Section 1 - Executive Summary

In this 2017-2019 Renewable Energy Plan ("Plan" or "2017 RE Plan"), Public Service of Colorado ("Public Service" or "Company") demonstrates its ongoing commitment to investing in Colorado consumers and providing them choices for their energy needs. The Plan is a three-year roadmap to providing our customers affordable and clean energy options that support their environmental preferences and sustainability goals. Through this roadmap, the Company will continue to exceed Colorado’s Renewable Energy Standards, while meeting our customers’ growing energy demands in the most reliable, clean, and affordable way possible.

The 2017 RE Plan demonstrates our commitment to solar by offering more capacity every year from 2017 through 2019. We are proposing to add capacity to our Small Solar*Rewards rooftop program and add new optionality to this offering. We are proposing to add capacity to our Medium Solar*Rewards rooftop program. We are proposing to reopen our Large Solar*Rewards rooftop program to respond to customer input. We recognize not all our customers are able to add solar directly on their properties but still have environmental goals. For these customers, we are proposing to commit to adding more minimum levels of capacity every year for our Solar*Rewards Community solar gardens program. In a separate application, the Company has also proposed a new solar program called Solar*Connect which, if approved by the Commission, will give customers a simple and convenient way to go solar.

Our Plan isn’t just about solar; we are also proposing to reduce the cost of our Windsourse program, which has a long history of providing a green energy option to our customers. Windsourse has been and continues to be a popular way for our customers to participate in renewable energy. The 2017 RE Plan also seeks approval of a Recycled Energy program which could acquire up-to 20 MW per
Recycled Energy is a clean energy option that uses what would otherwise be waste heat or steam to produce electricity at a customer’s site.

We respectfully ask for the Commission to approve this 2017 RE Plan.

**Renewable Energy Standard**

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

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

In this same session, House Bill 10-1342 established what are commonly termed “solar gardens,” facilities that are large enough to meet the solar needs of many

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1 Capitalized terms in this Compliance Plan, if not otherwise defined herein, shall have the same meanings as in the Commission Rules Implementing Renewable Energy Standard, 4CCR 723-3-3650 et seq.
customers. Customers may participate in these solar projects by acquiring a share of a larger facility for purposes of receiving a dollar credit on their electric bills commensurate with their share of the solar garden generation that they acquired. This bill limited Public Service Company of Colorado (“Public Service” or the “Company”) to acquiring no more than 6 MW of solar garden of capacity each year from 2011 through 2013 and provides for the Commission to establish the minimum and maximum capacity starting in 2014 and beyond. By Decision No. C14-1505, the Commission set the range of acquisitions between 6.5 MW and 30 MW in 2014, 2015 and 2016. We are proposing to raise the minimum of the Solar*Rewards® Community program to 10 MW and continue to offer the 30 MW maximum capacity for years 2017 – 2019. Table 1 presents the annual RES requirements by year.

### Table 1. Renewable Energy Standard

<table>
<thead>
<tr>
<th>Period</th>
<th>RES</th>
<th>Distributed Generation (DG)</th>
<th>Retail Distributed Generation (Minimum Requirement)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015 – 2016</td>
<td>20% of retail sales</td>
<td>1.75% of retail sales</td>
<td>Half of DG</td>
</tr>
<tr>
<td>2017-2019</td>
<td>20% of retail sales</td>
<td>2% of retail sales</td>
<td>Half of DG</td>
</tr>
<tr>
<td>2020 and beyond</td>
<td>30% of retail sales</td>
<td>3% of retail sales</td>
<td>Half of DG</td>
</tr>
</tbody>
</table>

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

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

House Bill 15-1284 ("HB 15-1284"), enacted in 2015, changed the requirement for the physical location of a solar garden. HB 15-1284 expanded the authority of a solar garden be able to offer subscriptions to customers located in the same county to the customers in adjacent counties. The Company has already implemented this provision recognizing this statutory change.

Finally, three other bills (House Bill 15-1377, Senate Bills 15-046 and 15-254) also affected the RES, however, these bills did not impact investor-owned utilities such as Public Service.

