



# 2019 RENEWABLE ENERGY STANDARD COMPLIANCE REPORT

Public Service Company  
of Colorado

June 2020 / Proceeding No. 16A-0139E

# 2019 RENEWABLE ENERGY STANDARD

## COMPLIANCE REPORT

### I. Statement of RES Compliance & Introduction

Public Service Company of Colorado (“Public Service” or the “Company”) is pleased to report that the Company is in compliance with the Colorado’s 2019 Renewable Energy Standard (“RES”). For 2019, the RES required that 20 percent of the Company’s electric energy sales be served from renewable energy<sup>1</sup>, with 2 percent from distributed generation. At least one-half of the distributed generation must be from retail distributed generation.<sup>2</sup>

Colorado Public Utilities Commission (the “Commission”) Rule 3659(a) states that Renewable Energy Credits (“RECs”) may be used to comply with the RES. The Rules define each REC to mean a contractual right to the full set of non-energy attributes, including any and all credits, benefits, emissions reductions, offsets, and allowances, howsoever entitled, directly attributed to a specific amount of electric energy generated from an eligible energy resource. One REC results from one megawatt-hour (“MWh”) of electric energy generated from an eligible energy resource. By statute, certain eligible energy resources qualify for REC multipliers such that one MWh from these resources can generate more than one REC for compliance with the RES. Senate Bill 13-252 modified the REC multiplier to eliminate a REC multiplier for eligible energy resources that became operational after January 1, 2015.

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<sup>1</sup> Commission Electric Rule 3654.

<sup>2</sup> Commission Electric Rule 3655.

As a result of acquiring the generation described below, Public Service has sufficient RECs to meet its RES obligation for the 2019 compliance year.

Pursuant to Colorado Public Utilities Commission Rule 3662, investor-owned Qualifying Retail Utilities ("QRUs"), like Public Service, are required to file an Annual RES Compliance Report ("Report") that contains the information set forth in Rule 3662. In general, the Report is designed to give the Commission a status on the QRU's compliance with the Renewable Energy Standard for the most recently completed compliance year. The Report will be reviewed for compliance in accordance with Rule 3663.

Public Service is providing this Report in compliance with Rule 3662, which demonstrates that the Company is in compliance with Colorado's 2019 Renewable Energy Standard, consistent with the Company's Commission-approved 2017-19 RES Compliance Plan ("2017-19 Plan"), (Proceeding No. 16A-0139E), approved in Decision No. C16-1075 (as part of the Non-Unanimous Comprehensive Settlement Agreement in Proceeding No. 16AL-0048E).

## **II. Overview of the Company's Efforts to Meet the Renewable Energy Standard**

In addition to meeting the Renewable Energy Standard requirements for 2019, Public Service remains well-positioned to meet the Colorado RES over the next several years. The RES requires the Company to generate 30 percent of electric retail sales from renewable resources in 2020, with three percent of that energy coming from renewable distributed generation. The Company's compliance strategy and acquisition of eligible energy resources reflects a desire to protect the environment, provide customers with renewable energy choices that they want and value, and follow through on our commitment to provide safe, reliable and increasingly clean energy at a competitive price. In this portion of the Report, the Company briefly describes and summarizes some of its efforts to meet these commitments.

### **A. 2016 Comprehensive Settlement Agreement**

In August 2016, Public Service, along with 22 other parties representing some of the Company's biggest electricity users, solar and wind power developers, rooftop solar companies and trade groups, consumer and low-income advocates, and environmental advocacy groups, reached a settlement agreement to open up new avenues for customer choice and expanded clean energy program offerings. The Comprehensive Settlement Agreement approved by the Colorado Public Utilities Commission addressed three pending proceedings: (1) an update to the utility's rate design structures (Phase II Electric Rate Case, Proceeding No. 16AL-0048E); (2) creation of a new solar power program for residential and business customers (Renewable\*Connect, Proceeding No. 16A-0055E); and (3) an expansion of the utility's renewable energy programs over the next three years (2017-2019 RES Plan, Proceeding No. 16A-0139E). The

Comprehensive Settlement Agreement allows Public Service to offer customers more control over their energy mix, bring more carbon-free power onto the system, and support emerging energy technologies—all while ensuring power remains reliable, and prices stay reasonable and affordable for all customers.

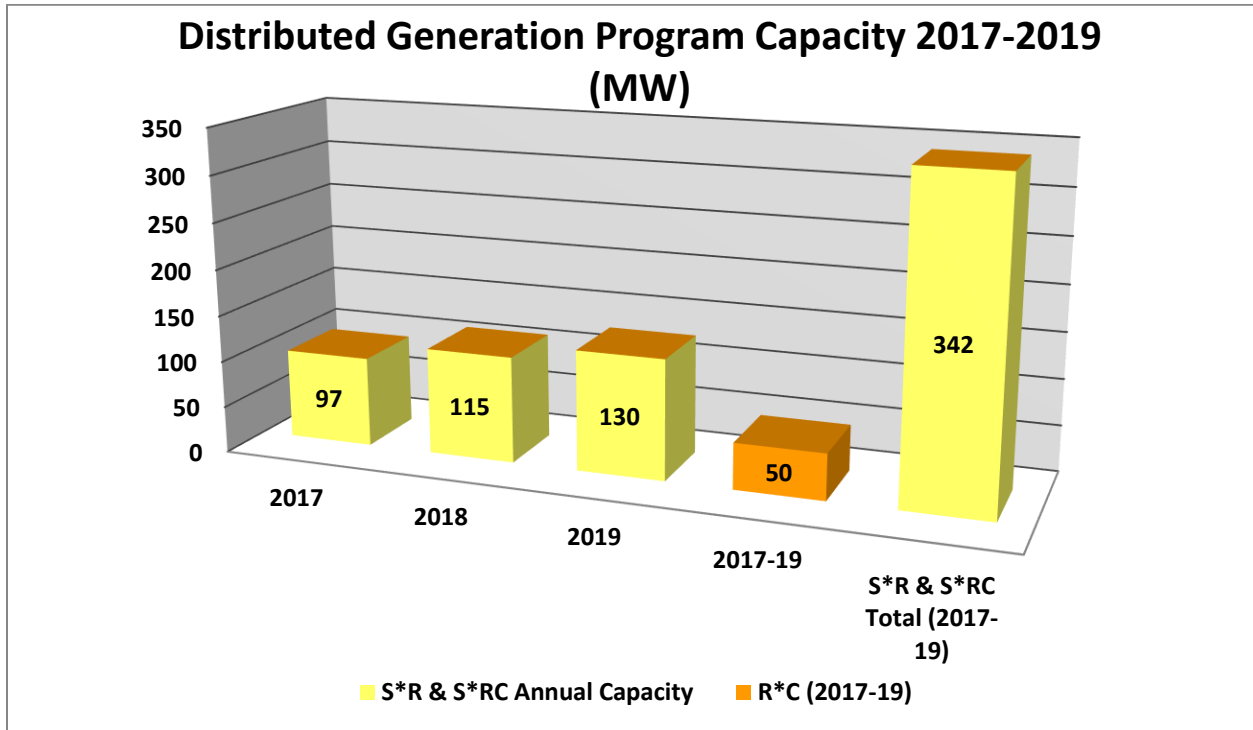
Key outcomes of the Comprehensive Settlement Agreement include:

- **Growth of Public Service’s Solar\*Rewards and Solar\*Rewards Community Programs.** Public Service expanded the availability of its rooftop solar and solar gardens programs. The expansions approved as a result of the settlement agreement resulted in program capacities up to 342 megawatts (“MW”) of new solar power between 2017 and 2019 (97 MW in 2017; 115 MW in 2018; and 130 MW in 2019).
- **Solar power for traditionally under-served customers.** In an effort to make solar power more accessible to low-income customers, the settlement agreement contemplates a low-income rooftop solar program (See Attachment J). Public Service will increase solar garden access up to 6 MW of company-owned resources and up to 4 MW per year of competitively bid community solar gardens designated to serve 100 percent low-income customers and service providers.
- **A new solar power program to complement its existing renewable portfolio.** In 2018, the Company launched a new program called Renewable\*Connect with the subscription phase of the program. The program began operations in 2019. Similar to the Company’s Windsource® program, Renewable\*Connect is giving customers a convenient and simple way to “go solar” by purchasing up to 100

percent solar power for their home or business—even if they do not own their residence, do not live near a solar garden, or are unable to install private solar panels on site.

- **Windsor price reduction.** The settlement agreement lowered the Windsor® premium price from \$2.16 per kilowatt-hour block to \$1.50 per kilowatt-hour block beginning in 2017, making it more affordable for customers to get some or all of their energy from wind-powered resources.
- **Energy storage.** The settlement agreement also allowed Public Service to craft standards along with stakeholders for connecting energy storage systems (e.g., batteries)—which can store energy for a home or business—to its system. Energy storage continues to show potential as an emerging technology that can help integrate more wind and solar energy onto the power grid and help address the intermittent availability of those resources.
- **Recycled Energy program.** The settlement agreement also set forth terms for finalizing the Company’s proposed Recycled Energy program.

The graph below shows the maximum distributed generation program capacity available to customers for the years 2017 through 2019 that was made possible by the Comprehensive Settlement Agreement.



## B. Wind Energy

Wind energy continues to play a significant role in Xcel Energy's renewable energy portfolio. Public Service's early actions to add wind energy at competitive prices and proactively comply with state standards have benefitted the customers we serve and the state. Xcel Energy is a national leader in wind energy.

Wind energy on Xcel Energy's systems has increased significantly since 2010 and will continue to expand in the future. In 2019, wind energy made up 24 percent of Public Service Company of Colorado's energy supply. At the end of 2019, Public Service had more than 3,000 MW of installed wind energy capacity on its system and

Xcel Energy had nearly 8,000 MW of wind across its various utility operating companies.

The Company is continuing the implementation of its Colorado Energy Plan Portfolio (“CEPP”). The CEPP is a transformative plan that was approved by the Commission as part of the Company’s 2016 Electric Resource Plan (“ERP”) (Proceeding No. 16A-0396E) and involves retiring 660 MW of coal-fired generation by late 2025 and adding 1,100 MW of wind, approximately 700 MW of solar and 275 MW of storage to our Colorado generation fleet. In addition to 630 MW of PPA wind, the CEPP includes the Company-owned 500 MW Cheyenne Ridge Wind Project, the construction of which was approved by the Commission in Proceeding No. 18A-0905E. Construction commenced in June 2019 and the project is on track to be in-service by the end of 2020 to take full advantage of federal production tax credits (“PTCs”) and maximize savings for customers. Following implementation of the CEPP, approximately 39% of the Company’s energy mix will come from wind.

### **C. Windsource**

Wind energy also is available as a customer choice through the Company's popular Windsource® program, which began in 1998 and continues to be one of the largest voluntary green-energy programs in the United States. The current structure of our Windsource® program originated in the terms of a settlement agreement the Commission approved in Proceeding No. 08A-260E and more recently in the settlement of the Company’s 2017-19 Plan.

Windsource® is certified through the Green-e Energy program. 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” towards that goal, with one exception. Pursuant to Green-e’s National Standard Version 2.1: “If the product meets 100% of a customer’s electricity use with eligible renewables, Green-e Energy allows a percentage of a product’s content to be satisfied by Renewable Portfolio Standard (“RPS”) state-mandated renewables up to the percentage RPS requirement.” Consequently, for Windsource® customers who purchased 100 percent of their electricity under the Windsource® program in 2019, twenty percent of the RECs associated with the energy these customers purchased were retired to meet the Renewable Energy Standard. The Commission approved this methodology as part of the Company’s 2010 RES Compliance Plan in Decisions No. C10-1033 and R10-0586 in Proceeding No. 09A-772E. Information describing the method of retiring RECs for 100% Windsource® customer sales has been provided to our Windsource® customers and is also available on the Windsource® pages on Xcel Energy’s website.

The Company charges a Windsource® premium to those customers who subscribe to the program. The 2019 Windsource® premium price was \$1.50 per 100 kilowatt-hour block, or 1.5¢/kWh, on a market basis. Premiums from sales under the Windsource® program are credited back to the RESA (\$3.1 million in 2019).

#### **D. Solar Energy**

The Company continues to integrate ever-increasing levels of solar energy with a combination of low-cost large-scale utility solar projects, community solar gardens, and private customer-sited solar options. Public Service offers customers a growing number

of renewable options such as Solar\*Rewards<sup>®</sup>, Solar\*Rewards<sup>®</sup> Community<sup>®</sup>, stand-alone net metering, and Renewable\*Connect<sup>®</sup> in addition to Windsource<sup>®</sup>.

#### **i. Utility Solar Installations**

Xcel Energy has continued its commitment to developing cost effective solar resources to benefit the greatest number of customers across the state. The Company purchases large-scale solar generation directly from sizable solar installations, many of which are located in the San Luis Valley in south-central Colorado.<sup>3</sup> Other utility-scale solar resources installed in recent years include Solar Star III (50 MW AC) and Comanche Solar (120 MW AC) (both of which came online in 2016), and Titan Solar (50 MW AC), which came online in 2018 as the resource for the Company's Renewable\*Connect program.

The Colorado Energy Plan Portfolio ("CEPP") approved by the Commission as part of the Company's 2016 Electric Resource Plan ("ERP") (Proceeding No. 16A-0396E) will add five additional utility-scale solar resources to the Company's system by the end of 2022.<sup>4</sup> These resources will result in over 700 MW of new solar and include two solar projects paired with a total of 225 MW of battery storage. These new solar resources will be located in Pueblo, Park, and El Paso counties, which substantially increases the geographic diversity of utility-scale solar across the state.

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<sup>3</sup> Solar installations in south-central Colorado include: the SunE Alamosa facility (6.20 MW ac), the SunPower Greater Sandhill facility (19 MW AC), the Iberdrola Renewables San Luis Valley Solar facility (30 MW AC), the Amonix at Solar Technology Acceleration Center ("Solar TAC") (0.484 MW), Sun E at Solar TAC (0.193 MW), and EPRI at Solar TAC (0.085 MW), and the Cogentrix Alamosa Solar Generating Project (30 MW AC).

<sup>4</sup> The Commission approved the Company's proposed Preferred Replacement Bids in Proceeding No. 19A-0530E (Decision No. R20-0285). The Preferred Replacement Bids (consisting of two individual projects: (1) a 100 MW solar with 50 MW/200 MWh storage project located in El Paso County; and (2) a 113 MW solar project located in Pueblo County) replace two solar projects originally approved as part of the CEPP, but for which the single developer was subsequently unable to deliver as bid.

Additionally, in 2019 the Company entered into an innovative, long-term agreement with EVRAZ North America (“EVRAZ”) and Lightsource BP to develop a new 240 MW solar facility in Pueblo. EVRAZ is Xcel Energy’s largest retail electric customer in Colorado and is one of Pueblo’s largest employers. Through this effort, Xcel Energy is supporting EVRAZ’s planned long-term investment in Colorado. The solar project, known as the Bighorn Solar project, will become one of the largest solar facilities in Colorado. Located on EVRAZ/Rocky Mountain Steel property, the facility will be the largest onsite solar facility dedicated to a single customer in the country.

Large-scale installations make solar power available at a low cost to the greatest number of people in the communities Xcel Energy serves. The Company supports the development of large, central solar because of the benefits that come with direct delivery and economies of scale for our customers.

## **ii. Private Solar Installations**

Additionally, more than 55,000 Xcel Energy customers in Colorado have private on-site or rooftop solar through either through the Company’s Solar\*Rewards® program or are interconnected outside the program as “Net Metered Only” systems. The Company’s Small program (with average system size of approximately 6 kW) now sees more PV systems being interconnected outside of its Solar\*Rewards Program than inside the program with Net Metered only interconnections reaching over 100 MW cumulatively in 2019.

Solar\*Rewards currently supports the installation of systems at several program levels—small systems up to 25 kilowatts and medium systems between 25.1 to 500 kilowatts. The program also has issued requests for proposals to support large systems

over 500 kilowatts. Through Solar\*Rewards, customers interested in installing solar systems at their homes or businesses receive incentives to participate in this program.

The 2016 Comprehensive Settlement Agreement allows the Company to acquire customer-sited solar up to 123 MW of solar energy from small installations, up to 72 MW from medium installations, and 30 MW for large installations from 2017 through 2019, at the annual capacities and incentive levels shown in the table below:

Solar*Rewards Incentives	2017		2018		2019		TOTAL
	Capacity (up to)	Incentive per kWh	Capacity (up to)	Incentive per kWh	Capacity (up to)	Incentive per kWh	
Small Option A	24 MW	\$0.005	24 MW	\$0.005	24 MW	\$0.005	123 MW
Small Option B	9 MW	\$0.0500	18 MW	\$0.0475	24 MW	\$0.0350	
Medium	24 MW	\$0.0475	24 MW	\$0.0425	24 MW	\$0.0375	72 MW
Large	6 MW	RFP	10 MW	RFP	14 MW	RFP	30 MW
<b>TOTAL</b>	<b>63 MW</b>		<b>76 MW</b>		<b>86 MW</b>		<b>225 MW</b>

Unused capacity allocated to Option B was to be rolled into Option A capacity according to Settlement terms however that was never necessary during the time of the 2017-19 Plan. Customer-owned and third-party owned systems receive the same incentive levels for a 20-year term. Small solar system capacity for systems less than or equal to 25 kW is released monthly with one-twelfth of the available capacity released each month. Medium system capacity for systems greater than 25 to 500 kW is released quarter with 25 percent of the annual capacity allocated each quarter.

Large-solar system capacity is released and awarded through a competitive Request for Proposal (“RFP”) process for net metered systems greater than 500 kW in

size, capped at 120 percent of the customers' annual load. The RFP requests proposed pricing for the Company to purchase RECs from the production of the solar array. Price is typically the primary differentiator and selection criteria. In addition to the REC incentive, the customer(s) will receive net energy metering credits.

A Low-Income Rooftop Solar program was added under the Comprehensive Settlement Agreement and adds up to 300 systems over a three-year period: up to 75 systems in 2017; 100 systems in 2018 and 125 systems in 2019. Systems can be sized up to 3.5 kW.

### **iii. Community Solar Gardens**

The Community Solar Garden ("CSG") market is continuing to expand in Colorado and is widely available throughout the Company's service territory. By the end of 2019 there were 93.2 MW of CSGs operational and a 320.7 MW either operational or with project capacity awarded.

Public Service launched Solar\*Rewards Community® ("S\*RC") in Colorado in 2012, after the state became one of the first to approve the solar garden concept in 2010. In Colorado, the Company enables Solar\*Rewards Community for customers who want to participate in shared, centralized solar installations. CSGs are an option for customers who want to support solar energy but lack certain qualities (physical – roof space, shading, etc. or financial) to install systems on-site. Solar developers build community-based shared solar installations interconnected to Public Service's system and offer subscriptions with various purchase arrangements to customers.

