030.

The Company's energy forecasts are depicted graphically in Figure 1 and in tabular form in Table 1.

Figure 1: Actual and Forecasted Electric Sales (GWh)

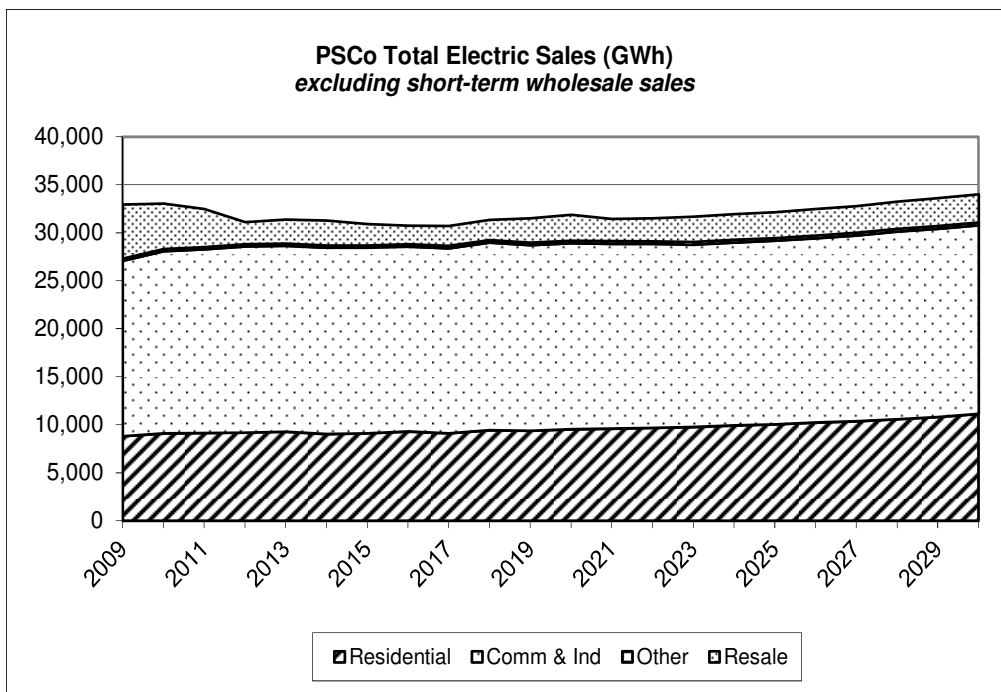


Table 2: Actual and Forecasted Electric Sales (GWh)

Year	Retail Sales	Long-Term Firm Wholesale Sales	Total Sales
2008	28,271	6,270	34,542
2009	27,279	5,678	32,957
2010	28,299	4,713	33,011
2011	28,486	3,993	32,479
2012	28,786	2,319	31,105
2013	28,861	2,511	31,373
2014	28,671	2,613	31,284
2015	28,700	2,192	30,891
2016	28,801	1,939	30,740
2017	28,629	2,086	30,715
2018	29,249	2,077	31,326
2019	28,976	2,529	31,504
2020	29,185	2,666	31,851
2021	29,119	2,337	31,456
2022	29,110	2,389	31,499
2023	29,067	2,622	31,689
2024	29,277	2,663	31,940
2025	29,448	2,700	32,148
2026	29,709	2,749	32,458
2027	29,977	2,789	32,766
2028	30,419	2,833	33,252
2029	30,694	2,886	33,580
2030	31,070	2,933	34,004

Note: Values above the heavy line are actual historical values; values below the line are forecast

Section 4 – Estimates of Existing and Forecasted RECs

Renewable Energy Standard

Under Commission Rule 3654, Public Service is required to procure RECs to meet the RES. Generally, one REC results from one megawatt-hour of electric energy generated from an eligible energy resource.² The RES is based upon percentages of the QRU annual retail energy sales. The RES has three requirements, which are summarized below.

In 2010, the General Assembly passed HB 10-1001 that increased the Colorado RES to require a QRU to generate or cause to be generated minimum amounts of electricity from eligible energy resources equating to 30 percent of its electric sales by 2020. HB 10-1001 also eliminated the solar standard that had originally been established by Ballot Amendment 37 (2004) and instead established a requirement that a portion of the 30 percent RES be met with Renewable DG. The DG requirement was divided between Wholesale DG and Retail DG; Retail DG is a renewable resource located on the customer's site and interconnected on the customer's side of the utility's meter. By statute, it is limited in size to 120 percent of the customer's annual electric load. Wholesale DG is defined as a renewable resource with a nameplate rating of 30 MW or less and does not qualify as Retail DG. Table 1 presents the annual RES requirements by year.

² Under certain circumstances multipliers are allowed which increase the number of RECs per MWh.

Table 3: Renewable Energy Standard

Period	RES	Distributed Generation (DG)	Retail Distributed Generation (Minimum Requirement)
2015 – 2016	20% of retail sales	1.75% of retail sales	Half of DG
2017 – 2019	20% of retail sales	2% of retail sales	Half of DG
2020 and beyond	30% of retail sales	3% of retail sales	Half of DG

Table 4-1, in Attachment JW1-2, shows the total RECs Public Service needs to meet the RES for each year 2019 through 2030, based upon the Company’s March 2019 retail energy sales forecast. Additionally, Table 4-1 reflects the number of Retail DG, Wholesale DG and Non-DG RECs required each year.

Table 4-2, in Attachment JW1-2, provides detailed information about: the RECs Public Service has already acquired; the RECs the Company plans to acquire for 2020 through 2021 and the RECs Public Service anticipates retiring to comply with the 2020 – 2021 RES³. The Tables show the sources of RECs and RECs produced. Specifically, Table 4-2 shows the RECs needed by the end of 2020 and 2021 for compliance based on the Company’s March 2019 sales forecast. Table 4-3 shows REC transfers, wholesale REC allocation, the RECs retired on behalf of Windsource® customers, the RECs retired on behalf of Renewable*Connect, and the RECs sold. Table 4-4, in Attachment JW1-2 provides information on the RECs Public Service plans to acquire through 2029 based on the 2020-21 RE Plan. Table 4-5 in Attachment JW1-2 shows the RECs from a new solar facility for the Company’s Renewable*Connect program.

³ The Company does not project any Recycled Energy contributions to compliance until such time as we have actual projects authorized under the program.

Wholesale Customers

In addition to meeting its RES, Public Service must plan for the transfer of RECs to its wholesale customers based upon each wholesale customer's load ratio share of Public Service's total retail and wholesale sales. The load met through the Company's Solar*Rewards or new Solar*Rewards Community programs is not included in the calculation of the load ratio shares of our wholesale customers.

Public Service offered load-ratio shares of its non-Retail DG RECs, to six wholesale customers: Grand Valley Rural Power Lines, Inc. ("Grand Valley"); Holy Cross Electric Association, Inc. ("Holy Cross"); Yampa Valley Electric Association, Inc. ("Yampa Valley"); Intermountain Rural Electric Association ("IREA"); City of Burlington; and Town of Center.

For the 2020-21 RE Plan Grand Valley, Holy Cross, Yampa Valley, IREA, and the City of Burlington have agreed to pay for the acquisition of non-Retail DG eligible energy resources and receive their load ratio share of RECs accordingly. At the time of this filing The City of Center does not receive RECs from Public Service.

Table 4-3 in Attachment JW1-2 shows the forecasted REC transfers for those wholesale customers electing to pay the full costs of their load ratio share of the Non-Retail DG eligible energy resources. The transferred RECs will not be available to Public Service to meet the RES.

Windsor[®] Sales

Currently, the Company is offering the Windsor[®] product pursuant to terms the Commission approved in Proceeding No. 13A-0836E. Those terms recognize that a Windsor[®] customer who purchases 100 percent of their energy from Windsor[®] is already receiving a percentage of their energy from resources that meet the RES requirements. In 2020-2021 that percentage is 20 percent. Therefore, for those customers who purchase 100 percent of their energy through Windsor[®] in 2020-
2021, RECs equal to 20 percent of the energy sales to those customers are retired to

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meet the RES. This method of REC accounting is in accordance with Green-e Standards. Windsource® customers are notified in the Windsource® Summary of Prices, Terms and Conditions that a portion of Windsource® sales are retired for RES compliance. From Proceeding No. 16A-0139E the Windsource® premium price is \$1.50 per 100 kilowatt-hour block, or 1.5¢/kWh.

Applicable RES Rules

Commission Rule 3654 permits a QRU to count eligible energy generated on or after January 1, 2004 for compliance with the RES. The Rule also contains a carry forward provision that permits a REC to be retired for RES compliance in the year that the energy is generated or for five years following the year in which it was generated.

Commission Rule 3654(g) currently provides for a 25 percent “bonus” for each kilowatt-hour of eligible energy generated in Colorado. The sole exception is Retail DG, where the in-state bonus only applies to purchase transactions entered into prior to August 11, 2010. Also, Rule 3654(h) provides for a 50 percent “bonus” for each kilowatt-hour of eligible energy generated from a Community-Based project, which means that Community-Based project generated RECs count as 1.5 RECs for RES compliance. However, for each kilowatt-hour of eligible energy, a QRU may take advantage of only one of the compliance multipliers. The Company applies a 1.25 REC bonus to qualified resources. Senate Bill 13-252 enacted by the 2013 General restricts the resources eligible for the 1.25 bonus multiplier to all Non-Retail DG resources that were in-service prior to January 1, 2015.

Tracking of RECs

On December 30, 2010, Commission Rule 3659(j) became effective. The Rule requires that all generators larger than 1 MW be registered and create REC certificates with the Western Renewable Energy Generation Information System (“WREGIS”). As of November 1, 2010, all on-site solar systems greater than 1 MW are tracked in WREGIS. Retirement of RECs for RES compliance occurs in WREGIS once the banked inventory of RECs created from generation occurring prior to WREGIS registration have been retired or transferred to a third party.

Retail DG systems smaller than 1 MW have been and will continue to be tracked in the Company's REC tracking system. WREGIS currently requires revenue-quality meter data for all classes of generators, including customer-sited distributed generation; therefore, the on-site solar systems installed before March 23, 2011, of 10 kW or less, that are customer owned that do not have a production meter cannot currently be registered in WREGIS. The number of RECs generated from Retail DG solar systems of 10 kW or less that were acquired prior to March 23, 2011, are determined by the PVWATTS program in place at the time the system was placed under contract. The number of RECs generated from for all other Retail DG systems are calculated based on meter data.

Plan to Meet RES Requirements

A. Non-DG RECs

Table 4-2 provides the Company's projections for the Non-DG RECs it will have from 2020 through 2021. Public Service will meet its 2020 and 2021 Non-DG RES requirements with Non-DG RECs carried forward from prior years.

B. Wholesale DG RECs

Table 4-2 provides the Wholesale DG resources and associated RECs we forecast we will have to meet the 2020 – 2021 Wholesale DG RES requirements. Public Service will meet its 2020 – 2021 Wholesale DG RES requirements with Wholesale DG RECs carried forward from prior years.