**Acquisition Plan**
The Company is ahead of compliance in all categories of the RES (Retail DG, Wholesale DG, and Non-DG) and will be able to meet the RES compliance goals in each of the 2017, 2018 and 2019 Compliance Years. Notwithstanding that fact, Public Service requests approval to add substantial amounts of new customer choice eligible energy resources above these minimum state requirements through this 2017 RE Plan in the economic and prudent manner presented.

**Non-Distributed Generation**
The Company has completed the acquisition of renewable resources that were previously authorized by the Commission under the Company’s last Electric Resource Plan ("ERP") in Proceeding No. 11A-869E. Public Service will have sufficient Non-DG RECs to meet the RES for 2017 through 2019 Compliance
Years as a result of acquiring both wind and solar generation under our ERPs since 2005, as well as other wind generation contractually acquired by the Company in prior periods. Public Service also projects it will have sufficient Non-DG RECs from existing eligible energy resources for compliance through the full 10-year planning horizon under the current RES rules.

This RE Plan does not address the acquisition of incremental Non-DG resources. The Company’s retail rate impact results presented in Tables 7-2(a) through 7-2(c) include all Non-DG resources used to meet the Company’s Non-DG compliance requirements. For the 2017 Compliance Year, the Company will have 2,253 MW (name plate) of Non-DG wind serving the Company system and 170 MW (name plate) capacity of Non-DG solar. In Proceeding No. 16A-0117E, the Company has sought approval of an Independent Evaluator because it is evaluating the potential to develop and own new eligible energy resources pursuant to Rule 3660(h). It is anticipated that the incremental addition of these Non-DG resources would be favorable in the retail rate impact results. The Company is committed to providing those impacts at the time the analysis is completed and the seeking approval of such resources filed.

**Wholesale Distributed Generation**

The Company has a number of Wholesale DG resources serving the load needs of our customers. Rule 3652(ll) provides the Commission definition of Wholesale DG which includes renewable energy resources located in Colorado with a nameplate rating of 30 MW or less that do not qualify as retail renewable DG. The Wholesale DG resources, as listed in Attachment RLK-2, Table 4-2, include 63.6 MW of small hydro facilities, 80.9 MW wind, 86.4 MW solar and 3 MW of biomass. As a result of these renewable resources acquired under previous RFPs, as well as other generation owned or contractually acquired by the Company in prior periods, Public Service will have sufficient Wholesale DG RECs to meet the RES for the 2017 through 2019 Compliance Years. In addition, Public Service projects it will have sufficient Wholesale DG RECs from
existing eligible energy resources for the full planning horizon under the 2017 RE Plan.

**Retail Distributed Generation**

Tables 4-2 through 4-4, in Attachment RLK-2 of the 2017 RE Plan, set forth the projected totals for standard offer RECs and other REC purchases. RECs are presented by market segments: Small (0.5-25 kW), Medium (25.1-500.0 kW), Large (>500.0 kW) and Solar*Rewards Community projects. RECs listed as “REC Only” are for those customer-sited roof-top solar system installed prior to 2006.

As of December 31, 2015, the Company has approximately 237 MW of on-site solar installations connected to the system as reflected in Table 4-2. Those connections are expected to generate about 305,000 RECs annually while 16.6 MW of solar garden installations are expected to produce approximately 17,000 RECs annually. The Company will have sufficient Retail DG RECs for Compliance in 2017 through 2019. Projected acquisition of Retail DG RECs for 2017 through 2019 is set forth in Tables 4-2, 4-3, and 4-4. The Company’s forecast of Retail Rate Impact and estimated RESA balance are presented in Tables 7-1 through 7-2(c). The forecast of RESA expenditures presented in the Tables are based upon the maximum forecast capacity additions proposed which are listed below; 87 MW in 2017, 98 MW in 2018, and 106 MW in 2019. The anticipated costs of our proposed programs are included in the On-Site Solar Costs set forth in Tables 7-2(a), (b) and (c).

**Solar* Rewards Community**

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

Since 2012, 47.5 MW of solar garden projects were accepted into the Solar*Rewards Community program, with 9 MW coming from the standard offer program segment for projects between 10.0 kW and 500.0 kW, and 38.5 MW coming from the RFP program segment for projects between 500.1 kW and 2.0 MW. The 47.5 MW consisted of 43 solar gardens owned by several different developers and located throughout Public Service’s territory. At the time of this filing, 24 solar gardens are energized. An additional, 19 gardens are in various stages of development including engineering design review. Pending Commission approval in a separate docket, in 2016 an additional 60 MW of solar gardens will offered through an RFP process.