The Company has grown a solid portfolio of solar garden projects, and with the additional capacity and segmenting from the Comprehensive Settlement, this portfolio has become even more robust in 2017-2019, with program capacities as shown below:

<b>Community Solar Garden Capacity (MW)</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>TOTAL</b>
Minimum	15	15	15	<b>45</b>
Maximum <sup>5</sup>	30	35	40	<b>105</b>
100% Low-income CSGs	4	4	4	<b>12</b>
<b>Total</b>	<b>34</b>	<b>39</b>	<b>44</b>	<b>57 to 117</b>

#### **iv. Renewable\*Connect®**

Renewable\*Connect allows customers to subscribe to solar output from a 50 MW solar energy installation located in Deer Trail, Colorado (Arapahoe County), which came online in late December 2018, and thus 2019 was the program's first year of operations. The program offers competitive pricing, flexible subscription terms, and no program costs subsidized by non-participant customers. Subscribers have full rights to the clean energy benefits from the solar energy produced, as RECs are retired on behalf of subscribers and will not be included in RES accounting.

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<sup>5</sup> Annual maximum includes up to 0.5 MW non-low income standard offer CSG, up to 2 MW of Company-owned low-income CSGs and 0.5 low-income standard offer.

## **II. 2019 Results**

### **A. Non-Distributed Generation**

As a result of prior filings, the Company currently has over 3,100 MW of wind generation capacity on its system that qualifies as Non-DG eligible energy resources. The Company acquires the full electrical output as well as all RECs produced from these wind resources for compliance with the Non-DG portion of the RES. Most of the generation from these facilities is eligible for the 1.25 REC multiplier when used for compliance with the exception of the 249 MW Golden West wind farm that went commercial at the end of 2015 and the 600 MW Rush Creek farm that went commercial at the end of 2018. The Company currently has 15 operational large wind resources that are considered Non-DG for RES compliance (see Attachment C).

### **B. Windsource®**

In 2019, nearly 60,000 residential and commercial/industrial Colorado customers purchased over 209,000 MWh of Windsource® and contributed \$3.1 million to the RESA account.

### **C. Wholesale DG**

The Company currently has 172 MW of resources which qualify as Wholesale DG resources for RES compliance. This includes various hydroelectric resources, landfill gas resources, photovoltaic solar resources, and wind resources. All of the generation from these facilities is eligible for the 1.25 REC multiplier when used for compliance with the Colorado RES. The following resources are currently operational and are considered as Wholesale DG for RES compliance (see Attachment C):

SunE Alamosa Solar  
Cogentrix Solar  
Greater Sandhill Solar (I & II)  
San Luis Solar (Iberdrola)  
SolarTAC (EPRI)  
Northern Colorado Wind II  
NREL Siemens  
Waste Management/ Aurora Disposal  
Ames  
Georgetown (I & II)  
Salida II  
Shoshone  
Tacoma (I & II)  
Betasso/Silver Lake/ Lakewood  
Dillon Dam  
Foothills  
Hillcrest  
Roberts Tunnel  
Strontia Springs  
Gross Reservoir  
Redlands  
Grand Valley  
Orchard Mesa

#### **D. Retail Distributed Generation**

At the end of 2019, the Company had more than 450 DC MW of retail distributed generation on our Colorado system.

##### **i. Solar\*Rewards**

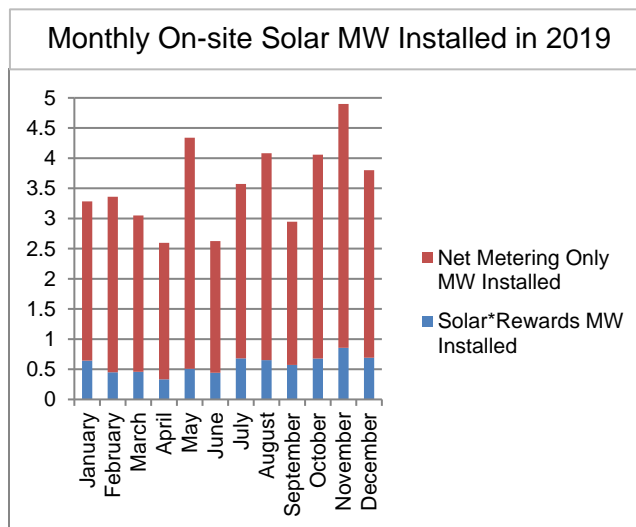
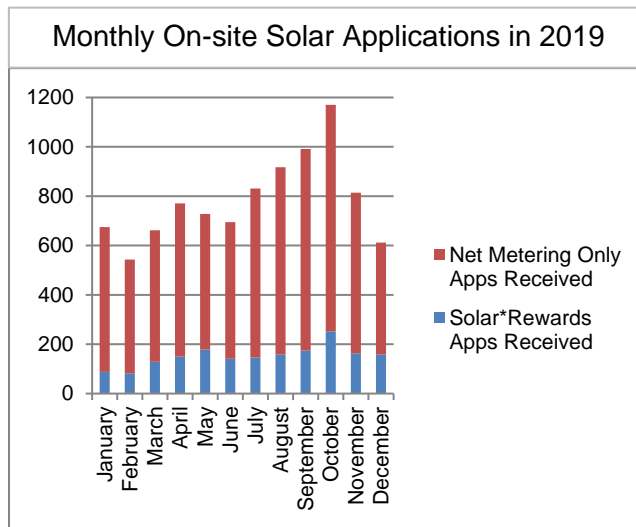
In 2019, the Company received 1,819 Solar\*Rewards applications for small systems. 1,072 small solar systems were installed for a total of nearly 7 MW.<sup>6</sup> No applications were received for Option B during 2019, and that capacity was made available in 2019 in accordance with the Comprehensive Settlement Agreement terms. For 2019 the Company is continuing to see more applications for smaller systems

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<sup>6</sup> Systems are not always installed in the same calendar year in which applications are received.



(systems up to 25 kW) being interconnected outside of its Solar\*Rewards Program (commonly referred to as Net Metered Only systems) than inside the program. Over 7,500 Net Metered Only applications were received and more than 6,000 were installed for a total of nearly 36 MW. The Charts below show the number of applications in terms of number of application received and capacity installed.



For medium systems in 2019, 121 total applications were received and 52 systems were installed for a total of approximately 11.75 MW. The Medium Program capacity was opened on a quarterly basis with 6 MW per quarter. The Company saw a continued slowing trend with the quarterly capacity allocation as there was excess capacity in each quarter of 2019.

The Company announced its Solar\*Rewards Large Request for Proposal (“RFP”) on April 1, 2019, for customer-sited projects. The RFP sought up to 14.79 MW of net-metered projects larger than 500 kW.<sup>7</sup> Public Service received eight bids from five different solar developers. The table below presents the projects that were awarded capacity in the RFP. All timelines were given an automatic 90-day extension due to COVID-19.

<b>Developer Name</b>	<b>Customer</b>	<b>MW<sub>DC</sub></b>	<b>Proposed COD date</b>
Namaste Solar	City of Boulder - 63rd St Wastewater Treatment Facility	0.82764	4/1/2020
REC Solar	TruStile Doors, LLC	0.999	6/15/2020
Oak Leaf Energy Partners	DIA 7A	3.948	10/14/2020
Oak Leaf Energy Partners	DIA 7B	4.48	10/14/2020
Oak Leaf Energy Partners	DIA 7C	4.48	10/14/2020

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<sup>7</sup> 0.79 MW was rolled over from the 2018 RFP.

## **ii. Energy Storage**

2019 was a productive year in which the Company continued its engagement with installers and manufacturers directly to review proposed Energy Storage Systems (ESS) through an initial review process to confirm they meet the storage principles and guidelines agreed to in the Distribution Grid and Interconnection Stakeholder (“Grid” Stakeholder Group). 36 ESS design configurations have been approved through the initial review process providing a variety of options for customers to interconnect batteries. Subsequent applications are compared with the initial review documents for expedited approval of the official applications.<sup>8</sup> At the end of 2018, the Company had 265 applications received with 282 systems installed. Cumulatively, by the end of 2019 had 631 applications received with 506 installations. The Company’s Solar\*Rewards program team along with Distribution Engineering have continued their outreach opportunities with developers to do equipment reviews in order to streamline the application process.

## **iii. Solar\*Rewards Community – Solar Gardens**

In April 2019 the program released both the 2019 RFP and 2019 100 percent low-income serving RFP in tandem with awards taking place in June 2019. Both RFPs issued in 2019 received ample responses from developers similar to the demand received in previous RFPs. Bids included unique aspects including subscriber mix commitments, community inclusive characteristics and competitive REC bidding; all of which were incorporated into the bid review process. At the time of this filing the associated standard offers for all three RFPs have remaining capacity for projects

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<sup>8</sup> In 2018 there were 15 ESS design configurations.

between 10kW and 100kW to be submitted. The program is expected to have nearly 120MW of active CSG capacity by the end of 2020.

The 2019 RFP and 2019 100 percent low-income serving RFP issued awards for the maximum available capacity in the RFP, 37 MW from the standard and 4 MW of 100 percent Low-Income serving CSGs. Over 20 MW of the 37 MW awarded in the standard RFP resulted in capacity serving Residential Rate Class customers, over double the 10 MW target listed in the RFP. The awards included commitments that will result in thirteen internships and thirteen \$15,000 scholarships for Colorado students studying renewable energy or a related field. The Low-Income RFP results in 4MW of awards, one project being sited in Lakewood in an urban location with commitments to serve the Lakewood community. Overall, these projects will create a positive revenue stream to the RESA in excess of two million dollars over 20 years through payments from the solar developers that will go towards funding other renewable projects in the future.

During 2019, the Company worked closely with the CSG development community to address interconnection challenges. We took several approaches to address these challenges, such as introducing a provisional study option which allows for two interconnection locations to be studied concurrently per existing CSG award and providing developers with customer options meeting following the interconnection screen, study, and design to provide insight into PSCo finding beyond what was included in the report. We also capped individual project studies at \$7,000 per awarded projects with using RESA funds to costs in excess of the \$7,000. For these studies, this was a new use of RESA funds but we felt the expenditures were appropriate to assist in the interconnection of projects and fall under funds used for administration of the

program. Per Commission Rule 3661(d) administrative costs are capped at ten percent of annual RESA collections. Thus far we have spent approximately \$73,000 towards these studies.

**iv. Renewable\*Connect**

2019 was the first full year of operations for the Renewable\*Connect program. From the Settlement Agreement reached in Proceedings 16AL-0048E and 16A-0055E In the Settlement Agreement Public Service agreed to file with the Commission annual reports including total program expenditures, total revenues, number of participants, program term capacities, unsubscribed energy volumes, excess revenue applied to the RESA, participation by rate class, and number and capacity of customers on the waitlist.<sup>9</sup> The Company has chosen the RES Report as the vehicle to report this information as it can be compared to other renewable energy programs and is providing work papers to Commission Staff in support of the information provided below. Below are summaries the program results for 2019.

**a. Program Participation.**

The program was essentially fully subscribed during 2019 with light customer turnover. The Company maintains a waitlist for the program and can quickly replace customers who choose to exit the program. The tables below report the program participation by rate class, by contract term, and the waitlist.

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<sup>9</sup> Decision No. C16-1075.

Customer Count by Rate Class				
	R	C	SG	PG
<b>Count</b>	2,549	555	147	13
Program Capacity by Rate Class				
	R	C	SG	PG
<b>kW</b>	6,680	3,011	31,736	8,565

Customer Count by Term			
Count	MTM	5 Year	10 Year
		949	735
Capacity by Term			
kW	MTM	5 Year	10 Year
	2,085	2,595	44,619

Waitlist		
	Residential	Business
<b>Count</b>	2,258	127
<b>kW</b>	6,015	176,077

**b. Program Financial Performance**

2019 was a successful first year of operations for Renewable\*Connect. With full subscription the program was able to generate revenues in excess of program costs and thus yield program earnings. Per the Settlement Agreement in the aforementioned Proceedings, the Company can retain earnings up to its weighted average cost of capital (WACC) with any excess earnings contributed to the RESA. The table below reports the program revenues, costs, earnings (both retained by the Company and contributed to the RESA). Included is the unsubscribed energy volumes to from the light customer churn in the program.

<b>2019 Financial Performance</b>	
<b>Revenues :</b>	
R*C Customer Charges	\$4,012,216
<b>Costs:</b>	
Purchase Power	\$3,537,664
Solar Integration	\$37,083
Program Administration	\$8,332
<b>Earnings:</b>	<b>\$429,137</b>
Company (6.87%)	\$246,174
RESA	\$182,963
<b>Unsubscribed Energy</b>	
<b>kWh</b>	145,582

The excess earnings were credited to the RESA in March 2020. As mentioned with essentially full subscription and a strong waitlist, the Company was able to keep program administration costs low. That, and with little to no IT costs kept overall program costs minimized to just the purchase power cost. The Company expects that 2020 will return similar results.

#### **v. REC Tracking & Compliance**

The Company tracks RECs through an internal REC tracking system and also the Western Renewable Energy Generation Information System ("WREGIS") system. Commission Rule 3659(j) requires all renewable energy resources 1 MW and larger to be registered with WREGIS. WREGIS is a third-party REC tracking and verification system for the western states (including Colorado), developed through a collaborative effort between the Western Governors Association, the Western Regional Air Partnership, and the California Energy Commission. The Company, through Xcel Energy Services Inc. ("XES"), participates in the Stakeholder Advisory, Policy and

Change Control Committees of WREGIS. The Company believes that WREGIS and other regional REC tracking and verification systems add significant credibility to, and aid in the development of, REC markets. Xcel Energy's registered generating facilities have been uploading data to WREGIS since the last quarter of 2008.

During the 2019 compliance year, the Company used its internal REC tracking database to retire RECs from distributed generation solar facilities under 1 MW for 2019 RES compliance. Any WREGIS RECs that were used for 2019 compliance, Renewable\*Connect, Certified Renewable Percentage (CRP), or Windsorce® were also retired in WREGIS. During the 2019 compliance year the Company maintained its internal REC tracking database and WREGIS in tandem.

For 2019, the Company is making two adjustments within its Attachment C to not only true-up in-state bonus RECs that were incorrectly carried forward from 2018 but also correct some Retail DG reporting. The Company determined that some bonus RECs were not accounted for properly during the carryover process at the end of the 2018 compliance report. These bonus RECs have been modified in column b of to ensure the REC quantity matches the inventory in the Company's WREGIS Account and Internal REC Tracking System. The Company also determined that it retired fewer Retail DG RECs than reported in past years; the reconciliation is displayed in column j where the Company deducts additional Retail DG RECs to account for the variance.

#### **A. Certified Renewable Percentage**

The Certified Renewable Percentage ("CRP") is a voluntary information offering under which the Company will retire RECs above its Renewable Energy Standard compliance requirements, so that the total RECs retired in each calendar year will be



equal to the total renewable energy delivered to retail customers from the Company's system. This incremental retirement in each calendar year would allow retail customers to better account for and claim the renewable energy delivered from the Company's system in their efforts to satisfy their specific renewable energy goals. The CRP is discussed in much greater detail, including a detailed formula, in Proceeding No. 19AL-0268E, especially in Mr. Jack Ihle's Direct and Rebuttal Testimony.

In Proceeding No. 19AL-0268, Decision C20-0096\_19AL-0268E, the Commission directed Public Service to work with interested intervenors in that Proceeding to improve the CRP implementation before initiating the offering. Public Service did so, and filed with the Commission a Notice of Public Service Company of Colorado Regarding the Certified Renewable Percentage on April 13, 2020. Within that Notice, Public Service and other parties agreed to some implementation and reporting actions to enhance the value of the CRP. Most notably for this Proceeding, Public Service forecasted a likely trajectory for the increase of the CRP value over the next several years. Public Service and the interested intervenors agreed that Public Service will make a good faith effort to steadily increase the CRP value over time, starting at approximately 30 percent in 2020 and reaching 55 percent in 2026.

The Company is reporting the CRP for this first time and is providing further detail of that calculation as part of Attachment B to this Report. For 2019 the CRP is 21.8 percent. This value will also be available to interested parties on the Company's web site and will also be reported in the annual Community Energy Reports.

## **B. Demonstration of Compliance**

In order to demonstrate compliance with the Colorado 2019 RES, Public Service has included several attachments to this report providing the data identified in Rule 3662, which are set forth in Attachment A, Rule Requirements.

Attachment B shows the Company's 2019 actual retail energy sales and lays out the resulting Renewable Energy Standard compliance requirements which flow from those sale numbers. As mentioned above the Company is also reporting the CRP for 2019 in this Attachment.

Attachment C, Renewable Energy Credit Compliance Summary, is similar to Tables 4-2 and 4-3 as originally filed in our 2017 RES Compliance Plan, Volume 2. The numbers reflect actual RECs generated in 2019 and RECs used for compliance in 2018.

Attachment D compares the 2019 RESA forecasted expenditures and revenues to the actual expenditures and revenues. It also compares the 2019 forecasted RESA deferred account balance and the 2019 actual RESA deferred account balance. The Company designed this attachment so that it reflects the relevant information contained in Tables 7-2 (a) – (c) as filed in the Direct Testimony of Robin L. Kittel, Attachment RLK-2, in the 2017 Plan. Although Attachment D reflects the actual totals by column, it also contains a breakdown of the actual costs by individual resource. This segregation of costs by resource allows one to easily assess the resources that contributed to the actual RESA costs for 2019.

Attachment E sets forth each individual resource that has costs that are allocated between the RESA and ECA and provides the incremental costs for each resource expressed as \$/MWh charged in 2019. Set forth at the bottom of the attachment are the

adjustments, if any, made to the \$/MWh figure. Second, Attachment E shows the Average Hourly Incremental Cost (“AHIC”) for 2019 and volumes of Solar\*Rewards that elected to sell excess kWh credits to the Company per Rule 3664 (b). The AHIC is also used to compensate Solar\*Rewards Community garden owners for unsubscribed energy required by Rule 3665 (c)(V). The 2019 volumes of the unsubscribed energy are also shown in Attachment E.

As part of Commission Decision No. C11-1080 approving the Company’s 2010 RES Compliance Plan, the Commission directed the Company to provide comparisons between the modeled incremental costs and the actual incremental costs of eligible energy resources that are charged against the RESA account, and to provide an explanation of significant deviations. Attachment D provides the modeled costs as compared to actuals where Attachment F explains the differences between the modeled costs and the actual costs of eligible energy resources to the extent the variance is notable.