C. Retail DG RECs

As shown on Table 4-2, based on its proposed acquisition plan, Public Service will have sufficient Retail DG RECs to meet the 2020 – 2021 RES requirements using RECs carried forward from prior years.

Short-Term Forecast of RES Compliance

Table 4-2, in Attachment JW1-2, projects Public Service's acquisition and retirement of RECs for compliance with the 2020-2021 RES requirements based on electric retail sales as shown in Table 4-1. All of the RECs carried forward and acquired for purposes of meeting the RES, with the exception of the RECs transferred, sold, or retired for either Windsource® or Renewable*Connect, are eligible to be counted for RES compliance.

Table 4-2 summarizes Public Service's forecasted REC position for 2020 – 2021 RES compliance. Table 4-2 summarizes, by source (including "bonus" RECs): the RECs carried forward from past years; the expected acquisition of RECs; the expected retirement of RECs for compliance; and the RECs that Public Service forecasts it will have available to carry forward to future years.

Long-Range Forecast of RES Sources

Table 4-4, in Attachment JW1-2, sets forth Public Service's long-range plan for the acquisition of RECs through 2029 based on the resources in the 2020 RES Plan.

The plan is based upon the RECs the Company has acquired from existing eligible energy resources, including resources acquired through the Company's Solar*Rewards and Solar*Rewards Community programs. Table 4-4 shows only the RECs that the Company expects to acquire -- including the projected bonuses allowed by the RES Rules -- net of transfers each year. Table 4-4 does not show the impact on the REC balance of the carry forward provisions in the Commission's RES Rules.

Public Service will acquire Retail DG RECs through its Small, Medium, and Large Solar*Rewards programs and through the Company's Solar*Rewards Community standard offers and competitive bids (Column A). The RECs retired for Windsource® or Renewable*Connect are presented in Column B. Column C provides a place for the Company to reflect the RECs it forecasts it will sell, prior to the application of the 25 percent "bonus," that number is 0 in column C because at the time of this filing the

Company does have contracts to sell Retail DG RECs. HB 10-1001 removed the “bonus” application for Solar*Rewards for transactions entered into after August 11, 2010, but HB 10-1001 grandfathered Retail DG RECs prior to this date (Column D). We have a column for the incremental 25 percent bonus (above the in-state bonus) that is provided by Community-Based RECs in Column E, should future projects be considered Community-Based. Currently, our REC forecast does not include the multiplier of 1.5 for Solar*Rewards Community. The total Retail DG RECs that we project are set forth in Column F.

Columns G through L of Table 4-4 show the projections of the Wholesale DG RECs that the Company proposes to acquire through 2029, the projections of REC retirements on behalf of Windsource® or Renewable*Connect customers and REC sales. In Table 4-4, all of the Wholesale DG RECs are assumed to qualify for the 1.25 bonus and none of the Wholesale DG RECs are assumed to qualify for the Community-Based bonus. Table 4-4 does not show the impact of the carry forward provision in the RES Rules.

Table 4-4, Columns M through R show the Non-DG RECs that Public Service estimates will be produced through 2029 and the projections for Windsource® retirements, Renewable*Connect retirements, and REC sales. The sources of these RECs are eligible energy resources owned by the Company and purchases from eligible energy resources. These projections do not account for the carry forward provision in the RES Rules.

Column A in Table 4-5, shows RECs from the 50 MW Titan solar facility that serves our Renewable*Connect program. The Company retires 100 percent of the RECs from the facility on behalf of the customers that subscribe to the program.

Section 5 – Acquisition Plans

This section describes the acquisition of renewable energy resources for all categories of renewable energy: Non-Distributed DG, Wholesale DG and Retail DG. By definition, renewable resources greater than 30 MW are considered to be Non-Distributed Generation, while renewable resources 30 MW or less are considered to be either Wholesale DG (not customer-sited) or Retail DG (customer-sited, including CSGs).

Non-Distributed Generation

Public Service will have sufficient Non-DG RECs to meet the RES in 2020 and 2021 as a result of acquiring wind and solar generation under our ERPs since 2005, the Rush Creek Wind Project, and other wind generation contractually acquired by the Company. Public Service also projects it will have sufficient Non-DG RECs from existing Eligible Energy Resources for compliance through the full 10-year planning horizon under the current Commission RES rules.

This Plan does not address the acquisition of incremental Non-DG resources. The Company's retail rate impact results presented in Tables 7-2(a) through 7-2(c) include all Non-DG resources utilized to meet the Company's Non-DG REC compliance requirements. For the 2020 Compliance Year, the Company will have 3,103 MW (name plate) of Non-DG wind serving the Company system and 220 MW (name plate) capacity of Non-DG solar.

Wholesale Distributed Generation

The Company has a number of Wholesale DG resources serving the load needs of our customers. Rule 3652(II) provides the Commission definition of Wholesale DG, which includes renewable energy resources located in Colorado with a nameplate rating of 30 MW or less that do not qualify as Retail DG. The Wholesale DG resources, as listed in Table 4-2, include 59 MW of small hydro facilities, 23 MW wind, 85 MW solar and 3 MW of biomass. As a result of renewable resources acquired under previous RFPs, as well

as other generation previously owned or contractually acquired by the Company, Public Service will have sufficient Wholesale DG RECs to meet the RES for the 2020 through 2021 Compliance Years. In addition, Public Service projects it will have sufficient Wholesale DG RECs from existing Eligible Energy Resources for the full planning horizon under the 2020–2021 RE Plan.

Retail Distributed Generation

A. Retail REC Acquisition

Tables 4-2 through 4-4, provided in Attachment JW1-2 of the 2020-21 RE Plan, set forth the projected totals for standard offer RECs and other REC purchases. RECs are presented by market segments: Solar*Rewards® Small (0.5-25 kW), Solar*Rewards® Medium (25.1-500.0 kW), Solar*Rewards® Large (>500.0 kW), Rooftop Low-income Solar, and Solar*Rewards Community® projects. RECs listed as “REC Only” are for those customer-sited roof-top solar systems installed prior to 2006 that were located outside of Public Service’s service territory and used for early small-system RES compliance.

B. Goals for Retail DG

As of December 31, 2018, the Company has nearly 400 MW of Colorado on-site solar installations connected to the system as reflected in Attachment JW1-2, Table 4-2. This includes Solar*Rewards® and Net Energy Metering Only solar installations. The Solar*Rewards® connections are expected to generate over 400,000 RECs annually while solar garden installations installed through 2018 could produce up to 100,000 RECs annually.

The Company will have sufficient Retail DG RECs for Compliance in 2020 and 2021. The acquisition of Retail DG RECs for 2018 through 2021 is set forth in Attachment JW1-2, Tables 4-2, 4-3, and 4-4. The Company’s forecast of Retail Rate Impact and estimated RESA balance are presented in Attachment JW1-2, Tables 7-1 through 7-2(c). The forecasts of RESA expenditures presented in these tables are based upon the

maximum forecast capacity additions proposed in 2020 and 2021. The anticipated costs of our proposed programs are included in the On-Site Solar Costs (which include Solar*Rewards Community) set forth in Attachment JW1-2, Tables 7-2(a), (b) and (c).

On-Site Solar: Solar*Rewards® and Net Energy Metering Only

Solar*Rewards® continues to be a chosen by many customers each year. However, Net Energy Metering Only interconnections saw a notable increase between the start of the 2017-19 RE Plan and today. In 2016, the Commission issued Decision No. C16-1075 (as part of the “Three-Case Settlement” Agreement in consolidated Proceeding Nos. 16AL-0048E, 16A-005E, and 16A-0139E), which set annual capacity limits of 24 MW for the Solar*Rewards® Small offering (Option A) and Solar*Rewards® Medium offering annual capacity limits of 24 MW for 2017 through 2019. The Solar*Rewards® Small offering (Option B) had increasing annual capacity limits of 9, 18, and 24 MW in 2017, 2018, and 2019 respectively. A Solar*Rewards® Large offering RFP was included in the 2017-19 RE Plan for 6, 10, and 14 MW each year. As part of the Three Case Settlement, parties agreed to establish a new Rooftop Low-income Solar program with an estimated cap of 1.05 MW, based on project count and size, between 2017-2019. Table 1, below, provides a summary view of the Company’s 2017-2019 Solar*Rewards® Acquisition Plan:

Table 4 – 2017 to 2019 Solar*Rewards® Acquisition Plan (MW)

Offering	2017 Capacity	2018 Capacity	2019 Capacity	Total 2017-19 RE Plan Capacity
Small Option A	24	24	24	123
Small Option B	9	18	24	
Medium	24	24	24	72
Large	6	10	14	30

Consistent with this decision, Public Service offered these capacities at a rate of 2 MW per month for Solar*Rewards® Small, 6 MW per quarter for Solar*Rewards® Medium, and one competitive solicitation for Solar*Rewards Large projects per year.

**A. Solar*Rewards Acquisition and Pricing
 Recommended Plan**

The Company’s Plan strives to facilitate solar options for our customers, while balancing the costs all customers pay. In this 2020-21 RE Plan, Public Service proposes to continue manageable growth of the capacity available for the various customer choice programs it offers. Table 2 provides a summary view of the Solar*Rewards® and Solar*Rewards Community® program offerings with a more detailed discussion of each option below the table.

Table 5 – 2020 to 2021 Solar*Rewards® Acquisition Plan (MW)

Offering	2017-2019	2020	2021	Total RE Plan
	Avg. Capacity (MW)	Capacity (MW)	Capacity (MW)	Capacity (MW)
Solar*Rewards® Small (≤25 kW)	24	12	12	24
Solar*Rewards® Medium (25 to ≤500 kW)	24	20	20	40
Solar*Rewards® Large RFP (>500 kW)	10	20	20	40
Rooftop Low-income Solar (CEO) (≤3.5 kW)*	0.35	0.35	0.35	.7
TOTAL ON-SITE SOLAR*REWARDS	58.35	52.4	52.4	104.7
Uncapped (net-metered only) solar (projected)**	20	32	32	64
TOTAL ON-SITE SOLAR PROJECTIONS	78.35	84.4	84.4	168.7
General Solar*Rewards Community® RFP (Max)***	35	35	35	70
Low-income Solar*Rewards Community® RFP	4	4	4	8
Solar*Rewards Community® Standard Offer (Low-income + General)****	1	5	5	10
Low-income Solar*Rewards Community® Company Offered	2	4	4	8
TOTAL SOLAR*REWARDS COMMUNITY	41	48	48	96
TOTAL SOLAR*REWARDS - ALL OFFERINGS	99.35	100.4	100.4	200.7
TOTAL ON-SITE SOLAR PROJECTIONS - ALL TYPES	119.35	132.4	132.4	264.7
*The 2017-2019 RE Plan target 300 projects, at 3.5 kW each, over three years, which equals 0.35 MW per year.				
** Net Metered Only system capacity is not governed by this Plan; numbers shown to illustrate potential Net Meter Only solar applications based on historic trends that may change in the future. 32 MW is the Net Meter Only capacity installed during 2018.				
***Minimum and maximum annual awards to be determined during award solicitation and evaluation. Recommended minimum capacity for S*RC is 15 MW per year.				
****The 1 MW of Standard Offer CSGs (standard + Low-income), Company-Offered CSGs and Standard CSG RFP capacity are included in the 35 MW of S*RC capacity in the 2017-19 Plan. This Plan specifies the totals individually for clarity.				
****The Company proposes to continue the low-income Standard Offer at the same level, 0.5 MW, as under the 2017-19 RE Plan.				