**Windsource**

Xcel Energy’s Windsource® program is one of the largest utility green pricing programs in the country. Windsource customers in Colorado have purchased over 2.3 billion kWh since the program began in 1997. The program remains a vital part of Public Service’s renewable portfolio and enables our customers to proactively purchase renewable energy to offset their energy use and meet their personal and business needs. The Windsource program was originally established as an experimental, voluntary, value-priced energy program. Designed to stimulate wind development in Colorado, the program was responsible for development of the first commercial wind farm in Colorado, the 30-megawatt Ponnequin wind farm. Demand for the program grew significantly and Windsource is now one of the leading voluntary green power programs in the country.

Premiums from Windsource sales are credited to the Renewable Energy Standard Adjustment (“RESA”) account, which increases the amount of dollars available to acquire renewable resources. Public Service retires RECs in
proportion to the amount of Windsource sales above what is inherent in those sales that are retired for RES compliance.

Windsource is structured to accomplish the following objectives:

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

Public Service is proposing to change the current cost-based pricing methodology to a market-based pricing methodology in order to more effectively meet the program objectives. This change will result in a reduced Windsource premium price, which better aligns with that of third party REC sellers in the market and enables customers to buy a price-competitive green-energy option from a known provider that has the extra benefit of funding additional renewable energy.

Recycled Energy

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

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

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

In Proceeding 15AL-0118E, the Commission ordered the Company to propose changes to its Renewable Energy program. By Decision No. C15-1280, the Company was directed to file a revised Schedule RE with the following information provided in this Plan and supporting testimony:

- A calculation of a lower monthly reservation charge based on six weeks of grace energy;
- A daily demand charge and supporting evidence for its chosen method for calculating that charge; and
- Information on the number of customers who could convert waste heat or pressure to electricity and install systems under 500 kW and between 3 and 5 MW in size.

**Solar*Connect℠**

Public Service Company of Colorado’s Solar*Connect program Application is currently pending in Proceeding No. 16A-0055E. In this program offering, customers may choose to subscribe to a utility scale solar facility and then receive a bill credit for the equivalent system benefit of the solar production.

The Company has designed the program to be complimentary to the existing suite of customer choice options. The Company expects the program will be priced at a premium in the first year and will retire RECs on behalf of customers
in order to help them achieve their sustainability goals. Public Service seeks no Commission approvals for any aspect of Solar*Connect® in this proceeding.

**RESA Deferred Balance**

Commission Rule 3661 establishes the parameters for determining the retail rate impact of implementing the RES. Rule 3661(a) states that the net rate impact of Public Service’s actions to comply with the RES shall not exceed two percent of the total electric bill annually for each retail customer. The Company projects that contributions to the RESA will be sufficient to cover the costs to be charged to the RESA for the years 2017 through 2019.

Our projections are that we will not need to advance funds to the RESA during the Compliance period is based upon certain projections and assumptions embodied in this 2017 RE Plan.
Section 2 – Introduction

Public Service Company of Colorado’s 2017-2019 Renewable Energy Plan (hereafter referred to in Attachment RLK-1 as the Company’s “2017 Renewable Energy Plan”) is comprised of three attachments. Attachment RLK-1 contains a narrative that describes the details of the Company’s proposal for complying with the Commission’s rules implementing the RES, 4 CCR 723-3-3650 et seq. Attachment RLK-2 contains the tables that are referenced in Attachment RLK-1. Attachment RLK-3 contains the Solar*Rewards and Solar*Rewards Community Request for Proposals and contracts, and interconnection agreements.

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

- **Section 1** Executive Summary.

- **Section 2** Introduction.

- **Section 3** Retail Energy Forecast. This section describes Public Service’s retail energy forecast used to estimate the Company’s retail electricity sales from 2016 through 2030. Rule 3657(b)(1)(D).