Attachment G provides a table with all S\*RC projects that are either operational or that have been awarded and in various stages of development.

Attachment H lists all Solar\*Rewards Community contracts signed since the Company’s last Compliance Report and due to the voluminous nature of the contracts will provide individual contracts upon request.

Attachment I contains the Solar\*Rewards Community volumes and corresponding billing credits per rate class, the average hourly incremental cost and the total number of unsubscribed kWhs as required by Rule 3662 (a)(XVIII). Also included in Attachment I are associated metrics regarding low-income subscriptions.

Attachment J contains the Colorado Energy Office's 2019 Report on its Solar for Low-income and the Weatherization Assistance Program. This report is required to be filed in the 2017-2019 RES Reports as required per the Comprehensive Settlement Agreement.

Finally, Attachment K summarizes activities associated with three of the Stakeholder Groups (other than the Pilot Stakeholder Group) that were formed following that proceeding. Summaries include discussion items and outcomes including any recommendations that the Company has for next steps.

Because the Company is not claiming that the retail rate impact cap limitation inhibited its ability to meet the requirements, there is no need to report the data required in Subsection (a) (XIV) of Rule 3662.

In compliance with Rule 3662 (XV), the Commission has approved the Company's methodology for calculating the retail rate impact for the 2019 RES compliance year. Because the Company is not claiming that the retail rate impact cap limited its ability to comply with the 2019 RES, no modifications pertaining to the calculation of the retail rate impact for 2019 were necessary.

The Company is providing the Commission with an electronic copy of this filing, as well as posting it on the Company's website at [www.xcelenergy.com](http://www.xcelenergy.com) under "Filings" in the Rates and Regulations directory.

# Attachment A

## Code of Colorado Regulations 4 CCR 723-3

### **3662. Annual RES Compliance Report.**

- (a) Each investor owned and cooperative electric association QRU shall file an annual RES compliance report no later than June 1 to report on the status of the QRU's compliance with the RES for the most recently completed compliance year. Unless expressly noted otherwise, the annual RES compliance report of each investor owned and cooperative electric association QRU shall provide the following information for the most recently completed compliance year.
- (I) The total MWH sold by the QRU to its retail customers in Colorado and the associated eligible energy required for compliance with the RES, including the requirements for retail renewable distributed generation and wholesale renewable distributed generation, as applicable.
  - (II) The total amount and source of eligible energy and RECs acquired by the QRU during the compliance year for to meet the RES, including the requirements for retail renewable distributed generation and wholesale renewable distributed generation, as applicable. The QRU shall separately identify and quantify amounts of eligible energy and RECs by each type of resource, including residential retail renewable distributed generation and nonresidential renewable distributed generation, as applicable. The QRU shall also separately identify eligible energy and RECs generated by early eligible energy resources.
  - (III) The total amount of RECs by category acquired by the investor owned QRU during the compliance year and the total amount and source of eligible energy generated by the QRU-owned eligible energy resources.
  - (IV) The total amount of eligible energy and RECs borrowed forward, pursuant to rule 3654, in previous compliance years that were made up during the compliance year to achieve compliance with each component of the RES.

- (V) The total amount of eligible energy and RECs borrowed forward, pursuant to rule 3654, from future compliance years to achieve compliance with each component of the RES in the compliance year.
- (VI) The total amount and source of eligible energy and RECs the QRU is carrying back from the year following the compliance year under rule 3654 to achieve compliance with each component of the RES in the compliance year.
- (VII) The total amount of eligible energy and RECs the QRU has carried forward from prior calendar years under rule 3654 to apply in the compliance year for each component of the RES.
- (VIII) The total amount of eligible energy and RECs the QRU has acquired in the compliance year that the QRU proposes to carry forward under rule 3654 to future years for each component of the RES.
- (IX) The total amount of eligible energy and RECs the QRU has counted toward compliance with the RES, including the requirements for retail renewable distributed generation and wholesale renewable distributed generation, as applicable, in the compliance year. The QRU shall separately identify amounts of renewable energy by each type of resource and eligible energy or RECs generated by early eligible energy resources.
- (X) The total amount of renewable energy or RECs acquired by the QRU during the compliance year pursuant to the SRO program.
- (XI) The total amount of RECs retired by the investor owned QRU during the compliance year pursuant to a voluntary green pricing program.
- (XII) The total amount of RECs sold or traded by the investor owned QRU during the compliance year along with the profit and losses of such transactions and the method for calculating these margins.

- (XIII) Whether the QRU has invested in any eligible energy resource and whether that resource is under construction or in operation.
- (XIV) The funds expended from the RESA account and other revenue sources and the retail rate impact of the eligible energy and RECs acquired by the investor owned QRU. If the investor owned QRU has not acquired sufficient eligible energy and RECs to meet the RES under rule 3654 or the requirements for renewable distributed generation under rule 3655 due to the retail rate impact cap under rule 3661, the retail rate impact cap shall be recalculated based on the actual compliance year values. To the extent the recalculation of the retail rate impact cap demonstrates that additional funds are available based on actual compliance year values, the investor owned QRU shall use those additional funds to acquire RECs, to the extent necessary, to achieve the compliance levels set forth in rules 3654 and 3655 or until the additional funds have been spent if the investor owned QRU intends to claim that the retail rate impact cap prevented it from achieving compliance with the standard.
- (XV) A description of the method used to develop the retail rate impact calculation.
- (XVI) The proposed calculation of on-going annual net incremental costs for eligible energy resources that will come on line prior to the end of the following compliance year that have not been locked down pursuant to an investor owned QRU's compliance plan filing.
- (XVII) The funds advanced by the investor owned QRU during the compliance year, if any, to augment the amounts collected from retail customers through the RESA.



- (XVIII) The average hourly incremental cost of electricity during the compliance year, the total number of CSG kWh which were unsubscribed for each CSG during that period, and the total kWh and corresponding billing credits paid to CSG subscribers during the compliance year by each retail rate class for each CSG.
- (b) In the annual RES compliance report filed by the investor owned or cooperative electric association QRU, the QRU must explain whether it achieved compliance with the RES, including the requirements for retail renewable distributed generation and wholesale renewable distributed generation, as applicable, during the most recently completed compliance year, or explain why the QRU had difficulty meeting the RES or the requirements for retail renewable distributed generation and wholesale renewable distributed generation, as applicable.
- (c) If, in its annual RES compliance report, the investor owned QRU did not comply with its RES as a direct result of absolute limitations within a requirements contract from a wholesale electric supplier, then the QRU must explain whether it acquired a sufficient amount of either eligible RECs or documented and verified energy savings through energy efficiency and/or conservation programs, or both to rectify the noncompliance so as to excuse the investor owned QRU from any administrative fine or other administrative action.
- (d) On the same date that the investor owned or cooperative electric association QRU files its annual RES compliance report, the QRU shall post its annual compliance report excluding confidential material on its website to facilitate public access and review.
- (e) On the same date that the investor owned or cooperative electric association QRU files its annual RES compliance report, if the QRU did not file using the Commission's E-Filings System, it shall provide the Commission with an electronic version of its annual compliance report excluding confidential material. The Commission may place the non-confidential portion of each QRU's annual compliance report on the Commission's website in order to facilitate public review.

- (f) Each qualifying wholesale utility shall submit an annual report to the Commission no later than June 1 of each year. In addition, the qualifying wholesale utility shall post each annual report on its website. In each annual report, the qualifying wholesale utility shall:
- (I) describe the steps it took during the most recently completed compliance year to comply with the RES of 20 percent of retail sales by 2020 as established in § 40-2-124(8), C.R.S.;
  - (II) for the compliance years before 2020, describe whether it is making sufficient progress toward meeting the standard in 2020 or is likely to meet the 2020 standard early. If it is not making sufficient progress toward meeting the standard of 20 percent in 2020, it shall explain why and shall indicate the steps it intends to take to increase the pace of progress; and
  - (III) for the 2020 compliance year and each compliance year thereafter, describe whether it has achieved compliance with the RES established in § 40-2-124(8), C.R.S., and whether it anticipates continuing to do so. If it has not achieved such compliance or does not anticipate continuing to do so, it shall explain why and shall indicate the steps it intends to take to meet the standard and by what date.

# Attachment B

2019 Renewable Energy Standard Compliance Report  
 Public Service Company of Colorado  
 Attachment B

2019 Forecasted Renewable Energy Standard Compliance Amounts

Row					Notes	%
1	Colorado Retail Electric Sales	0	0	29,153,356 MWh		100.00%
2	Total RES Requirement	0	0	5,830,671 RECs	20% × (1) Colorado Retail Electric Sales	20.00%
3	DG Requirement	0	0	583,067 RECs	2% × (1) Colorado Retail Electric Sales	2.00%
4	Retail DG RES Requirement	0	0	291,534 RECs	50% × (3) DG Requirement	1.00%
5	Wholesale DG RES Requirement	0	0	291,533 RECs	(3)DG Requirement - (4) Retail DG RES Requirement	1.00%
6	Non-DG RES Requirement	0	0	5,247,604 RECs	(2)Total RES Requirement - (3) DG Requirement	18.00%

Summary Compliance Table Disaggregated				
Compliance	0	0	5,830,671	
Windsorce Credit	0	0	(22,852)	
RECs (Retail DG)	0	0	(430,819)	
RECs (Wholesale DG)	0	0	(385,066)	
RECs (Non DG)	0	0	(3,958,860)	
Bonus RECs	0	0	(1,033,074)	
	0	0	0	0

Summary Compliance Table Aggregated				
Compliance	0	0	5,830,671	
Windsorce Credit	0	0	(22,852)	
RECs (Retail DG) + Bonus	0	0	(451,581)	
RECs (Wholesale DG) + Bonus	0	0	(481,331)	
RECs (Non DG) + Bonus	0	0	(4,874,907)	
	0	0	0	0
	0	0	0	0

Certified Renewable Percentage (CRP)

Fuel Type	2015	2016	2017	2018	2019
Solar	-	-	-	-	61,154
Wind	-	-	-	-	547,330
Biomass	-	-	-	-	612
Hydro	-	-	-	-	2,445
Additional RECs to retire	-	-	-	-	611,541

2019 CRP	=	$\frac{6,442,212}{29,564,304}$	=	21.8%
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# Attachment C

Attachment C - Renewable Energy Credit Compliance Summary  
 Public Service Company of Colorado  
 2019 Renewable Energy Standard Report

Row	RECs Carried	REC	Retail RECs obtained after Boulder & Wholesale Transfers	RECs Retired for Windsources, R*C, and CRP	REC Sales to 3rd Parties	Total RECs Available	In-State 25% Bonus	Additional Community 50% Bonus	Total RECs + Bonus Available	REC Adjustments	RECs Retired For	Bonus RECs Applied towards	RECs + Bonus Retired For	Ending Balance of RECs + Bonus	Estimated Ending Balance of RECs Carryover															
																2014-2018 *1)	2014-2018 *2)	2019	2019	2019	2014-2019	25% Bonus	50% Bonus	for 2019 RES	for prior years	2019 RES	2019 RES	2019 RES	2019 RES	w/o bonus
																a	b	c	d	e	f	g	h	i	j	k1	k2	l	m	n
<b>Renewable Resources</b>																														
Column Reference Calculation																														
						$f=(a+b+c-d-e)$	$g \leq (f \times 25\%)$		$h=(f+g+h)$																					
1	<b>Retail DG Solar Systems</b>																													
2		220,477	16,021	127,344		363,842	17,859		381,701	-	110,795	5,779	116,574	265,127	253,047															
3	Small Customer-Owned (<25 kW)	242,328	6,092	113,364		361,784	17,835		379,619	-	126,255	6,585	132,840	246,779	235,529															
4	Small Third Party Developer (<25 kW)	227,638	4,041	120,425		352,104	17,306		369,410	(60,951.00)	112,497	5,867	118,364	190,095	178,656															
5	Medium 1 (25.01 - 500 kW)																													
6	RFP Large	21,231	14,703	19,976		55,910	2,748		58,658	(17,912.00)	18,022	940	18,022	21,784	19,976															
7	RFP Large (COSR)	62,674	-	28,402		91,076	4,486		95,562	-	30,501	1,591	32,092	63,470	60,575															
8	REC Only	2,981	17	1,499		4,497			4,497	(1,499.00)	1,499		1,499	1,499	1,499															
9	SR Community	77,610	(13,842)	85,326		149,094		1,855.00	150,949	(47,109.00)	16,639	-	16,639	87,181	85,326															
10	SR Community Solar Gardens	32,461	-	42,675		75,136			75,136		14,591		14,591	60,545	60,545															
11	<b>Total Retail DG Solar</b>	<b>887,399</b>	<b>27,032.72</b>	<b>539,011.41</b>	<b>-</b>	<b>1,453,443</b>	<b>60,234.00</b>	<b>1,855.00</b>	<b>1,515,532</b>	<b>(127,471)</b>	<b>430,819</b>	<b>20,762</b>	<b>451,581</b>	<b>936,480</b>	<b>895,153</b>															
12	<b>Wholesale DG Solar Systems</b>																													
13	<b>Power Purchase w/RECs:</b>																													
14		48,295	(4,361)	15,554		59,488	14,872		74,360		7,016	1,754	8,770	65,590	52,472															
15	SunE Alamosa																													
16	Cogentrix	233,221	(26,481)	44,980		251,720	62,930		314,650		44,612	11,153	55,765	258,885	207,108															
17	Greater Sandhill I	80,732	(23,949)	24,722		81,505	20,376		101,881		5,614	1,403	7,017	94,864	75,891															
18	Greater Sandhill II	80,732	5,789	22,250		108,771	27,193		135,964		6,139	30,695	105,269	84,215	84,215															
19	San Luis Solar	305,611	(33,219)	76,325		348,717	87,179		435,896		56,042	14,010	70,052	365,844	292,675															
20	SunE at SolarTAC	345	(69)	-		276	69		345		141	35	176	169	135															
21	Amoix at SolarTAC	10	(2)	-		8	2		10		8	2	10	0	-															
22	EPRI at SolarTAC	577	(69)	110		618	155		773		120	30	150	623	498															
23	<b>Total Wholesale DG Solar</b>	<b>749,523</b>	<b>(82,361)</b>	<b>183,941</b>	<b>-</b>	<b>851,103</b>	<b>212,776</b>	<b>-</b>	<b>1,063,879</b>	<b>-</b>	<b>138,109</b>	<b>34,526</b>	<b>172,635</b>	<b>891,244</b>	<b>712,994</b>															
24	<b>Wholesale DG Wind</b>																													
25	<b>Company Owned Generation</b>																													
26		9,537	(3,479)	-		6,058	1,515		7,573		6,058	1,515	7,573	0	-															
27	Ponnequin II																													
28	Ponnequin III																													
29	Ponnequin IV	9,537	(3,479)	-		6,058	1,515		7,573		6,058	1,515	7,573	0	-															
30	Ponnequin V	9,537	1,392	-		10,929	2,732		13,661		10,929	2,732	13,661	0	-															
31	Ponnequin VI	9,537	(3,635)	-		5,902	1,476		7,378		5,902	1,476	7,378	0	-															
32	<b>Power Purchase w/RECs:</b>																													
33	Northern Colorado Wind II	227,500	(23,506)	47,593		251,587	62,897		314,484		41,709	10,427	52,136	262,348	209,878															
34	NREL Siemens	3,808	1,136	387		5,331	1,333		6,664		1,585	396	1,981	4,683	3,746															
35	Ponnequin I	-	-	-		-	-		-		-	-	-	-	-															
36	Ridgecrest	111,922	(19,371)	-		92,551	23,138		115,689		37,482	9,371	46,853	68,836	55,069															
37	<b>Total Wholesale DG Wind</b>	<b>371,841</b>	<b>(47,463)</b>	<b>47,980</b>	<b>-</b>	<b>372,358</b>	<b>93,091</b>	<b>-</b>	<b>465,449</b>	<b>-</b>	<b>103,665</b>	<b>25,917</b>	<b>129,582</b>	<b>335,867</b>	<b>268,093</b>															
38	<b>Wholesale DG Biomass</b>																													
39	<b>Power Purchase w/RECs:</b>																													
40		83,183	(9,269)	18,902	612	92,204	23,051		115,255		15,466	3,866	19,332	95,923	76,738															
41	75th St Digester																													
42	WM Deirer/Aurora Disposal Site	83,183	(9,269)	18,902	612	92,204	23,051		115,255		15,466	3,866	19,332	95,923	76,738															
43	<b>Total Wholesale DG Biomass</b>	<b>83,183</b>	<b>(9,269)</b>	<b>18,902</b>	<b>612</b>	<b>92,204</b>	<b>23,051</b>	<b>-</b>	<b>115,255</b>	<b>-</b>	<b>15,466</b>	<b>3,866</b>	<b>19,332</b>	<b>95,923</b>	<b>76,738</b>															



Attachment C - Renewable Energy Credit Compliance Summary  
 Public Service Company of Colorado  
 2019 Renewable Energy Standard Report