As discussed earlier, without any incremental additions the Company will exceed its compliance requirement for Retail DG in Compliance Year 2020 and 2021. These offerings are consistent with the requirements set forth in Colorado law to develop and utilize renewable energy resources to the maximum practicable extent.

The Company proposes to continue current pricing for the standard REC incentive amounts for the Small, Medium, and Rooftop Low-Income offerings, as set forth in Table 3 below.

Table 6 – Solar*Rewards® REC Purchase Plan

Year	Small Offering	Medium Offering	Rooftop Low-income*
2020	\$0.005/kWh	\$0.0375/kWh	\$0.034/kWh
2021	\$0.005/kWh	\$0.0375/kWh	\$0.034/kWh

*The Rooftop Low-income option will include an upfront incentive of \$2.00 per watt paid in a lump sum after interconnection.

For the Solar*Rewards® Large offering, pricing will be determined through a competitive RFP solicitation to be issued after approval of the Plan. The Company will issue the RFP in each of the Plan years to acquire up to the proposed levels of annual capacity. Like other RFPs the Company has offered, criteria include (but are not limited to) price and developer performance in scoring the respondents' bids.

As discussed below, the Company's recommended Plan strikes a balance between the needs of participants, the solar industry, and non-participants.

B. Solar*Rewards® Program Changes

Customer demand, technology costs, state policy, and other attributes in the on-site solar market continue to evolve. In an effort to adapt to anticipated market changes based on recent trends, notable changes in the 2020-21 RE Plan include:

- Decrease Solar*Rewards® Small capacity from 24 to 12 MW per year due to diminishing customer interest in the Solar*Rewards® Small incentives, and the movement toward installing small Net Energy Metering Only systems outside of the Solar*Rewards® program. This capacity aligns with the two-year average from 2017 and 2018 and exceeds the 2018 allocated capacity of 8 MW.
- Discontinue Solar*Rewards® Small Option B due to lack of customer interest.

- Decrease Solar*Rewards® Medium capacity from 24 to 20 MW per year to align with current market demand, while increasing opportunities for similarly sized solar projects in the Solar*Rewards Community® Standard Offer option.
- Increase Solar*Rewards® Large RFP capacity from 14 in 2019 to 20 MW per year to support larger customers who are exploring on-site solar energy production.
- Continue to offer the Rooftop Low-income Solar program that was started in 2017. We propose a program capacity of 0.35 MW per Plan year, rather than setting maximums by project count.
- Update the deposit forfeiture structure for the Solar*Rewards® Small, Medium, Large offerings and Solar*Reward Community. This encourages project completion in a reasonable amount of time, while providing options for extenuating circumstances.
- Extend the deadlines for installation of projects in the Solar*Rewards® Small, Medium, and Large offerings. This provides more time for larger projects to meet previous deadlines.

C. Program Details

1) Solar*Rewards® Small (Systems 0.5 kW to 25.0 kW)

The Solar*Rewards® Small offering will have 12 MW of capacity available on an annual basis, while continuing the performance-based incentive (“PBI”) REC incentive of \$0.005/kWh for 2020 and 2021.

All participants in the Solar*Rewards® Small offering will enter into a contract with the Company to generate solar energy for a term of 20 years with a PBI payment stream over that 20-year period paid based on actual production.

Solar*Rewards® Medium (Systems >25 kW to 500kW)

Capacity for the Medium offering will be 20 MW per year, with an incentive of \$0.0375 per kWh. This results in 40 MW of capacity available over the two-year plan period. The incentive is not proposed to change from 2019 levels.

For all participants in the Medium option, the end-use customer will enter into a contract with the Company to generate solar energy for a term of 20 years with a PBI payment stream over that 20-year period paid based on actual production.

Solar*Rewards® Large (RFP) (Systems greater than 500 kW)

The Solar*Rewards® Large option was offered in 2017 through 2019 for the first time since 2012 and participation was healthy. In an effort to meet a diverse mix of potential customer demand, the Plan includes 20 MW of capacity per year, in 2020 and 2021, offered through an annual competitive solicitation.

For all bid winners in the Solar*Rewards® Large offering, the end-use customer will enter into a contract with the Company to generate solar energy for a term of 20 years with a PBI payment stream over that 20-year period paid based on actual production. The incentive levels will be set by customer participants through an RFP each year. After a complete review of the RFP is conducted, projects will be awarded to the bid winners and are subject to completion within 18 months, with an optional extension to 24 months upon request. The requester must meet the minimum bid eligibility requirements to be considered for the RFP. Proposals that do not comply with the minimum requirements of the RFP will be deemed ineligible and will not be considered for further evaluation. A complete proposal will include the following three components: (1) an executive summary, (2) complete set of applicable forms, and (3) narrative topics discussion. Evaluation screening will also include an assessment of cost factors and potential technical challenges.

Once a bidder is notified of an accepted bid they will have 30 calendar days to submit: (1) a letter from the proposed retailer indicating their agreement to go forward with the project citing specific address and system size; (2) A deposit of \$10,000 per MW. Once a bidder has been notified that a bid has been accepted, the project location, interconnection premise, and retail customer cannot be changed. If the post-bid requirements are not fulfilled, the bid will be considered abandoned.

Rooftop Low-income Solar

The Rooftop Low-income Solar program will be marketed and coordinated by the Colorado Energy Office (“CEO”), who will install rooftop solar PV on qualified low-income-occupied dwellings located within the Company’s service area. The program maintain annual capacity size of 0.35 MW in 2020 and 2021 (approximately 100 projects per year), through a PBI REC purchase of \$0.034/kWh for 2020 and 2021, plus an upfront incentive of \$2.00/watt paid to CEO. CEO may leverage additional funds from organizations other than Public Service to cover the cost of the solar installations. The total of all leveraged funds shall not exceed the actual installed cost for each system.

CEO will analyze participation metrics to ensure that participating premises are low-income homes with a high probability of remaining low-income occupied for the useful life of the PV system, and where low-income inhabitants will reap the highest benefits from a solar PV system. This includes:

- A preference for non-profit owned properties or housing providers with long-term agreements to serve low-income customers;
- Homes with solar capacity factors of 14 percent or higher;
- Customers with high average electricity use; and/or
- Customers without access to low-income CSG offerings.

CEO will provide an annual summary of the Rooftop Low-income Solar program to be included in the Company's annual RES Report, 30 days prior to the due date of the RES Report. The report shall include the following:

- A description with specificity of how the program has met the objectives of reducing bills for participating low-income customers and how the program has increased access to distributed generation for these customers.
- The total number of rooftop solar systems that serve low-income residents installed under this program, and the subtotals of installations on: (a) customer-owned premises; (b) non-profit owned properties; and (c) by housing providers. For the latter, the report shall include detail concerning the length of the long-term low-income occupancy agreements.
- The average contribution per customer from RESA funds and additional supporting funds received outside of Public Service that are utilized to install DG including the Savings to Investment Ratio as defined by the Department of Energy.
- Information by zip code concerning: (a) the number of low-income customers that have had rooftop solar installed; and (b) the number of low-income customers eligible for receiving weatherization.

Solar*Rewards® Capacity Application & Reservation Parameters

The Company will continue will continue to proactively notify developers and publically post when the offerings will open, the amount of capacity that will be made available, and when all capacity has been reserved. This system enables customers to have the opportunity to participate in Solar*Rewards® throughout the year and allows the option to stay open all year. Any unsubscribed capacity, including from cancelled projects, will carry forward within the calendar year, but not from year to year.

The Solar*Rewards® project application portal and application deposit fee are designed to encourage accurate, viable applications, and to assist the Company and other interested parties in maintaining an accurate queue of projects. Each Solar*Rewards®

project size segment aligns the deposit and project deadlines with a similar methodology but different amounts to account for the project size and complexity.

- All applications submitted for Solar*Rewards® Small must include a \$250 deposit and are subject to completion within 12 months. Any project that is not completed within the 12-month period can request an extension for up to six additional months (18 months total). If the project is not complete after 18 months, the application will be cancelled and the applicant must submit a new application for the then-current incentive level and pay a new deposit fee.
- All applications submitted for Solar*Rewards® Medium must include a \$1,500 deposit and are subject to completion within 18 months. Any project that is not completed within the 18-month period can request an extension of up to six additional months (24 months total). After the 18-month deadline, the deposit will be entirely forfeited to the RESA. If the project is not complete after 24 months, the application will be cancelled and the applicant must submit a new application for the then-current incentive level and pay a new deposit fee.
- All awarded applications for Solar*Rewards® Large start with the written response accepting the award from Public Service and must pay a deposit of \$10,000 per MW. Projects must be completed within 18 months from the award date. Any project that is not completed within the 18-month period can request an extension of up to six additional months (24 months total). After the 18-month deadline, the deposit will be forfeited to the RESA at a rate of the total deposit divided by 180 calendar days. If the project is not complete after 24 months from the initial award, the deposit will be entirely forfeited to the RESA and the application will be cancelled.

For the Solar*Rewards® Small and Medium offerings, changes are allowed to the systems nameplate capacity for a total variance of +/- 10 percent up until the contracts have been signed by any party, so long as any additional capacity is within the maximums allowed by statute and this option. Any system that varies beyond the 10

percent level after initial submission may be canceled and required to reapply. Deposits and fees will not be transferable and new fees will need to be submitted. After award and deposit completion, but before contracts have been signed by any party, projects within the Solar*Rewards® Large offering are allowed to reduce project size beyond 10 percent without risk of project cancellation.

For the Solar*Rewards® Small, Medium, and Large offerings, plus Rooftop Low-income program, the Company will set two meters, a net energy meter and a dedicated production meter. The net energy meter will be used to record the amount of energy a customer will be charged for during the billing period. The production meter will be owned and maintained by the Company in order to accurately meter and credit customers for any generated RECs, while also providing information for distribution planning. The system owner of record will be assessed a monthly production metering fee based on the average embedded costs. The fee will be assessed based on the customer rate schedule and will be deducted from the monthly REC payment.

All net-metered customers, including Solar*Rewards® participants, have an option when it comes to excess energy credits at the end of the year. Customers have a one-time option to choose to roll excess monetized kWh credits over from year-to-year until the customer discontinues electric service, at which time the solar bank is “dissolved.” The other option is to have excess kWh credits “cashed-out” at the end of each calendar year, paid out at the Average Hourly Incremental Cost of electricity (“AHIC”). Upon discontinuing electric service, the customer is paid for any remaining excess energy for those who choose to be “cashed-out.”

The Solar*Rewards® retail customer is also able to elect to take service under the Company’s net metering tariff, in which case the retail customer who will receive any financial benefit of any excess electricity generation returned to the grid. Under Solar*Rewards®, excess electricity generation, the net metering incentive, will either be paid to the end-use customer within 60 days of the end of the calendar year (or termination of service), or will be rolled over to the next year, depending on the

customer's solar bank election. Per Colorado law, Solar*Rewards® PV system sizes cannot exceed more than 120 percent of the premise's average annual consumption.