- **Section 4** Estimates of Existing and Forecasted RECs. This section describes the Company’s estimates of the RECs that the Company must acquire to meet the RES, and describes the Company’s projected transfer of RECs to its wholesale customers, RECs projected to be retired on behalf of the Windsource customers, and RECs which are projected to be sold in the market. This section focuses on the years 2017 through 2019, but also provides longer-range projections of RECs needed through 2026. Rules 3657(b)(1)(D) and 3657(b)(III).
• **Section 5 Acquisition Plans.** This Section describes Public Service’s plans to acquire eligible energy from various categories of solar and non-solar resources, divided into subparts for each resource type. Rule 3657(b)(I) (E), (F), (G), (H), (J), (L); Rule 3657(b) (II) and (V). This section of the Plan also includes the acquisition of solar resources for the Solar*Rewards® Community program including minimum and maximum recommended amounts.

• **Section 6 Other Customer Choice Products.** This section discusses how Recycled Energy, Solar*Connect, and Windsource programs fit into the Public Service portfolio of renewable resources. This section includes features of the programs and explains the premiums we propose to charge for these services. The Company is not requesting approval of Solar*Connect or any of its proposed program features or pricing in this proceeding.

• **Section 7 Retail Rate Impact.** This section discusses the retail rate impact of the Company’s projection of the costs of acquiring the proposed eligible energy through 2026. Rule 3657(b)(I)(A), (B), (C), (F), (G), and (I).

• **Section 8 Cost Recovery.** This section describes the cost recovery mechanism proposed by the Company associated with the cost of implementing the RES within the retail rate impact cap. This section establishes the funds the Company proposes to loan the RESA in advance of customer recovery. Rule 3657(b)(I)(A).

• **Section 9 Net Metering.** This section describes anticipated net metering requirements in 2017 pursuant to Rule 3657(b)(IV).
• **Section 10** Interconnection. This section explains that the Company is not proposing any changes to its interconnection procedures under Rule 3667.

• **Section 11** Conclusion. This section presents the approvals the Company is seeking as part of the 2017 Renewable Energy Plan including the various elements presented in the Plan. Rule 3657(c).
Section 3 – Retail Energy Forecast

For its 2017 RE Plan, Public Service is using its most recent retail energy forecast, which was developed in September of 2015.

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

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

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

Forecast Overview
From 2006 through 2015, Public Service experienced historical growth in retail electric sales, averaging 0.8 percent per year. This growth was driven by: growth in the number of customers; increases in residential cooling saturation; and expansion of natural resource-based industries throughout its service territory.
Public Service’s combined annual retail and long-term firm wholesale electric sales decreased at an average rate of -1.0 percent over the past 10 years. The negative historical growth rate reflects increases in retail sales being more than offset by large declines in wholesale sales due to the expiration of resale contracts. This loss of wholesale customers has stabilized in the last several years.

Public Service’s retail electric sales are forecasted to increase at an average annual rate of 1.0 percent through 2030 while combined annual retail and long-term firm wholesale electric sales are projected to grow at 1.1 percent per year on average through 2030. The projected growth rate in retail electric sales reflects continued residential and commercial customer growth. This growth is, in turn, offset by: the implementation of federal energy efficiency standards; the inclusion in the energy sales forecast the assumption that we will achieve the Demand-Side Management (“DSM”) goals that we proposed for 2016 in Docket No. 14A-1057EG and for all years after 2016 equal to the 2017-2020 goals the Commission ordered in Proceeding 13A-0686EG, Decision No. C14-0731, of 400 GWh per year; and the installation of customer-sited solar generation.

**Details of the September 2015 Energy Sales Forecast**

The results of Public Service’s projected growth rate can be explained by several factors: 1) retail customer growth is projected to grow at an average annual rate of 1.3 percent through 2030, this is partially offset by slower increases in residential cooling saturation; 2) the implementation of federal energy efficiency initiatives (such as lighting and cooling standards); 3) the inclusion in the energy sales forecast the assumption that we will achieve the DSM goals that we proposed for 2016 in Docket No. 14A-1057EG, for all years after 2016 equal to the 2017-2020 goals the Commission ordered in Decision No. C14-0731; and 4) reduced volumes resulting from the installation of customer-sited solar generation. The combination of these factors results in expected growth in energy sales to be slightly lower than historical growth.
Residential energy sales increased by an average of 0.8 percent per year over the past 10 years, with customer growth averaging 1.1 percent per year and use per customer decreasing at an average annual rate of -0.3 percent since 2006. Customer growth is expected to continue, with annual gains averaging 1.4 percent per year through 2030. However, use per customer is expected to decline at an average annual rate of -0.8 percent through 2030. The decline in use per customer is due to the implementation of federal energy efficiency initiatives; the achievement of DSM goals; and reduced volumes resulting from the installation of customer-sited solar generation. In addition, the rate of growth of cooling saturation is expected to be slower than historical growth. As a result, residential sales are forecasted to increase at 0.6 percent per year on average through 2030.