RECs Carried	REC	Retail RECs obtained after Boulder & Wholesale Transfers 2019	RECs Retired for Windsources, R*C, and CRP 2019	REC Sales to 3rd Parties 2019	Total RECs Available 2014-2019	In-State 25% Bonus Available*(3)	Additional Community 50% Bonus Available*(3)	Total RECs + Bonus Available for 2019 RES Compliance	REC Adjustments for prior years 2019	RECs Retired For 2019 RES Compliance	Bonus RECs Applied towards 2019 RES Compliance	RECs + Bonus Retired For 2019 RES Compliance	Ending Balance of RECs + Bonus 2019 RES Compliance	Estimated	
														Ending Balance of RECs + Bonus	Ending Balance of RECs + Bonus
														Ending Balance of RECs + Bonus	Ending Balance of RECs + Bonus
Forward	True Up													Ending Balance of RECs + Bonus	
2014-2018 *(1)	2014-2018 *(2)	2019	2019	2019	2014-2019	25% Bonus	50% Bonus	for 2019 RES	for prior years	2019 RES	2019 RES	2019 RES	2019 RES	2019 RES	2019 RES
Renewable Resources															
Non-DG Wind															
Company-Owned Generation:															
86	Rush Creek	366,546	16	1,970,930	547,330			1,790,162	-					1,790,162	1,790,162
Power Purchase w/RECs:															
89	Cedar Creek	1,741,070	(348,214)	339,697	282,494	1,450,059	362,515	1,812,574		413,994	103,499	517,493	1,295,081	1,036,065	
90	Cedar Creek II	1,150,291	(230,058)	559,144	398,146	1,081,231	270,308	1,351,539		294,419	73,605	368,024	983,515	786,812	
91	Cedar Point	2,928,284	(585,657)	589,975	207,859	2,724,743	681,186	3,405,929		487,395	121,849	609,244	2,796,685	2,237,348	
92	Colorado Green	1,364,391	(272,878)	416,970	-	1,508,483	377,121	1,885,604		206,563	51,641	258,204	1,627,400	1,301,920	
93	Footo Creek III														
94	Golden West	2,623,918	-	767,683	-	3,391,601	-	3,391,601		273,216	-	273,216	3,118,385	3,118,385	
95	Limon Wind	1,817,417	(198,530)	592,608	357,055	1,854,440	463,610	2,318,050		341,958	85,489	427,447	1,890,603	1,512,482	
96	Limon Wind II	1,546,466	(210,156)	564,106	385,979	1,514,437	378,609	1,893,046		361,964	90,491	452,455	1,440,591	1,152,473	
97	Limon Wind III	1,576,877	(232,536)	716,363	393,186	1,667,518	416,880	2,084,398		377,209	94,302	471,511	1,612,887	1,290,309	
98	Logan	1,214,923	(147,281)	414,885	242,065	1,240,462	310,116	1,550,578		256,742	64,186	320,928	1,229,650	983,720	
99	Northern Colorado Wind I	1,450,525	(165,101)	300,093	22,000	1,563,517	390,879	1,954,396		286,413	71,603	358,016	1,596,380	1,277,104	
100	Peeetz Table	1,530,649	(245,473)	503,497	288,624	1,500,049	375,012	1,875,061		388,679	97,170	485,849	1,389,212	1,111,370	
101	Spring Canyon	601,649	(78,902)	163,049	78,492	555,304	138,826	694,130		142,282	35,571	177,853	516,277	413,022	
102	Twin Buttes	695,133	(50,841)	240,193	131,007	753,478	188,370	941,848		106,564	26,641	133,205	808,643	646,914	
103	Total Non-DG Wind	20,608,139	(2,765,611)	8,139,193	756,829	26,294,408	4,353,432	26,947,840	0	3,937,398	916,047	4,853,445	22,095,471	18,658,086	
Non-DG Solar															
106	Solar Star III	275,979	-	122,087	61,154	336,912	-	336,912		4,529	-	4,529	332,383	332,383	
107	Titan Solar	2,482	-	103,382	97,894	7,970	-	7,970		-	-	-	7,970	7,970	
108	Comanche Solar	609,460	-	257,281	86,741	866,741	-	866,741		16,933	-	16,933	849,808	849,808	
109	Total Non-DG Solar	887,921	-	482,750	159,048	1,211,623	-	1,211,623		21,462	-	21,462	1,190,161	1,190,161	
110	Total Non-DG	21,496,060	(2,765,611)	8,621,943	915,877	27,506,021	4,353,432	28,160,539	-	3,958,860	916,047	4,874,907	23,285,632	19,848,247	
111	Total Renewable Resources	24,307,846	(2,964,188)	9,588,148	918,934	27,383,464	4,944,400	1,855	32,329,719	(127,471)	4,774,745	1,033,074	5,807,819	26,394,429	
112		24,307,846	(2,964,188)	9,588,148	918,934	27,383,465	4,944,400	1,855	32,329,719	(127,471)	4,774,745	1,033,074	5,807,819	26,394,429	
113		21,343,658													
114				209,499						5,830,671					
115				97,894						(22,852)					
116				611,541						5,807,819					
117															
118															
119															
120															
121	Notes:														
122	(1) RECs presented are NET of transfers and do not include in-state bonus														
123	(2) WREGIS adjustments typically from bonus corrections, true-ups, and rounding														
124	(3) A 25% Bonus only applies to Retail DG RECs based on purchase transactions entered into prior to August 11, 2010														
125	Only Wholesale DG and Non-DG generators with COD ≤ 12/31/2014 (i.e. less than 01/01/2015) are eligible for the 25% bonus														
126	A 50% Bonus Applies to Community Based Projects per 3654(g)														
127	(4) 22,852 RECs retired for Windsources offsets the 2019 RES														
128															
129															

Summary Compliance Table	Summary Compliance Table Dis-aggregated	Summary Compliance Table Aggregated
Compliance	5,830,671	5,830,671
Windsources Credit	(22,852)	(22,852)
RECs (Retail DG, Wholesale DG, and Non DG)	(4,774,745)	(4,774,745)
Bonus RECs	(1,033,074)	(1,033,074)
RECs retired for Retail DG Adjustments	(127,471)	(127,471)









		Nameplate Capacity (MW-ac)	RECs Acquired	City of Boulder Transfers	Wholesale Wind Purchases	Wholesale Allocation	Total RECs Available	Capacity Factor Check
85	<b>Non-DG Wind</b>							
86	<u>Company-Owned Generation:</u>							
87		Rush Creek	600.00			0	1,970,930	37%
88	<u>Power Purchase w/RECs:</u>							
89		Cedar Creek	300.50			362,647	339,697	27%
90		Cedar Creek II	250.80			93,208	559,144	30%
91		Cedar Point	252.00			0	589,975	27%
92		Colorado Green	162.00			0	416,970	29%
93		Foote Creek III						
94		Golden West	249.40			0	767,683	35%
95		Limon Wind	200.00			82,694	592,608	39%
96		Limon Wind II	200.00			9,474	564,106	33%
97		Limon Wind III	200.60			24,065	716,363	42%
98		Logan	201.00			0	414,885	24%
99		Northern Colorado Wind I	151.80			4,064	300,093	23%
100		Peetz Table	199.50			0	503,497	29%
101		Spring Canyon	60.00			8,109	163,049	33%
102		Twin Buttes	75.00			0	240,193	37%
103	<b>Total Non-DG Wind</b>		8,723,454	0	0	584,261	8,139,193	
104								
105	<b>Non-DG Solar</b>							
106		Solar Star III	50.00			0	122,087	28%
107		Titan Solar	50.00			0	103,382	24%
108		Comanche Solar	120.00			32,660	257,281	28%
109	<b>Total Non-DG Solar</b>		515,410	0	0	32,660	482,750	
110								
111	<b>Total Non-DG</b>		9,238,864	0	0	616,921	8,621,943	
112								
113	<b>Total Renewable Resources</b>	Retail DG + Wholesale DG + Non-DG	10,242,211	11,932	0	642,131	9,588,148	
114								
115	<b>Notes:</b>							
116								
117	(1)							Retail DG solar capacity presented in DC; all other generators presented in AC

**Attachment C - Comparison  
 Public Service Company of Colorado  
 2019 Renewable Energy Standard Report**

		<b>RECs Acquired</b>		
<b><u>Renewable Resources</u></b>		<b>2017 RES Compliance</b>	<b>2019 RES Compliance</b>	<b>Percent</b>
Column Reference		<b><u>Plan*</u></b>	<b><u>Report</u></b>	<b><u>Difference</u></b>
Calculation		a	b	c
Row				(b-a)/a
1	<b><u>Retail DG Solar Systems</u></b>	939,187	539,011	<b>-43%</b>
2				
3	<b><u>Wholesale DG Solar Systems</u></b>	199,876	193,792	<b>-3%</b>
4				
5	<b><u>Wholesale DG Wind</u></b>	70,677	51,716	<b>-27%</b>
6				
7	<b><u>Wholesale DG Biomass</u></b>	20,198	20,157	<b>0%</b>
8				
9	<b><u>Wholesale DG Hydro</u></b>	188,287	198,671	<b>6%</b>
10				
11	<b><u>Non-DG Wind</u></b>	6,666,133	8,723,454	<b>31%</b>
12				
13	<b><u>Non-DG Solar</u></b>	444,853	515,410	<b>16%</b>
14				
15	<b>Total Renewable Resources</b>	8,529,210	10,242,211	<b>20%</b>

# Attachment D

**Attachment D**  
**Public Service Company of Colorado**  
**2019 Renewable Energy Standard Compliance Report**

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
	Total Renewable Energy Costs*					RESA Related Revenues				RESA Related Expenditures		RESA Balance				
	On-Site Solar Costs	Central Solar Costs	Wind Energy Costs	Other Renewable Energy Costs	Total Renewable Energy Costs	RESA Rider Revenue	Windsorce Revenue	REC Margins	Total RESA Revenue**	Incremental Costs	RESA/ WRGIS/ Windsorce ADM	Annual Excess / (Deficiency)	Interest	Annual Excess / (Deficiency)	Rolling Balance	
												Deferred Rolling Balance at December 31, 2018				\$48,578,155
Model - 2019	\$43,424,068	\$44,607,454	\$218,111,229	\$0	\$306,142,751	\$60,950,796	\$3,190,800	\$0	\$67,741,041	\$49,919,596	\$1,049,749	\$16,771,697	\$3,592,174	\$20,363,871	\$56,574,095	
Adjusted Actual 2018	\$37,463,528	\$54,805,687	\$133,054,102	\$0	\$225,323,317	\$54,494,183	\$3,131,615	\$11,183,892	\$68,809,689	\$79,896,474	\$1,358,116	(\$12,444,901)	\$2,108,541	(\$10,336,360)	\$39,798,215	
Delta***	\$5,960,539	(\$10,198,233)	\$85,057,128	\$0	\$80,819,435	\$6,456,613	\$59,185	(\$11,183,892)	(\$1,068,648)	(\$29,976,878)	(\$308,368)	\$29,216,598	\$1,483,633	\$30,700,231	\$16,775,879	

\*\*\*Note: Delta = Modeled minus Adjusted Actual

	Onsite Solar
S*R RECs	24,164,751
CEO Low Income Rooftop	702,422
S*RC - REC	3,823,858
S*RCS Tariff	8,772,497
<b>Total</b>	<b>\$ 37,463,528</b>

	Solar
Sunpower	6,969,754
Congentrix of Alamosa	7,497,418
San Luis Solar	10,625,238
EPRI Solar Tac	(971)
Comanche Solar	18,783,793
Solar Star	7,392,791
Titan Solar (R*C)	3,537,664
<b>Total</b>	<b>\$ 54,805,687</b>

	Wind
Cedar Creek II	36,992,526
Cedar Point Wind, LLC	47,947,103
Golden West	23,501,888
Limon I	22,748,753
Limon II	18,478,661
Limon III	19,939,145
Northern CO Wind II	4,089,198
Northern CO Wind	23,284,537
Ridge Crest	1,472,006
Rush Creek	(65,399,716)
<b>Total</b>	<b>\$ 133,054,102</b>

	Incremental Costs
S*R	
Pre-2009 - 2017	24,164,751
CEO Low Income Rooftop	702,422
On-site Avoided	(22,695,479)
	<b>\$ 2,171,694</b>

	Incremental Costs
S*R Community	
S*RC	3,823,858
S*RC Sub/Unsubscribed	2,970,631
	<b>\$ 6,794,489</b>

	Incremental Costs
Utility Solar	
Sunpower (Sandhill)	4,269,689
SunE Alamosa	1,860,339
San Luis	6,222,120
EPRI Solar TAC	2
Comanche Solar	3,622,876
Solar Star	1,070,225
	<b>\$ 17,045,250</b>

	Incremental Costs
Wind	
Cedar Point	26,905,009
Cedar Creek II	15,876,659
Limon I	1,128,416
Limon II	312,480
Limon III	(3,914,927)
Northern CO Wind	12,770,071
Northern CO Wind II	2,453,386
Ridge	(693,778)
Golden West	(952,276)
	<b>53,885,041</b>

**Total \$ 79,896,474**

\*Unlocked Resources (Table 7-2(a)).

\*\*Includes Wholesale Customer RESA RJA Credit.

# Attachment E



RES Compliance Report 2019  
 Attachment E

			2019	2019	2019	2019
Technology	Contract	Generator	Total Cost	RESA Cost	ECA Cost	Renewable* Connect Cost
Hydro	City of Boulder	Betasso/Silverlake	\$ 445,735.32	\$ -	\$ 445,735.32	
Hydro	City of Boulder	Kohler	\$ -	\$ -	\$ -	
Hydro	City of Boulder	Maxwell	\$ -	\$ -	\$ -	
Hydro	City of Boulder	Orodell	\$ -	\$ -	\$ -	
Hydro	City of Boulder	Sunshine	\$ -	\$ -	\$ -	
Hydro	Denver Water Board	Dillon Dam	\$ 392,223.77	\$ -	\$ 392,223.77	
Hydro	Denver Water Board	Foothills	\$ 38,108.04	\$ -	\$ 38,108.04	
Hydro	Denver Water Board	Gross Reservoir	\$ 443,274.66	\$ -	\$ 443,274.66	
Hydro	Denver Water Board	Hillcrest	\$ 137,283.44	\$ -	\$ 137,283.44	
Hydro	Denver Water Board	Roberts Tunnel	\$ 263,170.62	\$ -	\$ 263,170.62	
Hydro	Denver Water Board	Strontia Springs	\$ 260,523.77	\$ -	\$ 260,523.77	
Hydro	Grand Valley Water Users Association	Grand Valley Water Users Association	\$ 157,169.27	\$ -	\$ 157,169.27	
Hydro	Orchard Mesa Irrigation District	Orchard Mesa Irrigation District	\$ 157,169.27	\$ -	\$ 157,169.27	
Hydro	Redlands Water & Powr Company	Redlands Water & Powr Company	\$ 251,732.72	\$ -	\$ 251,732.72	
Hydro	STS Hydropower, LTD.	STS - Mt. Elbert	\$ 84,376.19	\$ -	\$ 84,376.19	
Hydro	Ute Hydro	Ute Hydro	\$ 45,855.77	\$ -	\$ 45,855.77	
Biomass/LT	WM Renewable Energy, LLC	WM Renewable Energy, LLC	\$ 1,275,766.28	\$ -	\$ 1,275,766.28	
			<b>\$ 3,952,389.12</b>	<b>\$ -</b>	<b>\$ 3,952,389.12</b>	<b>\$ -</b>
Solar	Sunpower	SNDHL	\$ 6,969,754.35	\$ 4,269,689.06	\$ 2,700,065.29	
Solar	Miscellaneous Retail Solar Purchases	Miscellaneous Retail Solar Purchases	\$ 396,916.20	\$ -	\$ 396,916.20	
Solar	Solar Gardens subscribed/Unsubscribed	Solar Gardens subscribed/Unsubscribed	\$ 8,772,496.59	\$ 2,970,630.92	\$ 5,801,865.67	
Solar	Cogentrix of Alamosa	Cogentrix of Ala	\$ 7,497,418.06	\$ -	\$ 7,497,418.06	
Solar	San Luis Solar LLC	San Luis Solar LLC	\$ 10,625,238.06	\$ 6,222,119.71	\$ 4,403,118.35	
Solar	SunEAlamosa	SunEAlamosa	\$ 3,406,206.77	\$ 1,860,338.52	\$ 1,545,868.25	
Solar	EPRI Solar Tac	EPRI Solar Tac	\$ (970.98)	\$ 1.97	\$ (972.95)	
Solar	Comanche Solar PV, LLC	Comanche Solar PV, LLC	\$ 18,783,793.15	\$ 3,622,875.65	\$ 15,160,917.50	
Solar	Solar Star	Solar Star	\$ 7,392,790.52	\$ 1,070,224.71	\$ 6,322,565.81	
Solar	Solar Gardens subscribed/Unsubscribed	Solar Gardens subscribed/Unsubscribed	\$ 496,877.70	\$ -	\$ 496,877.70	
Solar	Titan Solar, LLC	Titan Solar	\$ 3,537,663.65	\$ -	\$ -	\$ 3,537,663.65
			<b>Total Solar \$ 67,878,184.07</b>	<b>\$ 20,015,880.54</b>	<b>\$ 44,324,639.88</b>	<b>\$ 3,537,663.65</b>
Wind	Alstom Power Inc	Alstom Power Inc	\$ -	\$ -	\$ -	
Wind	Cedar Creek	CdrCrk	\$ 37,836,004.97	\$ -	\$ 37,836,004.97	
Wind	Cedar Creek II	Cedar Creek II	\$ 36,992,526.15	\$ 15,876,658.97	\$ 21,115,867.18	
Wind	Cedar Point Wind, LLC	Cedar Point Wind, LLC	\$ 47,947,102.72	\$ 26,905,009.24	\$ 21,042,093.48	
Wind	Gamesa Wind US, LLC	Gamesa Wind US, LLC	\$ -	\$ -	\$ -	
Wind	Golden West Power Partners	Golden West Power Partners	\$ 23,501,887.79	\$ (952,275.72)	\$ 24,454,163.51	
Wind	Limon I	Limon I	\$ 22,748,752.66	\$ 1,128,416.19	\$ 21,620,336.47	
Wind	Limon II	Limon II	\$ 18,478,661.35	\$ 312,480.44	\$ 18,166,180.91	
Wind	Limon III	Limon III	\$ 19,939,145.26	\$ (3,914,927.42)	\$ 23,854,072.68	
Wind	Logan	Logan	\$ 24,596,931.82	\$ -	\$ 24,596,931.82	
Wind	National Renewable Energy Laboratory	National Renewable Energy Laboratory	\$ 5,752.02	\$ -	\$ 5,752.02	
Wind	Northern CO Wind Energy II	NCoWndII	\$ 4,089,198.19	\$ 2,453,385.82	\$ 1,635,812.37	
Wind	Northern Colorado Wind Farm	NCoWnd	\$ 23,284,537.02	\$ 12,770,070.84	\$ 10,514,466.18	
Wind	PacifiCorp	COLOGREEN	\$ 5,704,269.70	\$ (1,556,420.00)	\$ 7,260,689.70	
Wind	Peetz Table	Peetz Table	\$ 28,135,674.50	\$ -	\$ 28,135,674.50	
Wind	Ridge Crest Wind Partners, LLC	RIDGECREST	\$ 1,472,006.26	\$ (693,777.62)	\$ 2,165,783.88	
Wind	Siemens Energy, Inc.	Siemens Energy, Inc.	\$ -	\$ -	\$ -	
Wind	Spring Canyon Energy LLC (Invenergy)	SprCanWind	\$ 6,507,177.72	\$ -	\$ 6,507,177.72	
Wind	Twin Buttes	TWNBTS	\$ 11,917,508.25	\$ -	\$ 11,917,508.25	
Wind	Transfers for the Trading Book		\$ 727,429.96	\$ -	\$ 727,429.96	
Wind	Owned	Rush Creek	\$ (65,399,715.70)	\$ -	\$ (65,399,715.70)	
			<b>\$ 248,484,850.64</b>	<b>\$ 52,328,620.73</b>	<b>\$ 196,156,229.92</b>	<b>\$ -</b>
			<b>Total \$ 320,315,423.83</b>	<b>\$ 72,344,501.26</b>	<b>\$ 244,433,258.92</b>	<b>\$ 3,537,663.65</b>
Onsite	Avoided Costs		\$ -	\$ (22,695,479.28)	\$ 22,695,479.28	
			<b>Total Incremental Costs \$ 320,315,423.83</b>	<b>\$ 49,649,021.98</b>	<b>\$ 267,128,738.20</b>	<b>\$ 3,537,663.65</b>
Onsite	Common to All Programs		\$ -	\$ -	\$ -	
Onsite	Customer Sited Solar < 10 kW		\$ 8,817,110.06	\$ 8,817,110.06	\$ -	
Onsite	Customer Sited Solar >10 kW -500 kW		\$ 8,965,832.47	\$ 8,965,832.47	\$ -	
Onsite	Customer Sited Solar Large RFP		\$ 6,381,808.55	\$ 6,381,808.55	\$ -	
Onsite	Small 3rd Party Developer		\$ -	\$ -	\$ -	
Onsite	Non-Customer Sited Solar		\$ -	\$ -	\$ -	
Onsite	Wholesale Costs		\$ -	\$ -	\$ -	
Onsite	Solar Gardens 10-50kW		\$ 3,823,858.45	\$ 3,823,858.45	\$ -	
Onsite	Solar Gardens 50.01 - 500 kW		\$ -	\$ -	\$ -	
Onsite	Solar Gardens 500.01 - kW - 2MW		\$ -	\$ -	\$ -	
Onsite	Low Income Rooftop Solar		\$ 702,422.21	\$ 702,422.21	\$ -	
			<b>Total Other RESA Expense \$ 28,691,031.74</b>	<b>\$ 28,691,031.74</b>	<b>\$ -</b>	<b>\$ -</b>
				<b>\$ 78,340,053.72</b>	<b>\$ 267,128,738.20</b>	<b>\$ 3,537,663.65</b>

2019 Average Hourly Incremental Cost (AHIC) was \$0.015030 per kWh.  
 Solar Rewards Community volumes purchased at AHIC in 2019 was 742,576.24 kWh.