Tracking Customer Participation in Solar*Rewards®

Public Service uses an online application and tracking system for administering the Small, Medium, and Large options as well as Net Energy Metering Only applications. Some aspects of the Large offering review may be administered outside of the online application system. The online system offers a public interface to the dataset that includes all on-site customer and system details needed to manage the applications.

Solar*Rewards® Contracts

Public Service maintains standardized "base form" Solar*Rewards® contracts containing terms and conditions that govern the Company's Small, Medium, and Large, and Rooftop Low-income Solar offerings and the exchange for RECs.

Volume III (Attachment JW1-3) contains the Company's form contracts associated with its 2020-21 RE Plan. The major areas of change can be summarized as follows:

- 1) Generally consolidate and conform multiple small edits that have been made over time;
- 2) Consolidate contracts into a smaller number of versions;
- 3) Align terms across programs for deposits, construction milestones, and project completion dates and address certain other operational matters that have arisen as programs have grown; and,
- 4) Clarify certain provisions specific to three-way agreements.

Also included in Attachment JW1-3 are the application forms, current standard agreements for the Company's programs under Rule 3658 and the standard agreements for interconnection of renewable energy resources pursuant to Rule 3667.

Contracts with Third-Party Developers

Applications for the Solar*Rewards® Small, Medium, and Large offerings are available to third-party developers to own and maintain installations on customer sites. Third-party developers are also allowed to participate in the Solar*Rewards Community®

program. As the owner/operator of the PV system, the third-party developer enters into the REC purchase contract with Public Service, along with the retail customer, and receives monthly REC payments for the sale of the RECs directly. Under this three-party REC purchase contract, the retail customer acknowledges and consents to the developer's obligations to operate and maintain the solar system on the customer's premises and to sell RECs to Public Service during the term of the contract. The developer makes arrangements directly with the end-use customer for the receipt of the electricity generation. As the equipment owner and/or party with operational control over the PV system, the developer is the party who enters into the Interconnection Agreement with Public Service.

B. Solar Gardens

2) Solar*Rewards Community® Program

Solar*Rewards Community® is a program that enables customers who cannot, or do not wish to participate, in the Solar*Rewards® program an opportunity to participate in a solar option. The program, which launched in August 2012, serves customers who purchase or lease portions of a solar garden installed in their community. Subscribing customers receive credits on their bill for the energy produced at a central location, avoiding the need to install solar on their premises. This program provides Public Service customers with more solar choices. Solar Energy Industry Association's 2018 *US Solar Market Insight* Report notes that Colorado is ranked fourth for cumulative solar garden installations by state, with the fifth highest installation volume in 2018.

As of December 31, 2018, 53.8 MW of solar garden projects were active in the Solar*Rewards Community® program. That was double the operational capacity from the year end 2017, which was nearly double capacity at year end 2016. This is growth is illustrated in Table 4 below, along with the currently awarded capacity from 2017 through 2019 which will lead to an additional 73 gardens for 119.8 MW to become active in less than two years. We anticipate that in 2019, up to 44.5 MW of solar gardens will enter the program through the Standard Offer and General RFP program

and Standard Offer segments, plus the Company-Offered Low-Income solar gardens (4 MW per year). The cumulative year-end 2018 active installations includes 9.4 MW from the Standard Offer program segment for projects between 10.0 kW and 500.0 kW, and 44.4 MW from the General RFP segment for projects between 500.1 kW and 2.0 MW. The 53.8 MW consisted of 48 solar gardens owned by several different developers and located throughout Public Service's territory.

Table 7 – Solar*Rewards Community® Awards & Operations Summary

	Pre-2017 (MW)	2017 (MW)	2018 (MW)	2019** (MW)
RES Plan Capacity (Annual)	22*	34	39	44
RES Plan Capacity (Cumulative)	108	142	181	225***
Awarded Capacity (Annual)	108	4.5	69.5	44
Awarded Capacity (Cumulative)	108	111.5	181	225***
Operational Capacity (Cumulative)	18.1	33.5	53.8	105.8

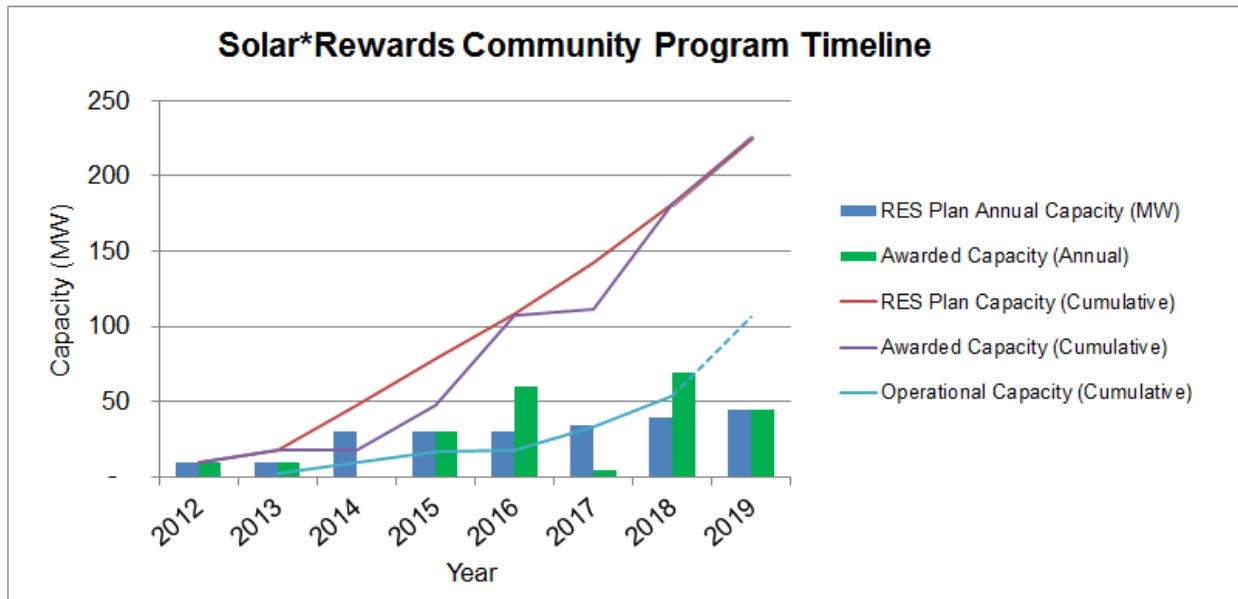
*22 MW is the annual average between 2012 and 2016

**2019 is projected and may change

***225 includes Company-offeree gardens

Because of the scale of solar garden installations, there is a relatively large lag in installations compared to the Plan period. During the 2017-19 RE Plan, there were several regulatory and resource delays that led to extended timeframes between when capacity was called for in the 2017-19 RE Plan and when actual capacity was released. This provided the solar industry with the clarity they needed to submit firm bids and proceed in a timely fashion once awards were complete. While this delayed capacity from coming online, all 2017-19 Plan RFPs are now complete and projects are proceeding, as shown in Figure 1 below.

Figure 2



3) Solar*Rewards Community® Acquisition

For the 2020-21 RE Plan years, the Solar*Rewards Community® program will offer to purchase the energy and RECs from qualified CSGs annually through the General RFP in the following amounts in Table 5:

Table 8 – Solar Rewards Community® Planned MW Acquisitions

Offering	2020 Capacity	2021 Capacity	Total Plan Capacity
Min Solar*Rewards Community® RFP***	15	15	30
Max Solar*Rewards Community® RFP***	35	35	70
Solar*Rewards Community® Low-income RFP	4	4	8
Solar*Rewards Community® Standard*Offer	5	5	10
Company-offered Solar Garden	4	4	8

***Minimum and maximum awards to be determined during annual award solicitation and evaluation.

These capacities have been developed by analyzing the market demand for capacity in past RFPs and analyzing the ability for developers to complete the awarded capacities within the program’s timelines.

4) Changes to Solar*Rewards Community®

Since the 2017-19 RE Plan, the Company has conducted stakeholder and sub-group sessions regarding the RFP solicitation and award process. The Company will continue these discussions semi-annually in an effort to continue to update and improve the RFP process.

Notable changes from the 2017-19 RE Plan include:

- Increase Standard Offer annual program capacity from 1 MW to 5 MW per year, while increasing the maximum project size from 100 kW to 500 kW, to align with solar industry and stakeholder feedback.
- Increase Company-offered program capacity from 2 to 4 MW per year in 2020 and 2021, with a low-income customer enrollment partnership with Energy

- Outreach Colorado, a REC incentive up to five cents per kWh, and a collaborative labor partnership under a Project Labor Agreement.
- Changes to the Solar*Rewards Community® General RFP solicitation and producer agreement to align with the program changes and business practices.

Public Service's base form contracts are included in Attachment JW1-3, Volume III of the 2020-21 RE Plan.

The Company recognizes that recent legislation passed by the Colorado General Assembly in 2019 includes several changes that impact CSGs in Colorado. Legislative updates include changes to the project size of solar gardens and rules about the location of the participants related to a CSG location.⁴ However, the Commission has not yet promulgated new rules to adopt these legislative changes. The Company's proposals in this Plan and Solar*Rewards Community agreements reflect current Commission rules. The Company expects to update its model contracts to comport with any upcoming rule changes, and the Company would comply with any Commission directive(s) to make changes prior to new rules becoming final.

5) Solar*Rewards Community® - General RFP Competitive Solicitation

The Company will competitively solicit between 15 MW up to 35 MW of installations annually. Additionally, a 4 MW RFP for 100% low-income serving gardens will be issued, each year. The information for the competitive solicitation will be available on the Company website⁵ after the 2020-21 RE Plan is approved by the Commission and the RFP will open in 2020 pending approval of the Plan.

⁴ See §§ 40-2-127(2)(b)(I)(D), C.R.S., and 40-2-127(2)(b)(II), C.R.S., (2019).

⁵ Xcel Energy Solar*Rewards Community® Developer Resources, available at https://www.xcelenergy.com/working_with_us/renewable_developer_resource_center/solar_rewards_community_developer_resources (last visited June 25, 2019).

6) Solar*Rewards Community® – Standard-Offer

The Company proposes to increase the capacity and project size for the Standard-Offer portion of the Solar*Rewards Community® program for projects sized between 10 and 500 kW. The Company proposes to consolidate the low-income standard offer into this offering due to lack of competitive pricing from that option. The capacity would increase to from 0.5 MW each from the Standard Offer and Low-Income Standard Offer (1 MW annually) to 5 MW annually. Additionally, the maximum project size offered will increase from 100 kW to 500 kW. The Standard-Offer segment will open after the award of projects through the RFP process and the incentive will be set \$0.02/ kWh above the average REC price of the winning bids from the solicitation.

7) Low-Income Company-Offered CSGs and Collaborative Labor Partnership

The Company proposes to modify its Company-offered CSG segment in several ways. First, the Company proposes to exclusively offer Company CSGs to 100 percent low-income customers. The Company will partner with Energy Outreach Colorado to manage customer subscriptions. Second, Public Service will develop this capacity using a collaborative labor partnership under a Project Labor Agreement (“PLA”), which the Company sees as a positive opportunity for Colorado trade laborers to gain valuable experience in constructing solar facilities. Finally, Public Service proposes to expand annual capacity to 4 MW per year in 2020 and 2021, to allow for a total of 8 MW of Company-offered gardens.

8) Solar*Rewards Community® Project Selection

Standard Offer

The applications in the Standard Offer will be approved on a first-come, first-serve basis so long as all application requirements and Commission rules pertaining to solar gardens are met. The Standard Offer will open after the General RFP competitive solicitation is complete and projects are selected. Vintages of the Standard Offer will

remain open until the earlier of when available capacity is awarded or the term of the 2020-21 RE Plan is complete.

General RFP Competitive Solicitation

The Company evaluates RFPs based on the criteria laid out in the bid proposals. Historically, bids have been awarded primarily on an economic basis, though sometimes developer experience, subscriber diversity, low-income commitments, location near an under-served area, unique commitments and other criteria have led to project awards that weren't solely based on economics, particularly when presented with economically similar bids. When bids are awarded based on non-economic factors, bidders are held to those factors for the life of the CSG as a condition of the award and resulting contracts.

The Evaluation Criteria presented in the table below are the default model for General Solar*Rewards Community RFPs under the 2020-21 RE Plan. The Company reserves the right to change these criteria in the event the Commission issues new rules that impact the Solar*Rewards Community® program, or in the event of other, unforeseen conditions. If the Company determines changes to the methodology are warranted for either of these reasons, the Company commits to making an informational filing that contains the modified criteria at least 15 days prior to releasing the RFP. The Table below shows the default evaluation criteria for the General CSG RFP.

Table 9: Default Evaluation Criteria for General RFP Scoring

DEFAULT EVALUATION CRITERIA FOR GENERAL RFP SCORING		
Criteria	Scoring	Breakdown
Economic	50	Lowest price gets 50, proportionally scored downward based on differential from lowest price
Developer Experience	20	Development plan + past performance, ranking worst (0) to best (20)
Residential / LI Subscriber Mix	10	100% = 10, 90% = 9, 75% = 7.5, etc.
Preparedness	10	Financial securement (5) Site Securement (2.5) Permitting plan (2.5)
Additional Commitments	10	Based on robustness, additional subscriber commitments, subscriber proximity and innovation
Production, Geographic location	Tie breaker	
Community Based	5	Additional points for community based projects

The Company will continue to provide Commission Staff the opportunity to review bid selections prior to award notification.

New for this Plan, the Company plans to release a 30-Day bid report, which contains an anonymized summary of the RFP. This will be provided via an informational filing 30 days post-bid deadline that includes the following elements:

- Average Bid price;
- Number and total capacity of bids received; and,
- Number of bidders.

100% Low-income RFP Competitive Solicitation

During 2018, the Company worked with CSG stakeholders through a series of workgroups and meetings to create a Low-Income CSG RFP template that has been used in the 2018 and 2019 Low-Income RFP evaluations. The Low-Income default scoring table is shown in Table 9 below. Similar to the General RFP process, the

Company commits to making an informational filing that contains the modified criteria at least 15 days prior to releasing the RFP.

Table 10: Low Income RFP Default Evaluation Criteria

DEFAULT EVALUATION CRITERIA FOR LOW-INCOME RFP SCORING		
Criteria	Scoring	Breakdown
Economic	50	Lowest price gets 50, proportionally scored downward based on differential from lowest price
Additional LI Commitments	20	Percent of bill credit benefitting subscribers (net), types of benefits, % of residential class subscribers, jobs programs, etc.
Energy & REC Production	15	Efficiency of capacity and energy production
Developer Experience	15	Development plan + past performance, ranking worst (0) to best (20)

9) Solar*Rewards Community® Production Credit

Customers that have subscribed to a Solar*Rewards Community® solar garden will receive a Solar*Rewards Community® production credit on their monthly bill pursuant to the Company’s filed tariff. Generally, the credit is based on the total monthly solar energy generated by the solar garden and the customer’s percentage share in the garden. This credit, expressed in dollars, is calculated by multiplying the customer’s portion of the solar garden production by the Company’s average retail rate for the class in which the customer takes retail service from the Company adjusted for certain costs pursuant to statute.

The Company’s Solar*Rewards Community® Service (“SRCS”) tariff specifies how to calculate the bill credits for each customer class. The SRCS was updated to a Total Aggregate Fixed Retail Rate (“TAFRR”) in 2016, following a unanimous settlement and decision from Proceeding No. 13A-0836E.⁶ The solar credits and the TAFRR are expressed as a cent per kilowatt-hour (kWh) rate. The change simplifies the credit calculation and allows all customers within a rate class to be given the same solar

⁶ Proceeding No. 13A-0836E, Decision No. C16-0747 (mailed Aug. 12, 2016)
 2020-21 Renewable Energy Plan

credits and avoids any unintentional influence of marketing to only a certain type of customer.

10)Solar*Rewards Community® Administration

The system owner will be required to provide the necessary application documentation and meet the requirements stated in the Commission's rules before the application will be reviewed for approval.

Due to the competitive nature of the offering and to ensure fairness to all applicants, an application may be withdrawn from the application process for lack of action after certain points in the process. The Company has determined points for withdrawal in the Competitive Solicitation to be: (1) If 90 calendar days has elapsed from issue of an award to which the applicant has not responded; (2) if the solar installation has not been installed within 30 months after Company approval of the Solar*Rewards Community® application; and (3) the nameplate capacity exceeds 10 percent of the awarded size in the original application or the size limit. For the Standard Offer, these points are: (1) If five (5) calendar days has elapsed from submission of an application to which the applicant has not provided a deposit; (2) if the solar installation has not been installed within 30 months after Company approval of the Solar*Rewards Community® application; and (3) the nameplate capacity exceeds 10 percent of the awarded size in the original application or the size limit.

11)Tracking Customer Participation

Public Service will use an online application and tracking system and a REC operations payment system for all RECs and unsubscribed energy production. This system will also house a subscriber management system that will be accessible by CSG owners and used for inputting subscriber information, system allocation/subscriber and for managing subscriber additions/deletions to their system. Public Service will use the same database as the reference list for both customer validation of new additions and for monthly bill crediting. The online system is the public interface to the dataset that

includes both Solar*Rewards Community® information and the application/subscriber management system for Solar*Rewards Community® owners.

12) Reservation Deposits

A reservation deposit and escrow fee is required for each system application. For the General RFP solicitation, the reservation deposit and escrow fee are due within 90 calendar days of an application's submission and award. For the Standard Offer, the reservation deposit and escrow fee are due within five (5) calendar days of an application's submission and award. For both the Standard Offer and Competitive Solicitation the reservation deposit is \$100 per kW and the escrow fee is an additional \$100 per kW. The deposit is refundable as long as the project is installed within the 24 months designated completion timeframe. The escrow fee is always refundable, regardless of project completion. The final nameplate capacity is not allowed to exceed more than 10 percent from the size stated in the application, as long as the size restraints are adhered to.

Any project that is not completed within 24 months, in either the Standard Offer or General, competitive RFP solicitation, can request an extension of up to six additional months (30 months total). After the 24-month deadline, the deposit will be forfeited to the RESA at a rate of the total deposit divided by 180 calendar days. If the project is not complete after 30 months from the initial award, the deposit will be entirely forfeited to the RESA and the application will be cancelled. Any balance will be refunded to the developer within 90 calendar days from project completion. Projects that are not completed within 30 months of the application date will be removed from the program.

13) Solar*Rewards Community® Contracts

The Solar*Rewards Community® Producer Agreement. The agreement contains the terms and conditions necessary to accommodate the Solar*Rewards Community® program offerings. The contract term is for 20 years. The Interconnection Agreement used for the Solar*Rewards Community® program is the same as used for any

customer seeking DG interconnection. Examples of this agreement are provided in Attachment JW1-3 of the 2020-21 RE Plan; these contracts will be updated as needed to reflect changes to Commission rules or commitments unique to the individual agreements.

Section 6 – Other Choice Products

Windsource®

Xcel Energy's Windsource® program is one of the largest utility green pricing programs in the country. Windsource® customers in Colorado have purchased over 2.8 billion kWh since the program began in 1997. Currently there are over 51,000 residential and 790 commercial & industrial participants in Colorado. The program remains a vital part of Public Service's renewable portfolio, enabling customers an easy, low-risk way to purchase renewable energy to offset their energy use and meet their sustainability goals.

A. Background

The Windsource® program was originally established as an experimental, voluntary, value-priced energy program in 1997. Designed to stimulate wind development in Colorado, the program was responsible for development of the first commercial wind farm in Colorado, the 30 MW Ponnequin wind farm. Demand for the program grew significantly and Windsource® became one of the leading voluntary green power programs in the country.

In 2009 the Commission approved a Windsource® redesign, where premiums from Windsource® sales are credited to the RESA thereby increasing dollars available to acquire renewable resources. Public Service retires RECs in proportion to the amount of Windsource® sales above what is inherent in those sales that are retired for RES compliance.

The Company's Windsource® program is structured to accomplish the following objectives:

- Meet the needs of customers who wish to purchase renewable energy in excess of the RES;

- Offer renewable energy at reasonable, competitive rates under flexible terms; and,
- Ensure that non-participants are not economically impacted by the Windsource® program.

B. Program Changes

Public Service is not proposing any changes to the program or pricing structure.

C. Pricing Methodology and Premium

The current market-based pricing methodology uses a simple average of five third party REC sellers offering Colorado wind RECs to residential and/or business customers in Colorado. The Company is proposing to maintain the current Windsource® premium of \$1.50 per 100 kWh block. The Company believes this price is competitive in the market and allows for healthy program growth. If market conditions or customer expectations change significantly over the course of this 2020-21 RE Plan, the Company may petition the Commission for reconsideration of the Windsource® premium or program construct prior to the filing of the next Renewable Energy Plan.

D. Green-e Certification

The Windsource® program will continue to maintain its certification through the Center for Resource Solution's Green-e Energy program. Green-e Energy provides oversight for voluntary renewable energy transactions in the United States. The Green-e Energy National Standard identifies many criteria renewable energy must meet to be certified. The current Standard indicates that energy must come from eligible sources of supply, like wind, and only new renewable facilities can be used (*i.e.*, facilities built within 15 years of the sales year). The Standard also indicates that energy applied to sales in a given year must be generated over a certain span of time either in that year, in the last six months of the previous year, or in the first three months of the following year. Certified energy is accounted for and tracked through the annual Green-e Energy verification audit process, which Public Service completes annually and completed most

recently in June 2018. Green-e also performs marketing compliance reviews to ensure that customer communications are transparent, that programs live up to their advertising claims, and that customers receiving the benefits of the programs they are paying for. Public Service most recently completed a marketing compliance review in August 2018.