# Attachment F

## **I. INTRODUCTION**

In Commission Decision No. C11-1080 approving the Company's 2010 RES Compliance Plan, the Company was directed to provide in its future RES compliance plan reports a comparison between the forecasted and the actual RESA incremental costs of eligible energy resources assessed against the Renewable Energy Standard Adjustment ("RESA") deferred account. The Company was also directed to explain any significant deviations between the Company's modeled and actual RESA incremental costs. This Attachment F is being provided in compliance with this requirement

Two attachments to this report provide the support for this Attachment: Attachments D and E. Attachment D of this report generally presents the differences between the forecasted incremental costs set forth in Table 7-2(a) and (c) in the 2017-19 Plan as filed by Company witness Robin L. Kittel in Direct Testimony, Attachment RLK-2, and the actual RESA incremental costs. Attachment D is a RESA cost view only; it shows the total incremental costs of all eligible energy resources that are charged to the RESA deferred account.

Attachment E of this report shows the total costs of all renewable resources allocated between the ECA and the RESA as required by Decision Nos. R12-0261 and C12-0606.

## II. Analysis

The Company performs modeling according to Rule 3661 to determine the amount of costs for eligible energy resources to be allocated between the ECA deferred account and the RESA deferred account.

### **A. Rule 3661, RESA and ECA Accounting and Monthly RESA Reports**

In accordance with Rule 3661, the RESA is only charged the incremental costs of the eligible energy resources on our system installed after July 2, 2006. Rule 3661 details the architecture for how we are to use our computer models to determine the difference in costs between two alternative scenarios of electric resources. The first scenario (“RES Plan”) includes the eligible energy resources we propose to acquire. The second scenario (the “No RES Plan”) removes the eligible energy resources we propose to acquire and replaces them with those reasonably available non-renewable resources necessary to replace the eligible energy resources so that the Company can meet its capacity and energy requirements. The cost difference between these two model runs equals the incremental costs of the renewable energy we propose to acquire. These incremental costs are allocated to the RESA. The costs calculated as part of the No RES model run are considered “Avoided Energy Costs” and are allocated to the ECA. These costs are considered “avoided” because our acquisition of generation produced from eligible energy resources permits us to avoid, to some extent, acquiring generation from new non-renewable resources, such as additional gas-fired capacity (either combustion

turbine or combined cycle generation), and/or re-dispatching existing resources to satisfy the energy needs of the system.

The process outlined above generally describes the manner in which the costs of energy -- including the incremental costs of eligible energy resources -- are calculated and the accounts to which those costs are ultimately charged. However, the accounting process used to ensure that the proper costs are allocated between the RESA and the ECA is described in detail under the 2017-19 Plan Volume I Section 8 and is incorporated into this Attachment F by reference.

Each month the Company submits to the Commission a “Monthly RESA Report” that is filed under Proceeding No. 06S-016E. The Monthly RESA Report sets forth, among other things, all of the incremental costs for eligible energy resources that are charged to the RESA. These incremental costs charged to the RESA are set forth within the “Summary” tab of the Monthly RESA Report. The monthly “Incremental Costs” of the eligible energy resources acquired under the Solar\*Rewards® programs (including Solar\*Rewards Community) are set forth under the heading “Expenditure by Type”.

The Solar\*Rewards® (including Solar\*Rewards Community) portion of the Monthly RESA Report also specifies the total -- not just incremental -- costs of each Solar\*Rewards® program by program size. The total costs are the annual REC costs for the entire Solar\*Rewards® program. These total costs are set forth in the Monthly RESA Report both in the “Summary” Tab and as detailed in separate Tabs for the small, medium and large programs.

### **III. Variance Between Forecast and Actual RESA Costs in Attachment D**

The below comparisons of forecasted, or modeled, costs to actual costs are based upon the updated costs presented in Attachment RLK-2. The Company believes that a delta of \$1 million or more requires an explanation for reporting purposes. All detailed calculations for resources comparing forecasted costs to actual costs by category are provided in Attachment D.

#### **A. Column A – On-Site Solar Costs**

Column A labeled New On-Site Solar Costs reflects a difference in costs of \$43.4 million forecasted vs. \$37.5 million actual resulting in a total difference of nearly \$6 million. This variance is attributable to a steady decline that the Company has seen in its Solar\*Rewards program over the last few years and is less than was originally modeled.

#### **B. Column B – Central Solar Costs**

Column B labeled New Central Solar Costs reflects a difference in costs of \$44.6 forecasted vs. \$54.8 million actual resulting in a total difference in over \$10 million. This variance is attributable to the omission of Congentrix of Alamosa from modeling. Titan Solar, the solar resource for the Company's Renewable\*Connect program has been added to Attachment D as that resource came online late in December 2018 and was not included in modeling.

**C. Column C – Wind Energy Costs**

Column C labeled Wind Energy Costs reflects a difference in costs of \$218.1 million forecasted vs. \$133.1 million actual resulting in a total difference of \$85.1 million. This variance is largely attributable to the production tax credits received by Rush Creek (\$65.4 million) and higher assumed production from the other wind resources.

**D. Column F – RESA Rider Revenue**

Column F labeled RESA Rider Revenue reflects difference in revenues of nearly \$61 million forecasted vs. \$54.5 million actual, resulting in a total difference of \$6.5 million. The variance simply reflects lower RESA Revenue than what was forecasted for 2019.

**E. Column H – REC Margins**

Column H labeled REC Margins reflect the customers' share of the margins generated from the selling of RECs. The \$11.2 million variance simply reflects the fact that no REC sales were projected for 2019, however the Company did sell RECs in 2019.

**F. Column J - Incremental Costs**

Column J reflects the RESA incremental costs associated with the acquisition of new renewable resources and/or resources not otherwise locked down. Column J includes the RESA share of the costs for new renewable energy resources including on-site solar, central solar and wind resources. We originally forecast that these incremental costs would total \$49.9 million in 2019, which includes Solar\*Rewards

Community REC payments. The actual costs for Column J are \$79.9 million for 2019 resulting in a difference of nearly \$30 million.

The variance is attributable to actual production being higher than modeled incremental system costs for both solar and wind resources.

**G. Column L – Annual Excess or Deficiency**

Column L labeled Annual Deficiency reflects the actual and forecasted amounts of the annual deficiency in the RESA balance. The actual annual deficiency in 2019 was negative \$12.4 million meaning there were less revenues than costs being applied to the account. This is reflected by the difference between Column I - Total RESA Revenues minus Columns J and K (RESA Related Expenditures).

**H. Column M – Interest**

Column M labeled Interest reflects the actual interest paid into the RESA for 2019 and with a “deficiency” in Column L and the declining balance as shown in Column O interest was lower than modeled by \$1.5 million.

**I. Column N – Annual Excess or Deficiency**

The total shown on Attachment D reflects the cumulative effect of the actual costs as compared to the forecasted costs along with the interest component which include all associated variances previously described.



**J. Column O - Rolling Balance**

The Rolling Balance is the culmination of the 2019 year-end RESA balance plus the annual excess or deficiency with interests. The variance is reflective of those described above for Column L.

# Attachment G

Solicitation	Capacity Award Recipient	Current Garden Owner	Garden Name	Garden Street or Lat/Long	Garden City	Garden Zip Code	Garden County	Name Plate Capacity (kW DC)	Operational
2012 RFP	Clean Energy Collective	Clean Energy Collective	CEC Solar #1023, LLC	21560 W 56th Ave. Unit A	Golden	80007	JEFFERSON	569.17	Y
	Oak Leaf Energy Partners	Greenbacker Group	Sterling CSG	13401 Riverside Drive	Sterling	80751	LOGAN	1999.8	Y
	Clean Energy Collective	Mesa CSG		2930 D 1/4 Road	Grand Junction	81594	MESA	1999.8	Y
	Clean Energy Collective	Clean Energy Collective	CEC Solar #1020, LLC	12820 CO Highway 9	Breckenridge	80424	SUMMIT	499.515	Y
	Clean Energy Collective	Clean Energy Collective	CEC Solar #1026, LLC	21560 W 56th Ave. Unit B	Golden	80403	JEFFERSON	115.15	Y
	Clean Energy Collective	Clean Energy Collective	Breck Solar 1, LLC	7581 E Academy Blvd.	Denver	80230	DENVER	400.075	Y
	Clean Energy Collective	Clean Energy Collective	Mesa Solar 1, LLC	1600 66th St	Boulder	80303	BOULDER	496.455	Y
	Clean Energy Collective	Clean Energy Collective	Summit Solar 1, LLC	710 Wellington Rd	Breckenridge	80424	SUMMIT	497.97	Y
	Clean Energy Collective	Clean Energy Collective	GC Solar 2, LLC	5050 N Telluride	Denver	80239	DENVER	499.17	Y
	Clean Energy Collective	Clean Energy Collective	CEC Solar #1037, LLC	790 N. Tower Rd. Unit SRC010509	Aurora	80011	ARAPAHOE	499.895	Y
2012 Standard Offer	Clean Energy Collective	Clean Energy Collective	Can Solar 1, LLC	790 Tower Road	Aurora	80012	ARAPAHOE	498.01	Y
	Community Energy Solar	Community Energy Solar	Community Energy Solar Garden 2	710 East County Line Road, Parcel Number 146536000931	Lafayette	80026	BOULDER	498.3	Y
	Community Energy Solar	Community Energy Solar	Community Energy Solar Garden 1	760 East County Line Road, Parcel Number 146536000054	Lafayette	80026	BOULDER	498.3	Y
	SunShare	NRG	Adams	4976 1/2 Imboden Rd	Watkins	80137	ADAMS	1496.1	Y
	SunShare	NRG	Adams III	5011 1/2 Imboden Rd	Watkins	80137	ADAMS	1499.4	Y
	SunShare	Real Capital Solutions	Alkire	9105 Alkire Street	Arvada	80005	JEFFERSON	1496.88	Y
	Clean Energy Collective	Clean Energy Collective	CEC Solar #1021, LLC	5050 N Telluride	Denver	80010	DENVER	499.03	Y
	Clean Energy Collective	Clean Energy Collective	CEC Solar #1022, LLC	987 5th St SW	Leadville	80461	LAKE	499.9	Y
	Clean Energy Collective	Clean Energy Collective	CEC Solar #1025, LLC	1600 S. 66th St	Boulder	80301	BOULDER	499.9	Y
	Community Energy Solar	Community Energy Solar	Ante	105 E. 1st Avenue	Antonito	81120	CONEJOS	500	Y
2013 RFP	SunShare	NRG	Denver II	UNIT SRC 18664 17897 E 515T AVE	Denver	80249	DENVER	499.4	Y
	SunShare	NRG	Adams II	5051 1/2 Imboden Rd	Watkins	80137	ADAMS	497.2	Y
	SunShare	NRG	Arapahoe I	31481 E County Road 18 (Jewell)	Watkins	80137	ARAPAHOE	499.3	Y
	SunShare	NRG	Adams I	5061 1/2 Imboden Rd	Watkins	80137	ADAMS	497.2	Y
	SunShare	NRG	Denver I	UNIT SRC 18663 17797 E 515T AVE	Denver	80249	DENVER	499.4	Y
	SunShare	AEP	Imboden III	33975 E. 48th Ave.	Watkins	80137	ADAMS	1999.5	Y
	SunShare	AEP	Imboden II Solar Garden	5135 Imboden Road Unit A	Watkins	80137	ADAMS	1999.5	Y
	Clean Energy Collective	Clean Focus Renewables	CEC Solar #1121, LLC	28102 E. Quincy Ave UNIT SRC042456	Aurora	80138	ARAPAHOE	1999.5	Y
	Clean Energy Collective	Clean Focus Renewables	CEC Solar #1128, LLC	28102 E. Quincy Ave.	Aurora	80138	ARAPAHOE	1984.5	Y
	Clean Energy Collective	Clean Focus Renewables	CEC Solar #1119	12010 HWY 61	Sterling	80751	LOGAN	1987.2	Y
2015 RFP	Clean Energy Collective	Clean Focus Renewables	CEC Solar #1119	13727 US 285	La Jara	81140	CONEJOS	1987.2	Y
	Clean Energy Collective	Clean Focus Renewables	CEC Solar #1122, LLC	33850 E 38th Ave	Watkins	80137	ADAMS	1984.5	Y
	Clean Energy Collective	Clean Focus Renewables	CEC Solar #1130, LLC	5260 Imboden Rd.	Watkins	80137	ADAMS	1987.2	Y
	Clean Energy Collective	Clean Focus Renewables	CEC Solar #1133, LLC	15990 CR 29	Platteville	80651	WELD	1984.5	Y
	Community Energy Solar	Community Energy Solar	San Luis Solar Garden	37980 State Highway 17	Antonito	81120	CONEJOS	1500	Y
	SunShare	WGL	Imboden IV	5137 Imboden Rd Unit 8	Watkins	80137	ADAMS	1997.28	Y
	SunShare	WGL	Imboden V	5135 Imboden Rd. Unit 8	Watkins	80137	ADAMS	1997.28	Y
	SunShare	WGL	Gilcrest Solar Garden	14228 County Road 42	Gilcrest	80623	WELD	1994.85	Y
	SunShare	WGL	Hudson Solar Garden	5900 Hudson Road	Watkins	80137	ADAMS	1994.85	Y
	SunShare	WGL	Quincy Solar Garden	37055 E. County Road 30	Watkins	80136	ARAPAHOE	1994.85	Y
2015 Standard Offer	Sharper Energy Tech	DRV Shared Solar	Centennial I	14252 CR 36, Phase I	Platteville	80651	WELD	97.5	Y
	Pivot Energy	Pivot Energy	Spark 2	2500 Lawrence St. unit 050356	Denver	80205	DENVER	70.72	Y
	Pivot Energy	Pivot Energy	GHA Solar Garden	540 Parachute Ave	Parachute	81635	GARFIELD	99.45	Y
	Pivot Energy	Pivot Energy	Spark 1	2500 Lawrence unit 050353	Denver	80205	DENVER	69.02	Y
	Pivot Energy	Pivot Energy	Stanley Marketplace	2501 Dallas St	Aurora	80010	ADAMS	95.45	Y
	2016 LI RFP	DIA	30% Low-Income Community-Based Solar G	2950-A North Hudson Road	Denver	81137	DENVER	1996	N
	Community Energy Solar	Community Energy Solar	Alamosa South CSG	399 Twentieth St.	Alamosa	81101	ALAMOSA	1995.84	N
	Community Energy Solar	Community Energy Solar	Rock Creek Solar 2 CSG LLC	7524 Rd 12 S.	Alamosa	81101	ALAMOSA	1995.84	N
	Community Energy Solar	Greenbacker Group	Blanca Peak Solar CSG LLC	28614 Highway 159	Fort Garland	81133	COSTILLA	1995.84	N
	Community Energy Solar	Greenbacker Group	Monte Vista Solar 2 CSG LLC	283 S Co. Rd 3 E	Monte Vista	81144	RIO GRANDE	1995.84	N
Native Suns	Native Suns	Table Mountain	3201 West 32nd Avenue	Golden	80401	JEFFERSON	1995.84	N	
Native Suns	Native Suns	Morrison	17179 state hwy 74	Morrison	80465	JEFFERSON	999.6	N	
Community Energy Solar	Community Energy Solar	Rock Creek Solar 1 CSG LLC	N/A	N/A	N/A	ALAMOSA	1995.84	Withdrawn	
Community Energy Solar	Community Energy Solar	Monte Vista Solar CSG LLC	N/A	N/A	N/A	RIO GRANDE	1995.84	Withdrawn	
Community Energy Solar	Community Energy Solar	Romeo Solar 3 CSG LLC	N/A	N/A	N/A	CONEJOS	1270.08	Withdrawn	
Community Energy Solar	Community Energy Solar	Watkins Solar CSG LLC	N/A	N/A	N/A	WELD	1995.84	Withdrawn	
Community Energy Solar	Community Energy Solar	Poncha Solar CSG LLC	N/A	N/A	N/A	CHAFFEE	2000	Withdrawn	
Community Energy Solar	Community Energy Solar	Lafayette Horizon Solar CSG LLC	1385 Horizon Ave	Lafayette	80026	BOULDER	1995.84	Y	
Community Energy Solar	Greenbacker Group	Alden Solar CSG, LLC	31432 Weld County Rd 51	Greeley	80631	WELD	1995.84	Y	
Community Energy Solar	Greenbacker Group	Platteville Solar CSG LLC	15763 Weld County Road 31	Platteville	80651	WELD	1632.96	Y	
2016 RFP	Oak Leaf Energy Partners	Greenbacker Group	Alamosa01 (Wisecamp)	8545 Ironfield Road	Alamosa	81101	ALAMOSA	1997.1	Y
	Oak Leaf Energy Partners	Greenbacker Group	Anderson	14684 County Road 36	Platteville	80651	WELD	1997.1	Y
	Oak Leaf Energy Partners	Greenbacker Group	DIA 1	27400 E 114th Ave	Denver	80249	DENVER	1997.1	Y
	Oak Leaf Energy Partners	Greenbacker Group	McCormick	11485 County Road 36	Platteville	80651	WELD	1184	Y
	Oak Leaf Energy Partners	Greenbacker Group	Lantz	10752 County Road 140	Salida	81201	CHAFFEE	1998	Y
	Oak Leaf Energy Partners	Greenbacker Group	Cameo01	956 Highline Canal Rd	Cameo	81526	MESA	1997.1	Y
	Oak Leaf Energy Partners	Greenbacker Group	Lowry State Land Board	29100 B E County Road 30/Quincy Avenue	Watkins	80137	ARAPAHOE	1997.1	Y
	Oak Leaf Energy Partners	Greenbacker Group	DIA 2	27905 E 112th Ave	Denver	80249	DENVER	1997.1	Y
	Oak Leaf Energy Partners	Greenbacker Group	Linnebur	5900 Hudson Road	Watkins	80137	ADAMS	1997.1	Y
	Oak Leaf Energy Partners	Greenbacker Group	Thebo01	UNIT SRC053967 365858 E COUNTY ROAD 30	Watkins	80137	ARAPAHOE	1997.1	Y
2016 Standard Offer	Oak Leaf Energy Partners	Greenbacker Group	Rifle	2585 W. Centennial Parkway	Rifle	81650	GARFIELD	1997.1	Y
	Oak Leaf Energy Partners	Greenbacker Group	Greeley-Weld Airport	2451 E. 8th St	Greeley	80651	WELD	1997.1	Y
	Oak Leaf Energy Partners	Greenbacker Group	Thebo02	UNIT SRC053968 39299 E COUNTY ROAD 30	Watkins	80137	ARAPAHOE	1997.1	Y
	Pivot Energy	Pivot Energy	Denver SLB	Unit SRC053579 17255 Green Valley Ranch Blvd	Denver	80239	DENVER	994.5	Y
	Pivot Energy	Pivot Energy	DU CSG 1 LLC	Unit SRC053578 5260 ? 1/2 Imboden Rd	Watkins	80137	DENVER	497.25	Y
	Pivot Energy	Pivot Energy	Mesa CSG 2 LLC	3411 C RD	Palisade	81526	MESA	1994.85	Y
	Standard Solar	Standard Solar	Mesa CSG 1 LLC	2169 River Road	Grand Junction	81505	MESA	1993.68	Y
	Grid Alternatives	Grid Alternatives	Boulder FTC Community Solar	6058 Reservoir Road	Boulder	80501	BOULDER	95.45	N
	Pivot Energy	Pivot Energy	CO LI CSG 3 LLC	3540 River Frontage Rd.	New Castle	81647	GARFIELD	97.92	Y
	Pivot Energy	Pivot Energy	CO LI CSG 1 LLC	4901 Imboden Rd.	Watkins	80137	ADAMS	1994.85	Y
2017 LI RFP	Pivot Energy	Pivot Energy	CO LI CSG 2 LLC	UNIT SRC064203 5260 ? 3/4 Imboden Rd	Watkins	80137	ADAMS	1000	Y
	Grid Alternatives	Grid Alternatives	GRID CSG Standard 4	N/A	N/A	N/A	DENVER	98.56	Withdrawn
	Grid Alternatives	Grid Alternatives	Boulder FTC Community Solar	N/A	N/A	N/A	BOULDER	99.18	Withdrawn
	Grid Alternatives	Grid Alternatives	GRID CSG Standard 1	N/A	N/A	N/A	SUMMIT	98.56	Withdrawn
	Grid Alternatives	Grid Alternatives	GRID CSG Standard 3	N/A	N/A	N/A	BOULDER	98.56	Withdrawn
	Sandbox Solar	Sandbox Solar	Greeley Fire Station Community Solar	N/A	N/A	N/A	WELD	99.4	Withdrawn
	Grid Alternatives	Grid Alternatives	GRID CSG Standard 2	14252 CR 36, Phase II	Platteville	80651	WELD	97.47	Y

Solicitation	Capacity Award Recipient	Current Garden Owner	Garden Name	Garden Street or Lat/Long	Garden City	Garden Zip Code	Garden County	Name Plate Capacity (kW DC)	Operational
2017 RFP	Clean Energy Collective	Clean Energy Collective	Jefferson A	7400 County Hwy 73	Evergreen	80439	JEFFERSON	1994.4	N
	Oak Leaf Energy Partners	Oak Leaf Energy Partners	Methven 1	33725 E 48th Ave	Watkins	80403	ADAMS	1998	N
	Oak Leaf Energy Partners	Oak Leaf Energy Partners	Tebco 3	39299 Unit 1 E. Quincy Ave (39.649277, -104.536751)	Watkins	80137	ARAPAHOE	1997.1	N
	Oak Leaf Energy Partners	Oak Leaf Energy Partners	Carlson	33355 E. 48th Ave	Watkins	80137	ADAMS	1997.1	N
	Oak Leaf Energy Partners	Oak Leaf Energy Partners	Rhonda	3333 S. Manilla Road	Watkins	80137	ARAPAHOE	1997.1	N
	Pivot Energy	Pivot Energy	Mtn Solar 5 LLC	35540 River Frontage Road	New Caslte	81647	GARFIELD	994.5	N
	Pivot Energy	Pivot Energy	Mtn Solar 4 LLC	Mesa County Site TBD	Grand Junction	81506	MESA	2000	N
	Oak Leaf Energy Partners	Oak Leaf Energy Partners	Garfield43	N/A	N/A	N/A	MESA	1997.1	Withdrawn
	Oak Leaf Energy Partners	Oak Leaf Energy Partners	McCormick 2	N/A	N/A	N/A	WELD	1997.1	Withdrawn
	Oak Leaf Energy Partners	Oak Leaf Energy Partners	McKee	N/A	N/A	N/A	WELD	1997.1	Withdrawn
	Oak Leaf Energy Partners	Oak Leaf Energy Partners	Gary McCormick	N/A	N/A	N/A	WELD	1997.1	Withdrawn
	Pivot Energy	Pivot Energy	Mtn Solar 3 LLC	1609 AgriPark Rd	Brush	80723	MORGAN	2000	Y
	Pivot Energy	Pivot Energy	Mtn Solar 2 LLC	33850 E. 38th Ave	Watkins	80137	ADAMS	1994.85	Y
	Pivot Energy	Pivot Energy	Mtn Solar 1 LLC	4401 Imboden Road	Watkins	80317	ADAMS	1994.85	Y
	2018 LI RFP	Grid Alternatives	Grid Alternatives	Denver Metro Low-Income CSG Site 1	3500 S Gun Club Rd (site 1)	Aurora	80018	ARAPAHOE	1966
Grid Alternatives		Grid Alternatives	Denver Metro Low-Income CSG Site 2	3500 S Gun Club Rd (Site 2)	Aurora	80018	ARAPAHOE	1966	N
Grid Alternatives		Grid Alternatives	Boulder County Low-Income CSG	4772 N 28th st	Boulder	80304	BOULDER	630	N
Oak Leaf Energy Partners		Oak Leaf Energy Partners	Jeffco61 (LI)	N/A	N/A	N/A	JEFFERSON	1997.1	Withdrawn
Oak Leaf Energy Partners		Oak Leaf Energy Partners	Jeffco60 (LI)	N/A	N/A	N/A	JEFFERSON	1997.1	Withdrawn
2018 RFP	Jack's Solar Garden LLC	Jack's Solar Garden LLC	Jack's Solar Garden	8102 North 95th St	Longmont	80504	BOULDER	1244.88	N
	Oak Leaf Energy Partners	Oak Leaf Energy Partners	Methven North	33975 E 48th Ave	Watkins	80137	ADAMS	1998	N
	SunShare	SunShare	Imboden VI	5137 Imboden Road, Unit C	Watkins	80137	ADAMS	1998	N
	SunShare	SunShare	Box Elder	48th Ave (39.783153, -104.599800)	Watkins	80137	ADAMS	1998	N
	SunShare	SunShare	Quincy III	39.727936, -104.519873	Bennet	80102	ARAPAHOE	1998	N
	SunShare	SunShare	PawneeSun	40.247067, -104.772814	Platteville	80651	WELD	1998	N
	SunShare	SunShare	Conundrum	39.860728, -105.149056	Arvada	80005	JEFFERSON	1998	N
	SunShare	SunShare	Gilcrest II	15130 County Road 46	Platteville	80657	WELD	1998	N
	Oak Leaf Energy Partners	Oak Leaf Energy Partners	Weld56	N/A	N/A	N/A	WELD	1997.1	Withdrawn
	Oak Leaf Energy Partners	Oak Leaf Energy Partners	Jeffco45	N/A	N/A	N/A	JEFFERSON	1997.1	Withdrawn
	Oak Leaf Energy Partners	Oak Leaf Energy Partners	Weld57	N/A	N/A	N/A	WELD	1997.1	Withdrawn
	Oak Leaf Energy Partners	Oak Leaf Energy Partners	Weld55	N/A	N/A	N/A	WELD	1997.1	Withdrawn
	Oak Leaf Energy Partners	Oak Leaf Energy Partners	Weld58	N/A	N/A	N/A	WELD	1997.1	Withdrawn
	Oak Leaf Energy Partners	Oak Leaf Energy Partners	Weld59	N/A	N/A	N/A	ADAMS	1997.1	Withdrawn
	2019 LI RFP	Grid Alternatives	Grid Alternatives	Denver Metro Low-Income CSG Site 3	3500 S Gun Club Rd (Site 3)	Aurora	80018	ARAPAHOE	1996
Pivot Energy		Pivot Solar 14 LLC	Pivot Solar 14 LLC	6th and Kipling	Lakewood	80215	JEFFERSON	2000	N
Namaste Solar		Namaste Solar	NSE CSG 3 Weld	40.442211, -104.646635"	Greeley	80631	WELD	1997.28	N
Namaste Solar		Namaste Solar	NSE CSG 1 Adams	39.753501, -104.668040"	Aurora	80019	ADAMS	1997.28	N
Namaste Solar		Namaste Solar	NSE CSG 2 Adams	39.743708, -104.668667	Aurora	80018	ADAMS	1997.28	N
Namaste Solar		Namaste Solar	NSE CSG 6 Weld	40.651154, -105.136687	Laporte	80535	LARIMER	1997.28	N
Namaste Solar		Namaste Solar	NSE CSG 5 Weld	39.751594, -104.666103	Aurora	80018	ADAMS	1997.28	N
Namaste Solar		Namaste Solar	NSE CSG 4 Weld	40.378514, -104.648069	Greeley	80631	WELD	1997.28	N
Pivot Energy		Pivot Solar 8 LLC	Pivot Solar 8 LLC	15002 CO Rd 36	Platteville	80651	WELD	2000	N
Pivot Energy		Pivot Energy	Pivot Solar 6 LLC	17778 COUNTY RD 25	Platteville	80651	WELD	1995.8	N
Pivot Energy		Pivot Energy	Pivot Solar 7 LLC	40.2752992, -103.6317713,	Brush	80723	MORGAN	2000	N
Pivot Energy		Pivot Energy	Pivot Solar 5 LLC	11400 County Road 36	Platteville	80651	WELD	2000	N
Pivot Energy		Pivot Energy	Pivot Solar 4 LLC	15990 CR 29	Platteville	80651	WELD	2000	N
Pivot Energy		Pivot Energy	Pivot Solar 2 LLC	3472 G Rd.	Clifton	81520	MESA	2000	N
Pivot Energy		Pivot Energy	Pivot Solar 1 LLC	1897 319 County Rd	Rifle	81650	GARFIELD	2000	N
Pivot Energy	Pivot Energy	Pivot Solar 3 LLC	39.413914, -108.090976	Parachute	81635	GARFIELD	2000	N	
Pivot Energy	Pivot Energy	Pivot Solar 9 LLC	33975 48th Ave	Watkins	80137	ADAMS	1995.84	N	
Pivot Energy	Pivot Energy	Pivot Solar 13 LLC	40.613911, -103.153727	Sterling	80751	LOGAN	2000	N	
Pivot Energy	Pivot Energy	Pivot Solar 11 LLC	40.613911, -103.153727	Sterling	80751	LOGAN	1995.84	N	
Pivot Energy	Pivot Energy	Pivot Solar 12 LLC	40.946181, -103.114217	Peetz	80747	LOGAN	2000	N	
Pivot Energy	Pivot Energy	Pivot Solar 10 LLC	40.614501, -103.234048	Sterling	80751	LOGAN	2000	N	
Xcel Energy	Xcel Energy	Valmont CSG10	1800 63rd Street	Boulder	80301	BOULDER	2000	N	
Xcel Energy	Xcel Energy	Arapahoe CSG5	2601 S. Platte River Dr.	Denver	80223	DENVER	2000	N	
Xcel Energy	Xcel Energy	Valmont CSG9	1800 63rd Street	Boulder	80301	BOULDER	2000	N	

# Attachment H

Solar Garden ID	Developer/Owner	REC Payment per MWh	Adjustment	Garden Street	Name Plate Capacity (kW DC)	Garden City	Garden State	Application Complete	Garden Active Date	Vintage Program
SRC053370	Lafayette Horizon Solar CSG LLC	\$1.11	None	1385 Horizon Ave	1995.84	Lafayette	CO	1/31/2019	2/28/2019	2016 RFP
SRC053974	Oak Leaf Solar XXIX LLC	\$12.50	None	11485 County Road 36	1184	Platteville	CO	2/26/2019	2/28/2019	2016 RFP
SRC053975	Oak Leaf Solar XXXII LLC	\$12.50	None	2585 W. Centennial Parkway	1997.1	Rifle	CO	3/5/2019	3/31/2019	2016 RFP
SRC042463	Little Bear Solar LLC	\$30.00	None	5135 Imboden Rd. Unit B	1997.28	Watkins	CO	3/27/2019	4/29/2019	2015 RFP
SRC042452	Bianca Solar LLC	\$30.00	None	5137 Imboden Rd Unit B	1997.28	Watkins	CO	3/27/2019	4/29/2019	2015 RFP
SRC053966	Oak Leaf Solar XXIII LLC	\$12.50	None	5900 Hudson Road	1997.1	Watkins	CO	3/27/2019	4/29/2019	2016 RFP
SRC053967	Oak Leaf Solar XXIV LLC	\$9.90	None	UNIT SRC053967 365858 E COUNTY ROAD 30	1997.1	Watkins	CO	3/29/2019	4/29/2019	2016 RFP
SRC053968	Oak Leaf Solar XXV LLC	\$9.90	None	UNIT SRC053968 39299 E COUNTY ROAD 30	1997.1	Watkins	CO	3/29/2019	4/29/2019	2016 RFP
SRC053965	Oak Leaf Solar XXII LLC	\$9.90	None	27400 E 114th Ave	1997.1	Denver	CO	4/5/2019	5/30/2019	2016 RFP
SRC053970	Oak Leaf Solar XXVII LLC	\$12.50	None	27905 E 112th Ave	1997.1	Denver	CO	4/5/2019	2/28/2019	2016 RFP
SRC053579	Native Suns, LLC Tiny Town	\$8.65	escalating percentage of 1.5% per year for RECs purchased.	Unit SRC053579 17255 Green Valley Ranch Blvd	994.5	Denver	CO	5/9/2019	5/30/2019	2016 RFP
SRC054194	Mesa CSG 1 LLC	\$8.00	escalating percentage of 1.9% per year for RECs purchased.	2169 River Road	1993.68	Grand Junction	CO	5/21/2019	6/29/2019	2016 RFP
SRC053581	Mesa CSG 2 LLC	\$8.00	escalating percentage of 2.3% per year for RECs purchased.	3411 C RD	1994.85	Palisade	CO	5/21/2019	6/29/2019	2016 RFP
SRC053973	Oak Leaf Solar XXVIII LLC	\$9.90	None	14684 County Road 36	1997.1	Platteville	CO	5/29/2019	6/30/2019	2016 RFP
SRC053578	DU CSG 1 LLC	\$8.00	escalating percentage of 2.5% per year for RECs purchased.	Unit SRC053578 5260 ? 1/2 Imboden Rd	497.25	Watkins	CO	6/24/2019	7/31/2019	2016 RFP
SRC064203	CO LI CSG 2 LLC	\$9.75	escalating percentage of 1.5% per year for RECs purchased.	UNIT SRC064203 5260 ? 3/4 Imboden Rd	1000	Watkins	CO	6/24/2019	7/31/2019	2017 LI RFP
SRC067947	Mtn Solar 1 LLC	\$34.00	reduced annually beginning on the second anniversary of the Commercial Operation date by \$5.50 per MWh	4401 Imboden Road	1994.85	Watkins	CO	8/30/2019	9/30/2019	2017 RFP
SRC067948	Mtn Solar 2 LLC	\$34.80	reduced annually beginning on the second anniversary of the Commercial Operation date by \$5.50 per MWh	33850 E. 38th Ave.	1994.85	Watkins	CO	9/27/2019	9/30/2019	2017 RFP
SRC064202	CO LI CSG 1 LLC	\$9.65	escalating percentage of 1.5% per year for RECs purchased.	4901 Imboden Rd	1994.85	Watkins	CO	10/31/2019	11/30/2019	2017 LI RFP
SRC067949	Mtn Solar 3 LLC	\$34.30	reduced annually beginning on the second anniversary of the Commercial Operation date by \$5.50 per MWh	1609 Agripark Rd	2000	Brush	CO	12/23/2019	1/31/2020	2017 RFP

\*Due to the voluminous file size of the Producer Agreement Contracts, individual contracts available upon request.