To be Green-e Energy certified, the corresponding RECs associated with the energy sold under Windsource® cannot be used to fulfill a state renewable energy goal and cannot be “double-counted” toward that goal, with one exception. Pursuant to Green-e’s Renewable Energy Standard for Canada and the United States Version 3.3 (formerly Green-e Energy National Standard): “Only for a certified renewable electricity product that meets 100% of a customer’s load or a Green-e Direct certified purchase of renewable electricity, Green-e Energy allows a percentage of the product content to be satisfied with renewables reported toward a renewable portfolio standard (RPS) or other similar state policy, up to the amount that is attributable to the customer of the voluntary product.”⁷ Consequently, for example, Windsource® customers who choose to buy all of their electricity under the Windsource® or another Green-e Certified program in 2020, 30 percent of the RECs associated with the energy they purchase will be retired to meet the RES, leaving 70 percent of their RECs required retired under Windsource®. They will retain the right to claim 100 percent renewable energy usage under this Green-e rule.

E. Windsource® Forecast

Based on maintaining the price of \$1.50 per 100 kWh block, in 2020 the Company expects Windsource® sales of 214,116 MWh with associated revenue of \$3.2 million. For 2020 through 2029, the Company expects an average annual growth rate of two percent, with total sales of 2,316,737 MWh and associated revenue of \$34.8 million.

Renewable*Connect®

⁷ Green-e Renewable Energy Standard for Canada and the United States Version 3.3, p. 12 (January 24, 2019), available at <https://www.green-e.org/docs/energy/Green-e%20Standard%20v3.3%20US.pdf>.
2020-21 Renewable Energy Plan

A. Background

The Company's Renewable*Connect® program, which launched in Colorado in May 2018, sells customers renewable energy from a 50 MW solar array located near Deer Trail, Colorado in eastern Arapahoe County. Capacity based subscriptions are available under month-to-month, 5-year or 10-year terms, offering flexibility to participants. The program is designed with a program charge and credit. The Renewable*Connect® charge reflects the cost of the solar resource and the costs to administer the program. The Renewable*Connect® credit compensates participants for the fossil fuel costs that are no longer needed because of the addition of the new Renewable*Connect® resource.

B. Program Participation

The Renewable*Connect launch and enrollment process was handled in two Phases to meet the needs of different types of customers. Phase I was open for Residential (R-Class) and Small Commercial (C-Class) customers on May 23, 2018 and ran for eight weeks closing on July 18, 2018. The program was then closed for a brief period to prepare for Phase II. Phase II opened to larger commercial and industrial customers on July 30, 2018 and closed on July 31, 2018 when the remaining capacity was subscribed. The launch of Renewable*Connect® and enrollment process was successful and resulted in all interested customers receiving some or all of their requested subscription size. There are 2,686 residential participants and 725 commercial participants enrolled in the program.

The Renewable*Connect program has been fully subscribed since its launch. The Company created a waitlist for the program on July 31, 2018 and the waitlist remains open to interested customers. Presently, there are 1,061 customers on the program waitlist, representing roughly 168.5 MW of additional demand.

Recycled Energy

A. Description

The Company's Recycled Energy program offers customers an option to generate clean energy through the use of waste heat and steam which would otherwise not be used at all. As set forth in the Commission rules, 4 CCR 723-3 3652(v):

“Recycled energy” means energy produced by a generation unit with a nameplate capacity of not more than fifteen megawatts that converts the otherwise lost energy from the heat from exhaust stacks or pipes to electricity and that does not combust additional fossil fuel. Recycled energy does not include energy produced by any system that uses energy, lost or otherwise, from a process whose primary purpose is the generation of electricity, including, without limitation, any process involving engine-driven generation or pumped hydroelectricity generation.

Although Recycled Energy is not a renewable energy resource by definition under the Commission's rules, and therefore does not produce RECs, it is an Eligible Energy Resource, and generation of energy from a Recycled Energy generator can be used to meet Colorado's RES under C.R.S. § 40-2-124.

Due to the complex nature of these types of projects, the potentially long engineering and planning cycle, and the limited number of potential customer participants, the Company has seen limited interest and participation from Recycled Energy projects through the end of 2018. There have been inquiries, but the Company has not received any applications to date.

B. Program Participation

The application process for these projects is straightforward but also requires robust system information to evaluate the potential for energy production and the associated incentives.

On its website, the Company has developed and made available information to help customers make an informed decision about potential Recycled Energy projects.⁸ Account managers and Business Solutions Center representatives have been trained and provided customer outreach materials. The Company also worked with the Colorado Energy Office to assist in the creation of materials aimed at building interest in Recycled Energy projects.

Once a customer decides to move forward with a Recycled Energy project, they will submit an application which will be reviewed for completeness and accuracy with the terms of the tariff by the Recycled Energy program product manager. The product manager will either approve the application as complete or provide feedback to the customer with necessary revisions.

An approved application will result in the reservation of capacity in the program. Capacity is reserved on a first come, first served basis. At this point, the customer can then move on to the construction phase of the project. Customers shall install, own, operate, and maintain their Recycled Energy generation system. Upon completion of construction, the customer signs the verification section of the application and submits it to the product manager. The product manager provides the customer with the Recycled Energy program contract, which requires the customer's signature.

Once the program contract is signed and returned, a production meter will be installed, and the Company will bill the customer pursuant to Schedule RE in the Colorado PUC Electric Tariff.

C. Program Changes

Public Service is not proposing any changes to the program or pricing structure.

⁸ See Xcel Energy Recycled Energy, available at https://www.xcelenergy.com/programs_and_rebates/business_programs_and_rebates/renewable_energy_options_business/recycled_energy (last visited June 25, 2019).

Section 7 – Retail Rate Impact and Projected Spending Levels

Introduction

Commission Rule 3661 establishes the parameters for determining the retail rate impact from implementing the RES. Rule 3661(a) states that the net rate impact of Public Service's actions to comply with the RES shall not exceed two percent of the total electric bill annually for each retail customer. Under § 40-2-124(1)(g)(l), C.R.S.: "...the commission shall establish a maximum retail rate impact for this section of two percent of the total electric bill annually for each customer. The retail rate impact shall be determined net of new alternative sources of electricity supply from noneligible energy resources that are reasonably available at the time of the determination." The current two percent charge assessed on customer bills through the RESA complies with the two percent retail rate impact cap.

The Company's 2020-21 RE Plan provides for the acquisition of Eligible Energy Resources in advance of when such resources are needed to comply with the RES. Section 40-2-124(1)(g)(l), C.R.S., permits a utility to acquire more than the minimum amount of Eligible Energy Resources and RECs required by the RES, so long as the retail rate impact does not exceed the maximum two percent on customers' bills allowed by law. As is shown by Attachment JW1-2, Table 7-2(c), the Company continues to estimate that these resources can be acquired for an incremental rate impact of no more than two percent over the ten-year RES planning period.

RES/NO RES Modeling

Commission Rule 3661(h) sets forth the basic method for calculating the additional or "incremental" costs that result from adding Eligible Energy Resources to the Public Service system in order to comply with the RES. The rule details the methodology by which Public Service is to use its computer

models to estimate the incremental costs associated with the addition of Eligible Energy Resources. The rule methodology requires modeling the total electric system costs of two alternative scenarios or models of electric resources over the RES Planning Period. The first scenario ("RES Plan") includes the Eligible Energy Resources that are present or projected to be added on the Public Service system. The second scenario (the "No RES Plan") is comprised of a sufficient amount of "non-renewable resources reasonably available" that would be needed to replace the "new" Eligible Energy Resources in the RES Plan. The difference in annual system costs between these two scenarios for any particular year is referred to as the net modeled incremental costs of the Eligible Energy Resources.

Assumptions Used in RES/NO RES Modeling

Commission Rule 3661(e) states that for purposes of calculating the retail rate impact, Public Service "shall use the same methodologies and assumptions it used in its most recently approved electric resource plan under the Commission's Electric Resource Planning Rules, unless otherwise approved by the Commission." The Company used the same modeling assumptions for the RES and No RES plans as were filed in Public Service's 2016 Electric Resource Plan 120-Day Report (filed June 6, 2018) (Proceeding No. 16A-0396E).

The Company did *not* include any carbon cost imputations in the model runs and other calculations set forth in Attachment JW1-2, Table 7-1 and Tables 7-2(a), (b) and (c) for this 2020-21 RE Plan, consistent with the assumptions filed in Proceeding No. 16A-0396E.

Resources Included in Both RES and No RES Plans

Commission Rule 3661(h)(III) considers all Eligible Energy Resources whose acquisition commenced prior to July 2, 2006 to be considered "sunk" resources, meaning that those resources and their cost impacts are included in both the

RES Plan and the No RES Plan models. When the annual costs of the RES Plan and No RES Plan are compared with one another to determine the incremental cost of renewables, the cost impacts of the sunk resources effectively cancel out between the two plans and thus do not contribute to the modeled incremental costs of the Eligible Energy Resources.

Section 8 of this Plan (Cost Recovery) discusses the cost recovery mechanisms used to recover the incremental cost of Eligible Energy Resources, and the amounts spent to acquire them. The Commission's Rules recognize the difficulty in estimating the incremental costs associated with the acquisition of Eligible Energy Resources given that these costs can change from year to year. To help the utility temper the potential for changing incremental cost estimates from year to year, which can result in over or under collection of costs through the RESA in any particular year, Rule 3661(h)(V) allows the QRU to "Lock Down" the costs of Eligible Energy Resources if the QRU requests that the Commission do so. This lock down process eliminates the year to year changes in the assumptions which drive the annual incremental cost estimates and allows the QRU to better project the total incremental costs charged to the RESA for Eligible Energy Resources. The purpose of this lock down process is to better project the cost impacts of incremental Eligible Energy Resources on the RESA over time. This improved certainty regarding the RESA impact of Eligible Energy Resources gives the Commission the opportunity to better understand and be able to adequately plan for the effects of new renewable resources and the cost impacts to customers.

For those Eligible Energy Resources whose incremental costs have been explicitly locked-down by prior Commission order, only the locked-down incremental cost of those resources are included when calculating the total retail rate impact for the period of the lock down. Volume II (Attachment JW1-2), Tables 7-3 (a) and (b) identify the Eligible Energy Resources that have had their respective incremental costs explicitly locked down, and are included in both the

RES and No RES Plans when performing the retail rate impact calculations for the current RES Planning Period.

The following Eligible Energy Resources incremental cost impacts have been locked down for various periods of time by prior Commission order:

- Pre-2009 Solar*Rewards®
- SunE Alamosa 8 MW PV solar
- Northern Colorado Wind I 151 MW wind
- Northern Colorado Wind II 23 MW wind
- Solar*Rewards® after January 1, 2009
- Solar Rewards® Community
- Cedar Creek II 250 MW wind
- Cedar Point Wind 250 MW wind
- San Luis Solar 30 PV solar
- Greater Sandhill 18 MW PV solar
- Limon I 200 MW wind
- Limon II 200 MW wind
- Limon III 201 MW wind
- Golden West 249 MW wind
- Comanche 120 MW PV solar
- Solar Star 50 MW PV solar

Tables 7-3(a) and (b) identify the incremental costs of these locked down resources. As provided by Rule 3661(h)(V), the incremental costs for all locked down resources contained in Tables 7-3(a) and (b), (with the exception of (1) SunE Alamosa and on-site solar prior to 2009 whose incremental costs have been locked for the entire life of the PPA/contract and (2) the remaining resources listed above whose incremental costs have been locked through 2026), were locked down for the period extending through 2021 pending a final

decision regarding this 2020-21 RE Plan. For the purpose of modeling the Retail Rate Impact of these locked down resources, we have assumed that they will remain locked down through this Plan period, becoming unlocked on January 1, 2022. The retail rate impact of unlocking these resources is reflected in Tables 7-2(a), (b) and (c).