# Attachment I

Attachment I

**Table 1: Production Breakdown - Subscribed and Unsubscribed by CSG as of December 31, 2015**

CSG #	CSG Owner	Project Award Date	Commercial Operation Date	Total kWh Billed	kWh Subscribed	kWh Unsubscribed	Percentage Subscribed
SRC010496	GC Solar 2, LLC	8/15/2012	8/21/2014	823,769.00	816,500.81	7,268.19	99.12%
SRC010497	Breck Solar 1, LLC	8/15/2012	9/27/2013	547,246.00	532,776.55	14,469.45	97.36%
SRC010498	CEC SOLAR #1026, LLC	8/15/2012	6/26/2014	166,270.00	161,007.72	5,262.28	96.84%
SRC010499	Mesa Solar 1, LLC	8/15/2012	4/26/2013	753,697.00	747,560.38	6,136.62	99.19%
SRC010500	Summit Solar 1, LLC	8/15/2012	9/27/2013	672,039.00	672,039.00	0.00	100.00%
SRC010502	CEC Solar #1020, LLC	8/15/2012	9/27/2013	666,071.00	666,071.00	0.00	100.00%
SRC010506	Can Solar 1, LLC	8/15/2012	11/12/2013	834,798.00	833,829.51	968.49	99.88%
SRC010507	Community Energy Solar, LLC	8/15/2012	12/10/2013	748,199.00	748,199.00	0.00	100.00%
SRC010509	CEC Solar #1037, LLC	8/15/2012	6/1/2015	693,940.00	688,834.54	5,105.46	99.26%
SRC010512	Lafayette Solar LLC	8/15/2012	12/12/2013	747,546.00	747,444.11	101.89	99.99%
SRC011229	Fresh Air Energy VII, LLC	10/29/2012	10/17/2014	3,626,963.00	3,626,963.00	0.00	100.00%
SRC011647	CEC SOLAR #1023, LLC	10/29/2012	6/19/2014	839,421.00	811,713.03	27,707.97	96.70%
SRC011744	Fresh Air Energy VIII, LLC	10/29/2012	9/29/2014	3,302,460.00	3,302,460.00	0.00	100.00%
SRC018661	Arapahoe Community Solar Garden I LLC	6/3/2013	7/31/2015	813,037.00	787,170.58	25,866.42	96.82%
SRC018663	Denver Community Solar Garden I LLC	6/3/2013	6/30/2015	885,191.00	859,711.49	25,479.51	97.12%
SRC018664	Denver Community Solar Garden II LLC	6/3/2013	6/30/2015	904,673.00	833,326.51	71,346.49	92.11%
SRC018665	Adams Community Solar Garden I LLC	6/3/2013	7/31/2015	820,825.00	816,265.58	4,559.42	99.44%
SRC018667	CEC SOLAR #1021, LLC	6/3/2013	8/21/2014	776,000.00	770,342.00	5,658.00	99.27%
SRC018668	CEC SOLAR #1025, LLC	6/3/2013	5/29/2015	696,326.00	693,201.10	3,124.90	99.55%
SRC018669	CEC SOLAR #1022, LLC	6/3/2013	4/30/2015	986,412.00	986,402.15	9.85	100.00%
SRC018672	Adams Community Solar Garden II LLC	6/3/2013	7/31/2015	867,783.00	822,889.36	44,893.64	94.83%
SRC018677	Antonito Solar LLC	6/3/2013	11/17/2014	1,061,424.00	1,061,391.90	32.10	100.00%
SRC023375	Jeffco Community Solar Gardens LLC	11/1/2013	5/31/2016	2,460,814.00	2,455,934.73	4,879.27	99.80%
SRC023376	Adams Community Solar Garden III LLC	11/1/2013	7/31/2015	2,595,080.00	2,531,885.36	63,194.64	97.56%
SRC023377	Adams Community Solar Gardens LLC	11/1/2013	7/31/2015	2,560,731.00	2,560,529.04	201.96	99.99%
SRC042360	CEC Solar #1119, LLC	9/11/2015	11/28/2017	3,605,147.00	3,477,712.68	127,434.32	96.47%
SRC042361	CEC Solar #1121, LLC	9/11/2015	12/29/2017	3,610,525.00	3,605,086.99	5,438.01	99.85%
SRC042362	CEC Solar #1122, LLC	9/11/2015	9/25/2017	3,456,685.00	3,456,020.47	664.53	99.98%
SRC042364	CEC Solar #1128, LLC	9/11/2015	10/25/2017	3,025,923.00	3,022,017.20	3,905.80	99.87%
SRC042365	CEC Solar #1130, LLC	9/11/2015	12/14/2017	2,953,857.00	2,953,857.00	0.00	100.00%
SRC042438	CEC Solar #1133, LLC	9/11/2015	10/24/2017	3,045,913.00	3,045,264.45	648.55	99.98%
SRC042452	Terraform Power	9/11/2015	3/27/2019	1,924,699.00	1,924,699.00	0.00	100.00%
SRC042454	Terraform Power	9/11/2015	9/20/2018	3,423,018.00	3,423,018.00	0.00	100.00%
SRC042456	Quincy II Solar Garden LLC	9/11/2015	5/1/2018	3,361,371.00	3,361,371.00	0.00	100.00%
SRC042457	Imboden III Solar LLC	9/11/2015	4/6/2018	2,920,051.00	2,920,051.00	0.00	100.00%
SRC042458	Imboden II Solar LLC	9/11/2015	4/6/2018	3,471,660.00	3,471,660.00	0.00	100.00%
SRC042459	Terraform Power	9/11/2015	8/30/2018	3,345,801.00	3,345,801.00	0.00	100.00%
SRC042462	Terraform Power	9/11/2015	9/1/2018	3,081,417.00	3,081,417.00	0.00	100.00%
SRC042463	Terraform Power	12/13/2016	3/27/2019	1,363,673.00	1,363,673.00	0.00	100.00%
SRC042532	San Luis Solar Garden LLC	12/13/2016	8/31/2017	3,228,641.00	3,228,641.00	0.00	100.00%
SRC050353	Spark CSG 1 LLC	10/18/2016	1/1/2019	81,563.00	81,563.00	0.00	100.00%
SRC050354	Stanley CSG 1 LLC	10/18/2016	12/7/2018	139,717.00	139,717.00	0.00	100.00%
SRC050355	DRV Shared Solar 2018-1, LLC	10/18/2016	12/28/2018	144,707.00	132,880.18	11,826.82	91.83%
SRC050356	SRC 050356 LLC	10/18/2016	1/2/2019	82,351.00	82,351.00	0.00	100.00%
SRC050357	SRC 050357 LLC	10/18/2016	12/7/2018	154,069.00	154,069.00	0.00	100.00%
SRC053370	Lafayette Horizon Solar CSG LLC	12/13/2016	1/31/2019	3,281,737.00	3,275,393.75	6,343.25	99.81%
SRC053578	DU CSG 1 LLC	12/13/2016	6/24/2019	453,572.00	453,572.00	0.00	100.00%
SRC053579	Native Suns, LLC Tiny Town	12/13/2016	5/9/2019	1,212,071.00	1,210,857.52	1,213.48	99.90%
SRC053581	Mesa CSG 2 LLC	12/13/2016	5/21/2019	1,983,076.00	1,983,076.00	0.00	100.00%
SRC053962	Housing Authority of the City and County of Denver	12/13/2016	12/20/2017	3,709,111.00	3,633,526.73	75,584.27	97.96%
SRC053963	Oak Leaf Solar XXX LLC	12/13/2016	12/6/2018	4,119,696.00	4,119,696.00	0.00	100.00%
SRC053964	Oak Leaf Solar XXI LLC	12/13/2016	12/27/2018	3,663,709.00	3,663,505.86	203.14	99.99%
SRC053965	Oak Leaf Solar XXII LLC	12/13/2016	4/5/2019	2,591,868.00	2,591,868.00	0.00	100.00%
SRC053966	Oak Leaf Solar XXIII LLC	12/13/2016	3/27/2019	2,907,483.00	2,906,734.67	748.33	99.97%
SRC053967	Oak Leaf Solar XXIV LLC	12/13/2016	3/29/2019	2,856,861.00	2,855,443.15	1,417.85	99.95%
SRC053968	Oak Leaf Solar XXV LLC	12/13/2016	3/29/2019	2,886,101.00	2,886,101.00	0.00	100.00%
SRC053970	Oak Leaf Solar XXVI LLC	12/13/2016	4/5/2019	2,580,936.00	2,578,441.70	2,494.30	99.90%



Attachment I

**Table 1: Production Breakdown - Subscribed and Unsubscribed by CSG as of December 31, 2019**

CSG #	CSG Owner	Project Award Date	Commercial Operation Date	Total kWh Billed	kWh Subscribed	kWh Unsubscribed	Percentage Subscribed
SRC053971	Oak Leaf Solar XXVII LLC	12/13/2016	11/15/2018	3,459,228.00	3,458,983.73	244.27	99.99%
SRC053973	Oak Leaf Solar XXVIII LLC	12/13/2016	5/29/2019	2,036,645.00	2,036,645.00	0.00	100.00%
SRC053974	Oak Leaf Solar XXIX LLC	12/13/2016	2/26/2019	1,825,335.00	1,813,846.94	11,488.06	99.37%
SRC053975	Oak Leaf Solar XXXII LLC	12/13/2016	3/5/2019	3,252,359.00	3,252,206.89	152.11	100.00%
SRC053976	Oak Leaf Solar XXXIII LLC	12/13/2016	1/2/2020	6,993.00	0.00	6,993.00	0.00%
SRC053977	Oak Leaf Solar XXXI LLC	12/13/2016	12/27/2018	3,600,210.00	3,584,398.02	15,811.98	99.56%
SRC054194	Mesa CSG 1 LLC	7/16/2018	5/21/2019	2,352,696.00	2,352,696.00	0.00	100.00%
SRC064202	CO LI CSG 1 LLC	7/16/2018	10/31/2019	351,991.00	342,825.00	9,166.00	97.40%
SRC064203	CO LI CSG 2 LLC	7/16/2018	6/24/2019	932,670.00	894,573.84	38,096.16	95.92%
SRC064251	GRID Alternatives Colorado	12/18/2018	12/28/2018	138,328.00	137,893.12	434.88	99.69%
SRC067947	Mtn Solar 1 LLC	7/16/2018	8/30/2019	893,267.00	841,526.42	51,740.58	94.21%
SRC067948	Mtn Solar 2 LLC	7/16/2018	9/27/2019	633,962.00	579,702.00	54,260.00	91.44%
<b>Total</b>				<b>128,001,408.00</b>	<b>127,258,831.76</b>	<b>742,576.24</b>	<b>99.42%</b>

Table 2: Production Breakdown - Subscribed by CSG and Rate Class as of December 31, 2019

CSG #	CSG Owner	Count of Low Income Subscribers as of December 31st	kWh - Low Income Subscribed	\$ - Low Income Subscribed	Total kWh - Subscribed	kWh - R Class Subscribed	\$ - R Class Subscribed	kWh - RD Class Subscribed	\$ - RD Class Subscribed	kWh - C Class Subscribed	\$ - C Class Subscribed	kWh - SG Class Subscribed	\$ - SG Class Subscribed	kWh - SGL Class Subscribed	\$ - SGL Class Subscribed	kWh - SPVTOU Class Subscribed	\$ - SPVTOU Class Subscribed	kWh - PG Class Subscribed	\$ - PG Class Subscribed	
SRCD10496	CEC Solar 2, LLC	10	42,835.80	\$1,011.51	137,131.14	662,340.51	\$46,575.86	726.76	\$1.09			154,057.87	\$20,585.63							
SRCD10497	Breck Solar 1, LLC	3	27,356.83	\$1,923.72	532,778.73	307,439.62	\$21,618.99			69,165.34	\$ 4,256.43	96,003.74	\$6,456.31					2,393.65	\$106.57	
SRCD10498	CEC SOLAR #1026, LLC	3	10,138.01	\$712.91	161,007.53	94,499.53	\$6,645.14					66,508.00	\$9,780.00							
SRCD10499	Mesa Solar 1, LLC	8	37,953.97	\$2,669.68	747,544.87	331,728.81	\$23,286.57			9,109.20	\$ 640.39	61,203.61	\$4,115.91	289,683.67	\$24,376.14	46,379.48	\$1,936.23			
SRCD10500	Summit Solar 1, LLC	7	37,266.60	\$2,615.27	672,040.37	148,423.46	\$10,437.32					31,714.87	\$2,132.81	491,900.24	\$54,229.82					
SRCD10502	CEC SOLAR #1020, LLC	7	33,334.90	\$2,344.09	666,660.00	41,168.54	\$2,894.98					70,338.00	\$4,730.26	474,556.28	\$59,474.03			80,005.78	\$4,084.29	
SRCD10506	Can Solar 1, LLC	4	41,883.86	\$2,945.20	838,236.98	175,957.17	\$12,373.21					657,869.81	\$120,728.49							
SRCD10507	Community Energy Solar, LLC	24	37,397.69	\$2,610.13	748,020.90	37,397.69	\$2,610.13					710,633.21	\$52,412.46							
SRCD10509	CEC SOLAR #1023, LLC	10	47,210.93	\$2,440.89	688,934.76	84,271.38	\$24,376.03					81,987.96	\$5,513.68	261,024.42	\$21,142.90					
SRCD10512	Lafayette Solar LLC	17	37,379.47	\$2,628.36	747,448.11	37,379.47	\$2,628.36					710,168.64	\$51,578.43							
SRCD11229	Fresh Air Energy VII, LLC	14	181,348.18	\$13,035.94	362,6963.07	42,537.03	\$2,991.21			245,411.22	\$16,503.89	1,554,385.81	\$151,608.04					1,784,629.01	\$104,251.35	
SRCD11647	CEC SOLAR #1023, LLC	11	42,282.76	\$2,973.33	811,713.20	81,100.10	\$5,702.97					85,722.25	\$3,938.96	672,000.85	\$163,085.90					
SRCD11744	Fresh Air Energy VIII, LLC	13	165,113.09	\$11,281.10	330,2446.79	57,703.89	\$4,057.76					313,192.09	\$21,062.24	2,931,550.81	\$338,657.31					
SRCD18661	Arapahoe Community Solar Garden I LLC	9	40,672.80	\$2,860.13	787,170.57	116,582.52	\$8,198.08	19,247.03	\$ 1,148.86			651,341.02	\$68,731.39							
SRCD18663	Deerwer Community Solar Garden I LLC	14	44,259.50	\$3,112.28	899,711.15	42,532.63	\$3,045.73				53,099.05	\$3,570.91	374,079.47	\$37,438.92						
SRCD18664	Denver Community Solar Garden I LLC	10	48,237.75	\$3,304.74	933,301.16	244,961.59	\$17,235.73					688,388.57	\$325,977.36							
SRCD18665	Adams Community Solar Garden I LLC	10	244,197.60	\$17,231.23	816,644.55	184,994.28	\$13,008.78					631,270.27	\$85,229.73							
SRCD18667	CEC SOLAR #1021, LLC	9	90,538.94	\$6,208.93	770,446.43	464,261.68	\$32,647.07	6,878.31	\$ 483.53			156,939.52	\$10,569.91	142,266.92	\$9,835.19					
SRCD18668	CEC SOLAR #1025, LLC	6	37,613.46	\$2,644.99	693,001.03	374,152.87	\$26,260.57					1,699.06	\$114.27	317,349.10	\$35,380.53					
SRCD18669	CEC SOLAR #1022, LLC	4	49,350.16	\$3,470.33	984,002.10	90,301.03	\$6,982.99					105,921.94	\$7,123.23	781,177.15	\$93,613.25					
SRCD18672	Adams Community Solar Garden II LLC	10	72,037.30	\$5,338.15	985,995.04	54,657.09	\$3,843.45						810,637.95	\$113,464.06						
SRCD18677	Antonito Solar LLC	17	53,722.71	\$3,777.78	1,061,191.93	106,581.62	\$7,494.85					304,825.38	\$22,920.55	582,084.91	\$56,096.95			31,900.02	\$1,914.63	
SRCD23375	Jeffco Community Solar Gardens LLC	16	118,412.75	\$8,326.81	2,491,535.98	189,136.51	\$13,300.11					10,377.25	\$887.88	2,292,027.22	\$353,177.89					
SRCD23376	Adams Community Solar Garden III LLC	9	129,780.81	\$8,887.70	2,934,903.11	88,309.83	\$6,209.87					36,346.68	\$2,444.31	2,449,724.86	\$260,078.01					
SRCD23377	Adams Community Solar Gardens LLC	21	128,165.08	\$8,892.41	2,556,918.30	107,274.65	\$7,543.50					910.17	\$61.21	2,448,733.54	\$273,928.43					
SRCD23380	CEC SOLAR #1119, LLC	30	179,807.11	\$12,644.05	3,477,773.62	179,807.11	\$12,644.05					586,795.47	\$39,462.02	1,269,206.43	\$81,952.61					
SRCD23382	CEC SOLAR #1122, LLC	16	175,027.71	\$12,722.79	3,650,969.46	168,325.58	\$11,880.71				6,706.13	\$ 476.66	3,482,643.87	\$247,475.08					1,441,914.61	\$79,175.55
SRCD23382	CEC SOLAR #1122, LLC	16	172,834.27	\$11,953.82	3,450,025.51	154,022.97	\$10,830.58					18,111.30	\$ 1,122.84	3,283,186.24	\$211,995.34					
SRCD42364	CEC SOLAR #1128, LLC	12	147,555.21	\$10,376.13	3,020,015.65	147,555.21	\$10,376.13						12,639.29	\$849.98	2,861,821.15	\$184,787.80				
SRCD42365	CEC SOLAR #1130, LLC	21	147,692.89	\$10,295.83	2,938,854.06	118,411.30	\$8,326.65					29,281.59	\$1,969.18	2,806,161.17	\$181,193.80					
SRCD42438	CEC SOLAR #1133, LLC	14	151,643.99	\$10,663.56	3,045,851.30	151,643.99	\$10,663.56						2,139,269.60	\$138,132.62					754,347.77	\$41,421.23
SRCD42452	Terraform Power	29	316,672.46	\$20,812.57	1,924,697.81	55,577.55	\$3,908.38					25,244.33	\$1,697.63	1,848,875.98	\$119,059.08					
SRCD42454	Terraform Power	40	171,147.48	\$11,695.93	3,423,011.17	99,561.91	\$7,001.19					27,021.29	\$1,817.21	2,184,618.02	\$141,060.78	1,111,809.95	\$100,841.17			
SRCD42456	Quincy II Solar Garden LLC	14	184,875.40	\$12,257.73	3,861,970.98	55,701.25	\$3,916.96					48,724.78	\$3,343.99	3,255,944.95	\$210,236.40					
SRCD42457	Imboden II Solar LLC	13	160,666.69	\$10,687.24	2,920,959.76	55,098.42	\$3,974.45					136,826.69	\$8,539.10	2,738,134.74	\$176,801.37					
SRCD42458	Imboden II Solar LLC	12	190,948.27	\$12,613.73	3,471,668.81	49,419.10	\$3,475.17						189,931.06	\$12,772.89	3,232,338.63	\$208,710.87				
SRCD42459	Terraform Power	14	167,290.10	\$11,250.24	3,345,804.37							172,429.23	\$11,595.84	3,173,375.14	\$204,904.82					
SRCD42462	Terraform Power	10	154,073.93	\$10,245.21	3,081,422.32							110,890.95	\$7,457.39	2,970,531.37	\$191,807.18					
SRCD42463	Terraform Power	6	80,740.41	\$5,843.04	1,368,727.75	8,413.85	\$591.65					37,826.90	\$2,543.86	1,317,432.00	\$85,066.63					
SRCD42532	San Luis Solar Garden LLC	33	161,428.86	\$11,252.69	3,228,537.75	170,549.77	\$11,993.03					144,594.65	\$9,724.03	1,273,343.71	\$82,219.80					
SRCD50333	Spark CSG 1 LLC	6	13,949.05	\$905.42	816,627.92	2,363.52	\$166.20					1,772.52	\$119.19	77,426.93	\$4,999.45					
SRCD50354	Stanley CSG 1 LLC	6	25,133.80	\$1,628.45	1,397,117.10	2,809.70	\$197.60					2,107.47	\$141.69	134,799.93	\$8,703.98					
SRCD50355	DRV Shared Solar 2019-1, LLC	10	75,835.94	\$5,142.21	1,328,793.94							18,742.48	\$1,260.45	95,850.04	\$6,189.08			18,286.52	\$1,180.76	
SRCD50356	SRC 050356 LLC	6	14,141.17	\$920.91	830,809.87	2,328.90	\$163.76					2,911.11	\$195.78	77,110.86	\$4,979.05					
SRCD50357	SRC 050357 LLC	8	7,746.46	\$537.57	154,069.49	5,422.62	\$381.29					156.28	\$16.39	146,323.03	\$9,451.21					
SRCD50370	Lafayette Horizon Solar CSG LLC	11	184,368.86	\$10,955.36	3,175,409.95	886,704.42	\$27,193.10						2,888,705.53	\$186,523.74						
SRCD50378	DU CSG 1 LLC	5	88,536.81	\$5,720.48	4,530,731.33	7,735.39	\$592.45					108,976.10	\$7,338.60	291,103.50	\$18,786.90			50,758.34	\$4,603.79	
SRCD53579	Native Suns, LLC Tiny Town	12	238,758.59	\$15,651.40	12,108,980.90	3,658.02	\$272.22					88,205.20	\$5,970.80	941,691.21	\$60,805.00			176,724.47	\$16,028.93	
SRCD53581	Mesa CSG 2 LLC	14	118,101.30	\$7,774.57	1,983,079.45	6,173.31	\$434.14					101,398.38	\$6,819.10	1,698,178.98	\$109,651.42			177,328.78	\$16,083.72	
SRCD53962	Housing Authority of the City and County of Denver	20	3,643,530.39	\$235,251.02	36,835,300.39	110,245.87	\$7,752.51						5,523,284.52	\$227,498.51						
SRCD53963	Oak Leaf Solar XXXI LLC	4	508,922.54	\$32,884.78	41,199,666.78	4,119.70	\$286.67					92,095.80	\$6,193.43	4,023,480.55	\$259,786.13					
SRCD53964	Oak Leaf Solar XXXI LLC	11	186,638.78	\$12,071.05	3,663,022.28	3,460.66	\$243.22						3,660,041.62	\$236,328.92						
SRCD53965	Oak Leaf Solar XXXI LLC	7	132,182.34	\$8,549.94	2,931,707.25	2,594.12	\$182.44						2,589,276.13	\$167,189.55						
SRCD53966	Oak Leaf Solar XXXI LLC	7	147,530.35	\$9,538.44	2,960,734.67	2,162.01	\$152.01					54,404.83	\$3,658.74	2,806,167.83	\$184,035.35					
SRCD53967	Oak Leaf Solar XXXV LLC	9	145,263.37	\$9,393.69	2,855,434.54	2,428.90	\$170.87					66								