The incremental costs of renewable resources acquired as a result of the 2016 ERP process have not been explicitly locked down. Instead, their respective incremental costs have been set using the assumptions of the current RES Compliance Plan. For this 2020-21 RE Plan, all unlocked resources would have their incremental costs set for 2020 and 2021 using the assumptions underlying this 2020-21 RE Plan. The incremental costs for the “unlocked” resources have been estimated from the RES and No RES model runs performed to prepare this 2020-21 RE Plan.

RES and No RES Model Runs, Calculation of Incremental Costs, and Avoided Energy Costs

Once all of the Eligible Energy Resources that have not been locked down have been identified, the RES and the No RES Plans can be run. Traditionally, the Company has identified the costs resulting from the No RES Plan as the system “Avoided Energy Cost,” or the costs that would have otherwise been incurred but for the Eligible Energy Resources. The costs identified in the RES Plan then are compared to the costs identified in the No RES Plan. The resulting difference in costs are the incremental costs to be allocated to and recovered through the RESA, which are included in calculating the retail rate impact. The Avoided Energy Costs, which are the costs that would have been incurred without the addition of any Eligible Energy Resources, are charged to the ECA.

Credits to the RESA Deferred Account

By Decision Nos. C12-0081 and C12-0294 in Docket No. 11A-510E, the Commission determined that margins on Hybrid REC sales shall be split 80

percent to customers and 20 percent to Public Service for total annual Hybrid REC margins of \$20 million or less. For total Hybrid REC margins above \$20 million, the split is 90 percent to customers and 10 percent to Public Service. The Commission also ordered that the customer portion of Hybrid REC margins shall be applied to the RESA account. Decision No. C17-0959 in Proceeding No. 17A-0650E extended this treatment through December 31, 2020. As of May 31, 2019, Public Service has generated approximately \$6.3 million dollars in Hybrid REC margins, of which 80 percent is due to be paid to customers. The Company has not projected future Hybrid REC sales, but may engage in additional sales should the opportunity become available. As such, Table 7-2(c) under column I titled "REC Margin Revenue" contains the year to date Hybrid REC margins attributable to the RESA account, but does not estimate any further transactions.

Finally, the RESA deferred account is credited with the projected wholesale customer load ratio share of the incremental costs of the Eligible Energy Resources that the Company estimates it will collect under its existing wholesale rates.

Both the Windsource® revenues and Recycled Energy revenues and costs are allocated to the RESA, which will potentially have a positive net effect on the RESA. The Company does not project any costs or revenues under the Recycled Energy program and has therefore only included expected Windsource® revenues.

Retail Rate Impact Analysis

Tables 7-2(a), (b), and (c) represent the retail rate impact calculations similar to the retail rate impact calculations presented in prior RES compliance plans. The values contained in Tables 7-2(a), (b), and (c) are derived from modeling that is based on the gas and coal price forecasts, methodologies, and other assumptions filed in the 2016 ERP.

Public Service’s modeling reflects the fact that the incremental costs of the Company’s existing portfolio of renewable generation is equal to or below the projected RESA revenues for the term of this plan. Table 7-2(c) shows that the RESA deferred account balance is projected to remain positive for all years of the Plan.

Description of Tables

Tables 7-1 through 7-3 segregate costs between: (1) the costs associated with Eligible Energy Resources locked down by Commission order; and (2) the costs associated with Eligible Energy Resources whose costs are not locked down, but are set by the assumptions in this 2020-21 RE Plan. Further, for both locked down and unlocked resources, the design explicitly demonstrates the total cost of Eligible Energy Resources, as well as the portion of the cost that are incremental and recoverable through the RESA, and the portion of the costs that are avoided and recoverable through the ECA.

Table 7-1:

Table 7-1 is a high-level summary of the total of both the unlocked and locked costs of Eligible Energy Resources that are charged to the RESA deferred account. These costs are separated into their Incremental Cost and Avoided Energy Cost components. The columns that contain the word “unlocked” in the column heading contain the costs for Eligible Energy Resources that have not had their respective costs locked by Commission order. The columns that contain the word “locked” in the column heading contain the costs for Eligible Energy Resources that have had their costs locked by Commission order. If a resource had its costs locked for a finite period of time (e.g. not for the life of the resource), its costs will shift from the locked columns to the unlocked columns once the lock down period for that resource has expired.

Tables 7-2(a) and (b):

Tables 7-2(a) and (b) provide the calculations for the Incremental and Avoided Energy Costs of the unlocked or locked down resources. Tables 7-2(a) and (b) contain identical calculations, except 7-2(a) only contains unlocked resources and 7-2(b) only contains locked resources. Tables 7-2(a) and (b) are set up as follows: Column A identifies the calendar year. Column B, “Central Solar Total Costs,” identifies the estimated total cost of the Company’s Central Solar facilities.

Column C, “Wind Total Costs,” identifies the estimated total costs of Wind resources. Column D, “Other Renewable Total Costs,” identifies the estimated total costs of the non-solar, non-wind, Eligible Energy Resources. There are no costs contained in this column for the 2020-21 RE Plan.

For Table 7-2(a), Columns B, C, and D only contain the costs Eligible Energy Resources which have not been locked down by Commission order. For Table 7-2(b), Columns B, C, and D only contain the costs of Eligible Energy Resources that have been locked down by Commission order. If a resource is locked down for a finite period of time, its costs will shift from Table 7-2(b) to Table 7-2(a) once the lock down has expired.

Column E, “Total Cost,” is a summation of the total costs contained in columns B, C, and D. This total does not include the costs of the Company’s Solar*Rewards® or Solar Rewards Community® programs. These programs are reflected in columns H through J.

Column F, “B, C, D Modeled Incremental Cost,” (Table 7-2(a)) and “B, C, D, Locked Incremental Cost,” (Table 7-2(b)) shows the incremental costs associated with the resources contained in columns B, C, and D. In Table 7-2(a), Column F is the unlocked incremental cost and is equal to the difference of system costs

between the RES and No-RES Plan scenarios. In Table 7-2(b), Column F shows the locked down incremental costs as set by Commission order. A more detailed calculation of costs that are locked for life can be found in Tables 7-3(a) and (b).

Column G, “B, C, D Calculated Avoided Cost,” reflects the difference between the total cost in column E and the incremental cost in column F, and is equal to the Avoided Energy Costs of the Eligible Energy Resources.

Column H, “On-Site Solar Total Costs,” contains the total estimated cost of the Solar*Rewards® and Solar*Rewards Community® programs. Column H in Table 7-2(a) contemplates the unlocked tranches of Solar*Rewards® and all of Solar*Rewards Community®, and Column H in Table 7-2(b) contemplates the locked tranches of the Solar*Rewards® program.

Column I, “Modeled On-Site Solar Avoided Costs,” (Table 7-2 (a)) or “Locked On-Site Avoided Cost” (Table 7-2(b)) is the modeled avoided costs of the on-site solar resources. This is determined from the sum of the modeled “benefits” or Avoided Energy Costs calculated from a RES and No RES Plan comparison, which only considers the Solar*Rewards® in question. For Table 7-2(b), the modeled Avoided Energy Costs are for the tranches of Solar*Rewards® that were locked by Commission order, and therefore were determined from RES and No RES Plan comparison using the approved modeling assumptions from the RES Compliance Plan in place at the time their respective costs were locked. The locked avoided costs for the two tranches of Solar*Rewards®, which have their incremental costs locked are detailed in Tables 7-3 (a) and (b).

Column J, “Calculated On-Site Solar Incremental Cost,” is the difference between the On-Site Solar Total Costs in column H and the On-Site Solar Avoided Costs contained in column I.

Column K, "Total Costs," is the sum of the Eligible Energy Resource costs in columns E and H.

Column L, "Incremental Costs," is the sum of the Eligible Energy Resource Incremental Costs in columns F and J.

Column M, "Avoided Costs," is the sum of the Eligible Energy Resource Avoided Energy Costs in columns G and I.

Table 7-2 (c):

Table 7-2(c) pulls information from Tables 7-2(a) and (b) to calculate the estimate of the RESA deferred balance. Table 7-2 (c) is set up as follows:

Column A identifies the calendar year.

Column B, "Unlocked Costs," is the sum of the total costs of Eligible Energy Resources whose costs are not locked down by Commission order. This is calculated in column K in Table 7-2(a).

Column C, "Locked Costs," is the sum of the total costs of Eligible Energy Resources whose cost are locked down by Commission order. This is calculated in column K on Table 7-2(b).

Column D, "Unlocked Incremental Costs," is the sum of the incremental costs, recoverable through the RESA, from eligible energy resources whose costs are not locked down by Commission order. This is calculated in column L in Table 7-2(a).

Column E, "Locked Incremental Costs," is the sum of the incremental costs, recoverable through the RESA, from Eligible Energy Resources whose costs are

locked down by Commission order. This is calculated in column L in Table 7-2 (b).

Column F, "RESA Program & Admin Costs," contains an estimate of the program and administrative costs associated with the RESA.

Column G, "RESA Rider Revenue," is an estimate of the annual revenue that the Company will recover from retail customers through the RESA rider.

Column H, "WindSource Revenue," is a projection of the annual revenue that the Company will receive as a result of REC sales through the Windsource® program.

Column I, "REC Margin Revenue," identifies the customer's share of the forecasted margins the Company may earn from the sale or trading of RECs. Future REC sales may provide additional revenue to the RESA.

Column J, "Wholesale Customer RESA RJA Credit" is the projected wholesale customer load ratio share of the incremental costs of the Eligible Energy Resources the Company estimates it will collect under its existing wholesale rates.

Column K, "Unlocked Avoided Costs," is the total avoided costs, recoverable through the ECA, of the Eligible Energy Resources that have not been locked down by Commission order. This is calculated in column M in Table 7-2(a).

Column L, "Locked Avoided Costs," is the total avoided costs, recoverable through the ECA, of the Eligible Energy Resources, which have been locked down by Commission order. This is calculated in column M in Table 7-2(b).

Column P, "Total Renewable Resource Costs," is the total costs of all locked and unlocked Eligible Energy Resources contemplated by the RESA. The column is a sum of columns B and C.

Column Q, "Total RESA Costs," is the sum of columns D through F and represents the total costs of the renewable resources which are collected through the RESA. This includes the incremental costs of Eligible Energy Resources, administration and program costs, and incentive payments made through the Solar*Rewards® and Solar*Rewards Community® programs.