# Attachment J

# CEO Low-income Rooftop Solar Report

## *Calendar Year 2019 Report*

### Program Summary

The Low-income Rooftop Solar Program provides rooftop solar systems to low-income clients via Colorado’s Weatherization Assistance Program (WAP). WAP has a forty-plus year history of providing low-income residents (below 200% of the federal poverty level) with energy efficiency retrofits to make their homes less expensive to heat and cool as well as safer and healthier places to live. In order to provide its low-income residents with even more opportunity to save energy and money, rooftop solar was added to Colorado WAP in 2017 through the Low-income Rooftop Solar Program in partnership with Xcel Energy.

From January 1, 2017 to December 31, 2019, 247 systems have been interconnected. These systems have a total capacity of 723 kW. See Exhibit 1 for details, below.

Year	Number of Systems Interconnected	Annual Interconnected Capacity (kW)
2017	13	37.2
2018	94	279.1
2019	140	406.9
Total (cumulative)	247	723.2

*Exhibit 1: Interconnected systems from January 1, 2017 through December 31, 2019*

### Program Detail

The following detail section provides further information on the 247 systems which have been interconnected as of December 31, 2019.

#### Details at a Glance

- 247 systems interconnected
- 2.9 kW average system size
- \$8,321 average system cost
- \$2.84 average cost per Watt
- \$462 average annual savings per system (based on 2018 production data)
- SIR of 1.35 over 25 year system life (based on 2018 production data)

#### Impact Detail

The 247 systems interconnected have been installed across Colorado from Denver north to Larimer County, south to Conejos County, and west to Mesa County. Without access to solar through this program these WAP clients would not have been able to afford to put rooftop solar on their homes.

Based on 2018 production data, the typical system generates approximately 350 kWh per month or 4,200 kWh per year. With an expected electricity rate of \$0.11 per kWh, each system will save the homeowner a \$462 per year.

### Ownership Detail

The vast majority of the homes, 208 in total, receiving rooftop solar are owned by the WAP client. An additional 39 homes receiving solar are occupied by renters: 28 of these homes are owned by Casas De Rio Grande, a senior housing facility in Del Norte, Colorado; and 11 of these homes are owned by the Boulder County Housing Authority, an affordable housing agency within Boulder County government.

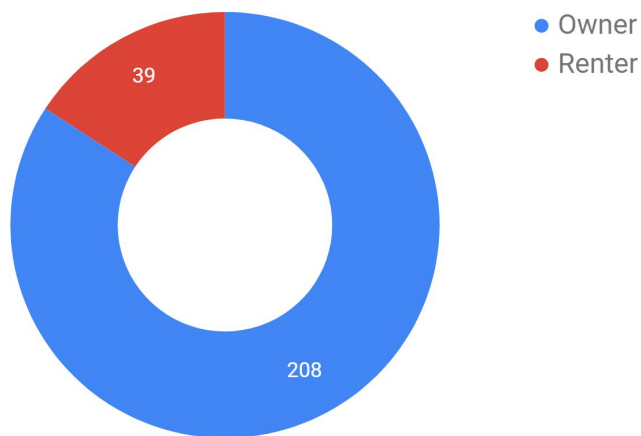


Exhibit 4: Owner and renter distribution of 247 total interconnected rooftop solar homes

### Funding Detail

The 247 systems interconnected to date have cost a total of \$2,055,339, based on invoiced amounts. \$1,446,400 has been paid for with RESA funds and \$608,939 has been paid for with WAP funds. This is a 70% to 30% split, respectively. Per system average cost is \$8,321; \$5,856 is paid with RESA funds and \$2,465 is paid with WAP funds, on average.

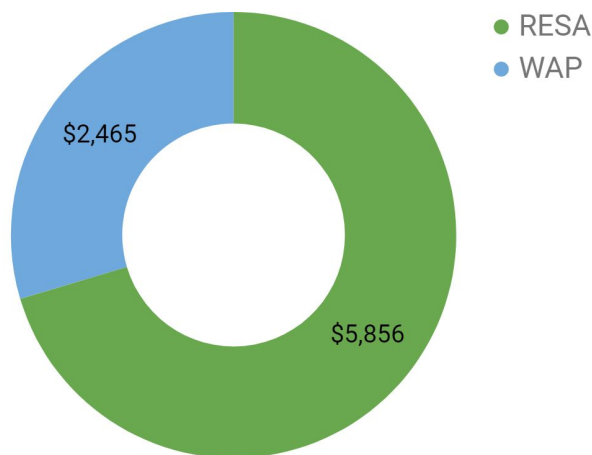


Exhibit 5: Funding distribution of \$8,321 average system cost for 247 interconnected rooftop solar homes

## County and Zip Code Detail

County Served	Number of Systems Interconnected in County	WAP Eligible Households in County	Zip Codes Served
Adams	34	52,932	80011, 80022, 80030, 80031, 80201, 80221, 80229, 80233, 80241, 80260, 80602
Alamosa	18	3,144	81101, 81144
Arapahoe	51	60,773	80010, 80011, 80012, 80013, 80015, 80016, 80017, 80018, 80110, 80113, 80120, 80121, 80122, 80123, 80247
Boulder	14	31,914	80027, 80301, 80305
Broomfield	1	3,743	80020
Conejos	13	1,460	81120, 81140, 81151
Costilla	1	894	81152
Denver	34	98,956	80011, 80123, 80204, 80205, 80211, 80216, 80219, 80220, 80221, 80223, 80229, 80239, 80247, 80249
Garfield	3	6,545	81647, 81680
Jefferson	17	45,632	80002, 80003, 80004, 80005, 80021, 80228, 80232, 80439
Lake	1	1,181	81120
Larimer	2	36,403	80549
Mesa	19	20,221	81501, 81503, 81504, 81505, 81506, 81520, 81521, 81526
Park	1	1,722	80420
Rio Grande	36	1,686	81132, 81144
Saguache	1	1,446	81136
Summit	1	2,648	80435
<b>Total</b>	<b>247</b>	<b>371,300</b>	

*Exhibit 6: Counties and zip codes associated with 247 interconnected rooftop solar homes*

# Attachment K

**Attachment K**  
**Stakeholder Group Progress**

**I. Introduction & Requirements**

As part of the Comprehensive Settlement Agreement (Proceeding No. 16AL-0048E), the settling parties agreed that complex issues in the proceeding would be best addressed through ongoing stakeholder participation. The Stakeholder Groups are designed to identify and address issues leading to additional actions in support of the Comprehensive Settlement Agreement, including actions which may require approval of the Commission prior to the next scheduled proceeding in the matter.

The following Stakeholder Groups were formed in 2017: Distribution Grid and Interconnection (“Grid”) Stakeholder Group; Future Voluntary Renewable Programs (“Future Programs”) Stakeholder Group; and Existing Voluntary Renewable Programs (“Existing Programs”) Stakeholder Group. After discussion with stakeholders at the December 15, 2017 (Q4) meeting, parties agreed that much of the information being shared was crossing into other stakeholder meeting topics, and therefore could be one combined one stakeholder group – Future/Existing Programs and Grid (“Combined”) Stakeholder Group.

In 2018, we combined all stakeholder groups and met on a quarterly basis and called other more specific meetings when they became necessary. This practice continued into 2019 and has become essentially standard practice along with hosting more meetings on more specific topics/issues as they are needed. The Company appreciates and understands the importance of working with Parties on complex issues, and although the requirement in the Comprehensive Settlement Agreement required stakeholder meetings through 2019, the Company recognizes the value in continuing to work with Parties on issues in the future.



## Attachment K Stakeholder Group Progress

Looking forward Company representatives spoke with parties at the June 19, 2019, meeting, prior to filing the 2020-21 RES Plan, and it was agreed upon that quarterly meetings were still valuable and would continue the meetings through the 2020-21 RES Plan. This was relatively a minor topic during the 2020-21 RES Plan Proceeding with parties showing their support for the practice.

The Stakeholder Groups have the following requirements:

- Meet on a quarterly basis.<sup>1</sup>
- Meeting minutes and progress will be posted publicly.
- The Company will provide notice of each meeting to intervening parties in the three Proceedings.
- Open the meeting agendas to suggestions from stakeholders.
- A section of the Company's annual RES Compliance Report will include discussion items and outcomes summarized from the Stakeholder Groups (Pilot Stakeholder Group not included).

The table below lists the dates in 2019 when meetings took place. Meeting materials have been posted to the Company's web site following the conclusion of each meeting and can be found at:<sup>2</sup>

[https://www.xcelenergy.com/company/rates\\_and\\_regulations/stakeholder\\_group\\_meetings](https://www.xcelenergy.com/company/rates_and_regulations/stakeholder_group_meetings)

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<sup>1</sup> Participants can collectively determine if semi-annual meetings are sufficiently frequent.

<sup>2</sup> The Company has retained sign-in sheets from each Stakeholder Group listing participants but has not disclosed those on its web site.

**Attachment K  
 Stakeholder Group Progress**

<b>Stakeholder Group</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
<b>Combined</b>	3/12	6/18	9/19	12/17
<b>Subgroups</b>			9/16, 10/31, 12/4 <i>Solar*Rewards Community Group Meeting</i>	

Stakeholder Group meetings have always been initiated with notice of the meeting date and time to a distribution list that was originally based upon the service list in Proceedings that resulted in the Comprehensive Settlement Agreement. The distribution list has evolved as parties have left positions or have asked to be removed from the list, and as invitations have been sent to additional parties who would benefit from engaging in the conversation. In addition, before each meeting Public Service does solicit agenda items from stakeholders and includes any special topics or presenters that stakeholders feel would be beneficial to particular meetings. In addition, before each meeting, Public Service solicits agenda items from stakeholders and includes any special topics or presenters that stakeholders feel would be beneficial to particular meetings. 2019 meetings have contained both such elements in their agendas.

**Attachment K  
Stakeholder Group Progress**

**II. Stakeholder Group Meetings – Discussion Items and Summary of Outcomes**

This section provides a high-level summary of the discussion items from the various meetings that were held in 2019. Should the reader want more detail, all presentations and meeting materials can be found on the Stakeholder Group web site (link provided above).

**A. Stakeholder Group Activity**

The Combined Stakeholder Group's focus for 2019 was to have open and transparent conversations about the various programs, discussions about the 2020-21 RES Plan, and CSG interconnection issues which ultimately led to a series of three subgroup meetings. The Company views all these meetings as productive and have led to further engagement and collaboration among the various parties.

The Combined Stakeholder Group generally include discussions on program Dashboards, the then future RES Plan, on-going regulatory updates, and legislative activities. At the June 18th meeting, the Colorado Energy Office ("CEO") was featured and presented on their Weather Assistance Program that combines energy efficiency with the installation of on-site solar systems. More details on this program are featured in Attachment J of the 2019 RES Report. Public Service continues to collaborate with CEO and others to discuss ways to provide Low-Income customers with renewable energy options.

As indicated the Company hosted three subgroups dedicated to the Solar\*Reward Community program on September 16, October 31, and December 4. The meeting were focused mostly on various interconnection issues but also discussed other program elements such as hosting capacity resources, tips and tricks for field

## **Attachment K Stakeholder Group Progress**

identification/pre-application data report evaluation, substation overview, SRC metering requirements, open phase testing and ground referencing, and overall program timelines.

The Company worked closely with the CSG development community to address interconnection challenges. We took several approaches to address these challenges, such as introducing a provisional study option which allows for two interconnection locations to be studied concurrently per existing CSG award and providing developers with customer options meeting following the interconnection screen, study, and design to provide insight into PSCo finding beyond what was included in the report. We also capped individual project studies at \$7,000 per awarded projects with using RESA funds to costs in excess of the \$7,000. For these studies, this was a new use of RESA funds but we felt the expenditures were appropriate to assist in the interconnection of projects and fall under funds used for administration of the program. Per Commission Rule 3661(d) administrative costs are capped at ten percent of annual RESA collections. Thus far we have spent approximately \$73,000 towards these studies. These discussions have continued into 2020 and the Company is committed to be transparent and responsive to the issues as they surface.

The table below provides a high-level summary of the various topics that were discussed at the Stakeholder Group Meetings.

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 Stakeholder Group Progress**

Topics:	Stakeholder Group Dates	Summary of Outcomes:
<b>Program Reporting: Dashboards</b>	3/12, 6/18, 9/19, 12/17	<p>The Company discussed the Solar*Rewards Dashboards at all of the quarterly meetings in 2019. Three years of data in a quarterly cadence, provided the Company an opportunity to share and discuss the trends coming out of each quarter, and report out in each of the annual Renewable Energy Compliance Reports.</p> <p>These dashboards have been available to interested parties for much of 2017 and are located on the Company's external web site (see links below).</p> <p><b>Solar*Rewards:</b>  <a href="https://www.xcelenergy.com/staticfiles/xcel-responsive/Working%20With%20Us/Renewable%20Developers/RenDevResCtr-SolarRewards-and-NetMetering-Dashboard-Q4-2017.pdf">https://www.xcelenergy.com/staticfiles/xcel-responsive/Working%20With%20Us/Renewable%20Developers/RenDevResCtr-SolarRewards-and-NetMetering-Dashboard-Q4-2017.pdf</a></p> <p><b>Solar*Rewards Community:</b>  <a href="https://www.xcelenergy.com/working_with_us/renewable_developer_resource_center/solar_rewards_community_developer_resources">https://www.xcelenergy.com/working_with_us/renewable_developer_resource_center/solar_rewards_community_developer_resources</a></p>
<b>2020-21 RE Plan</b>	3/12, 6/18, 9/19, 12/17	<p>The Company discussed details on how they envisioned the 2020-21 RE Plan to look like. Based on on-going rulemakings, the Company suggested a two-year plan that would keep current programs running and provide minor changes.</p> <p>The Company also requested an extension for the 2017-19 Renewable Energy Plan through Q1 of 2020 with the Public Utility Commission. Decision No. R19-0807-I granted the extension of the 2017-19 RE Plan, and the partial waiver of Rule 3657 by Judge Mirbaba.</p>
<b>Renewable Customer Survey</b>	3/12	The Company shared results of their survey which was launched in January 2019. The survey was sent to 13,519 residential program participants.
<b>2018 RES Report</b>	6/18	The Company shared highlights of the 2018 RES Report and the Company's compliance with the RES.
<b>Solar*Rewards Community</b>	9/16, 10/31, 12/4	<p>The Company, along with other Parties, are continuing to work through the next Solar*Rewards Community RFP scoring criteria. Public Service will continue to seek feedback and will work with Parties at the Q2 2020 Stakeholder Meeting.</p> <p>Public Service has taken steps to review revised scoring options with Commission Staff and will soon be bringing those proposed options to a workgroup before filing an updated scoring with the Commission.</p>
<b>Interconnection</b>	9/16, 9/19, 10/31, 12/4	Public Service continues to work closely with solar developers to find a solution to the interconnection issues. In 2019, we collaborated with Parties and discussed options that might help solve the issues in the future.