Column R, "Total RESA Revenues," is the sum of columns G through J and represents the total revenues collected through various means to pay for the costs borne by the RESA. This includes RESA Rider Revenue, Windsorce Revenue, the proceeds from the sale or trading of Hybrid REC Margins that are credited to customers through the RESA and our Wholesale Customers' share of the incremental costs of Eligible Energy Resources.

Column S, "Annual Excess/Deficiency," identifies the calculated difference between the RESA Revenue collected and the RESA costs for each year.

Column T, "Interest," shows the amount of interest accrued on the balance in the RESA-funding account.

Column U, "Annual Excess/Deficiency w/Interest," shows the total Annual Excess or Deficiency with the Interest included.

Column V, "RESA Rolling Balance (Deferred)," shows the projected running accrual of surpluses or deficits in the RESA account from year to year over the entire RES Planning Period.

Approval of Spending Levels and Request for Prudence Determination

In this 2020-21 RE Plan, the Company projects that contributions to the RESA will be sufficient to cover the costs to be charged to the RESA in the 2020 and 2021 Compliance Years. See Table 7-2(c) in Column S. Thus, we project we will not need to advance any dollars to the RESA for the compliance period.

Our projection that we will not need to advance funds to the RESA during the compliance period is based upon certain projections and assumptions embodied in this 2020-21 RE Plan. We anticipate that the Company's actual energy sales, the level of renewable generation and possibly other projections and assumptions will be different than what is embodied in our 2020-21 RE Plan. Should those projections and assumptions prove to be inaccurate; the Company may need to advance further funds to the RESA in order to meet its obligations in the 2020 and 2021 compliance years. If the Company becomes determines that it may be required to advance an amount to the RESA that exceeds the amounts set forth above, the Company will make the appropriate filing(s) with the Commission.

Section 8 – Cost Recovery

Cost Recovery Mechanism

Public Service plans to use the same cost recovery and deferred accounting mechanisms for its 2020-21 RE Plan that the Commission has approved for its 2009 through 2019 RES Compliance Years, namely: (1) the ECA is used to recover the costs of Eligible Energy Resources that match the costs of the avoided non-renewable resources; and (2) the RESA is used to recover the costs of the Eligible Energy Resources that are incremental to the costs of the avoided non-renewable resources as well as the program and administration costs of the Solar*Rewards® and Solar*Rewards Community® programs.

In its 2009 through 2019 compliance years the Company used the ECA deferred account as the true-up mechanism for cost allocation of Eligible Energy Resources. Under this mechanism, Public Service first charges the ECA for 100 percent of the allowable costs of eligible energy resources except Solar*Rewards®. After all costs are in the ECA, the incremental costs associated with the Eligible Energy Resources that are recoverable in RESA are transferred from the ECA deferred account into the RESA deferred account. As a result, the Avoided Energy Costs for the period are collected through the ECA and the modeled incremental costs are collected through the RESA. The Company determines, through modeling the incremental costs of these resources, which is derived from the difference between the RES Plan and the No RES model runs. In this way, the RESA continues to recover only the net incremental costs of Eligible Energy Resources. The Commission initially approved this cost recovery mechanism in Decision No. C09-1037 in Proceeding No. 08A-532E and reaffirmed it in all subsequent decisions related to the accounting treatment of Eligible Energy Resources for Public Service.

The incremental costs as discussed in Section 7 of the Non-DG Eligible Energy Resources are derived by multiplying the actual monthly production for each Eligible Energy Resources, which are then recovered through the RESA. The incremental costs of the Eligible Energy Resources are charged against the RESA by transferring an amount equal to the net incremental costs from the ECA to the RESA deferred account. The costs of Eligible Energy Resources charged to the ECA are the avoided costs which are considered the costs that would have been experienced without the addition of any Eligible Energy Resources.

The accounting treatment is different for the rebates and REC payments made to Solar*Rewards® and Solar*Rewards Community® customers. Public Service incurs costs related to its Solar*Rewards® and Solar*Rewards Community® programs, including payments for RECs and the administrative costs of running the programs. The costs incurred are deferred 100 percent in the RESA deferred account. After all costs are included in RESA, Public Service transfers the Avoided Energy Cost associated with the Solar*Rewards® program from the RESA deferred account to the ECA deferred account. This process leaves the Avoided Energy Costs to be collected as part of the ECA and incremental costs as part of RESA. This pertains to all systems installed as part of the Solar*Rewards® program whether the incentives were paid up front or whether the payments are made over time based upon production.

The Solar*Rewards Community® program makes payments to both the Developer and the subscriber. The Developer is paid an amount based on their bid or on the Standard Offer commensurate with the amount of energy produced for subscriber customers. Any unsubscribed production is paid to the developers at energy price of preceding year's average hourly incremental rate (or average hourly incremental cost, "AHIC"). Payments made to Developers for subscribed energy generated by the solar garden are directly charged to the RESA deferred account. Any unsubscribed energy purchases at the AHIC from the Developer

are allocated to the retail jurisdiction as costs to the ECA deferred account and recovered through that mechanism.

The Company also gives a bill credit to each subscriber based on the energy generated on their behalf from the solar garden. The costs incurred to purchase subscriber energy are initially deferred 100 percent to the ECA. After all costs are included in the ECA, the Company transfers any cost which is above the Avoided Energy Cost from the ECA deferred account to the RESA deferred account.

The RESA will also be used to pay for the program and administrative costs of the Solar*Rewards® and Solar*Rewards Community® programs. Any credits from Wholesale customers under the Renewable Energy Credit Ownership Agreements will be credited against the RESA deferred balance. Premiums paid by Windsource® customers and REC margins that the Commission has determined by rule or decisions should be credited to the RESA deferred account are also credited to the RESA.

RESA Expenditures

House Bill 10-1001 recognized the authority of a utility to advance funds to the RESA prior to their collection from customers in order to acquire renewable resources in advance of funds being available. The statute provides that: “[s]uch funds shall be repaid from future retail rate collections, with interest calculated at the qualifying retail utility's after-tax weighted average cost of capital, so long as the retail rate impact does not exceed two percent of the total annual electric bill for each customer.” C.R.S. § 40-2-124(g)(I)(B). The statute does not require the reciprocal interest calculation on a positive RESA balance. However, when the Commission incorporated this statutory language in to Rule 3660(e), the Commission went beyond the statute by requiring the interest be reciprocal on the RESA balance.

The Company's estimates show that in 2020 and 2021 the RESA deferred account will remain positive based on the Company's proposed customer choice offerings presented in Section 5.

Regulatory Accounting for the RESA Program

In accordance with Accounting Standards Codification Topic 980 Regulated Operations (ASC 980), formerly referred to as Statement of Financial Accounting Standards No. 71 (SFAS 71), a deferred regulatory account has been established to record the revenue, costs, and accrued interest for the RESA program, which are reported to the Commission via the Company's monthly reports. In addition, transactions are captured to meet the program's regulatory reporting requirements. For example, work orders summarize costs by type and size of renewable resource (e.g. customer-sited solar <25 kW), and other segments of the account code detail the nature of the cost (labor, consulting, renewable energy credits) and the business area incurring the cost.

Costs booked to the deferred regulatory account are classified as either program or administrative costs. Program costs include, but are not limited to:

- RECs
- Rebates
- REC certification
- Meter sets for second meter
- Incremental energy costs
- Application deposits

Administrative costs include, but are not limited to:

- Incremental labor, employee expenses
- Marketing
- IT software for REC database
- IT software for Solar*Rewards Community®

- Billing costs
- Audit fees

Rule 3661(d) caps administrative costs at 10 percent per year of the total annual collection. Public Service does not anticipate exceeding that cap.

Section 9 – Net Metering

General Discussion

Net Metering Service (“Schedule NM”) and Photovoltaic Service (“Schedule PV”) are available as optional services under applicable rate schedules. Colorado’s Net Metering policy effectively allows for customer sited renewable energy resources, including rooftop solar customers, to offset, kWh for kWh, their energy charge commensurate with the energy produce by the renewable resource.

The Company is not proposing any changes to its Schedule NM or Schedule PV in its 2020-21 RE Plan.

Section 10 – Interconnection Requirements

Public Service is not proposing any changes to the Commission’s interconnection rules or requirements in this 2020-21 RE Plan. The Company’s Solar*Rewards® contracts, customer forms, and Interconnection Agreements are found in Attachment JW1-3 of this Plan.

Rule 3657 directs the Company to (among other things) file with the Commission:

- Proposed RFPs including any standard contracts the investor owned QRU plans to use as part of a competitive acquisition process.
- Application forms, standard agreements, and general procedures for the investor owned QRU’s SRO programs under Rule 3658 and for the interconnection of renewable energy resources pursuant to Rule 3667.

Consistent with past practice, the Company has included these agreements in Volume III of its 2020-21 RE Plan (Attachment JW1-3). The three core agreements contained in Volume III include Public Service Company’s:

- Solar*Rewards® REC Purchase Contract;
- Solar*Rewards Community® Producer Agreement; and,
- Small Generator Interconnection Agreement.

The Company has made a number of changes to its program contracts and supporting documents. The major changes can be summarized in five broad categories:

- 1) Generally consolidate and conform multiple small edits that have been made over time;
- 2) Consolidate contracts into a smaller number of versions;
- 3) Align terms across programs for deposits, construction milestones, and project completion dates and address certain other operational matters that have arisen as programs have grown; and,

4) Clarify certain provisions specific to three-way agreements.

The Company considers most of its agreements in Volume III to be standard contracts associated with its RES plan offerings, and it is simply good practice to evaluate standard contracts from time to time. Over time, the Company has identified areas where updates may be warranted or necessary. As the Company's renewable energy plan offerings have grown in variety and size, the Company has encountered operational matters that could benefit from clarifications or revisions to the associated contracts. The Company has also identified other updates that are necessary to correspond to changes in program plans proposed in the 2020-21 RE Plan.

The Solar*Rewards®, Solar*Rewards Community®, and interconnection agreements reflect current Commission rules. The Company expects to update its model contracts to comport with any upcoming rule changes or based on the final decision in this proceeding.

Section 11 – Conclusion

As set forth in this Plan and its associated filing with the Commission, Public Service has presented a comprehensive 2020-2021 Renewable Energy Plan for the Commission's consideration. Public Service respectfully requests that the Commission approve this 2020-21 RE Plan as presented for the 2020-2021 Compliance Years, including specific approvals of the following:

- The Company's proposed acquisition levels, incentives, and program changes for its Solar*Rewards® and Solar*Rewards Community® programs;
- The Company's Windsource® and Recycled Energy program proposals;
- The Company's proposal to submit a "30-day report" following CSG bid awards;
- Continuation of the CEO's Rooftop Low-income Solar program;
- The Company's request to develop a total of 8 MW of Company-offered CSGs over 2020 and 2021 (4 MW each year) that will be offered exclusively to eligible low-income customers, using a Project Labor Agreement;
- The Company's Motion to Extend 2017–19 RE Plan Through First Quarter 2020, as set forth in its concurrently-filed Motion;
- The Company's Motion for Waiver of Rule 3657, as set forth in its concurrently-filed Motion.