Commercial and industrial sales are projected to increase at an average annual rate of 1.2 percent through 2030, which is a slightly quicker pace than the average growth of 0.8 percent per year since 2006. The quicker forecasted growth is primarily due to the inclusion of additional load related to oil and gas exploration/extraction in Weld County. This increase in load is partially offset by the inclusion of: 1) the assumption that we will achieve the DSM goals that we proposed for 2016 in Docket No. 14A-1057EG and for all years after 2016 equal to the 2017-2020 goals the Commission ordered in Decision No. C14-0731; 2) the implementation of federal energy efficiency initiatives that reduce lighting-related usage; and 3) reduced volumes resulting from the installation of customer-sited solar generation.

Over the past 10 years, total long-term firm resale sales decreased by -11.7 percent per year on average. This negative rate reflects the expiration of some wholesale contracts. Through 2030, long-term firm resale sales are expected to increase by 2.2 percent per year on average. Public Service’s combined retail
and long-term firm wholesale electric sales are projected to grow at 1.1 percent per year on average through 2030.

The Company’s energy forecasts are depicted graphically in Figure 3-1 and in tabular form in Figure 3-2.

**Figure 3-1 Actual and Forecasted Electric Sales (GWH)**
### Figure 3-2 Actual and Forecasted Electric Sales (GWH)

<table>
<thead>
<tr>
<th>Year</th>
<th>Retail Sales</th>
<th>Long-Term Firm Wholesale Sales</th>
<th>Total Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>26,481</td>
<td>7,625</td>
<td>34,106</td>
</tr>
<tr>
<td>2006</td>
<td>27,199</td>
<td>7,036</td>
<td>34,234</td>
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<tr>
<td>2007</td>
<td>28,086</td>
<td>7,195</td>
<td>35,281</td>
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<tr>
<td>2008</td>
<td>28,271</td>
<td>6,270</td>
<td>34,542</td>
</tr>
<tr>
<td>2009</td>
<td>27,279</td>
<td>5,678</td>
<td>32,957</td>
</tr>
<tr>
<td>2010</td>
<td>28,299</td>
<td>4,713</td>
<td>33,011</td>
</tr>
<tr>
<td>2011</td>
<td>28,486</td>
<td>3,993</td>
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<tr>
<td>2012</td>
<td>28,786</td>
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<td>2013</td>
<td>28,861</td>
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<td>2014</td>
<td>28,671</td>
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<tr>
<td>2015</td>
<td>28,700</td>
<td>2,192</td>
<td>30,891</td>
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<tr>
<td>2016</td>
<td>29,038</td>
<td>2,198</td>
<td>31,237</td>
</tr>
<tr>
<td>2017</td>
<td>29,356</td>
<td>2,327</td>
<td>31,683</td>
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<tr>
<td>2018</td>
<td>29,547</td>
<td>2,406</td>
<td>31,953</td>
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<tr>
<td>2019</td>
<td>30,005</td>
<td>2,380</td>
<td>32,384</td>
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<tr>
<td>2020</td>
<td>30,618</td>
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<tr>
<td>2021</td>
<td>31,351</td>
<td>2,479</td>
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<td>2022</td>
<td>31,572</td>
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<tr>
<td>2023</td>
<td>31,801</td>
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<tr>
<td>2030</td>
<td>33,554</td>
<td>3,046</td>
<td>36,601</td>
</tr>
</tbody>
</table>

Note: Values above the heavy line are actual historical values; values below the line are forecasts.
Section 4 – Estimates of Existing and Forecasted RECs

Renewable Energy Standard

Under Commission Rule 3654, Public Service is required to procure RECs to meet the RES. Generally, one REC results from one megawatt-hour of electric energy generated from an eligible energy resource.\(^1\) The RES is based upon percentages of the QRU annual retail energy sales. The RES has three requirements, which are summarized below.

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

\(^1\) Under certain circumstances multipliers are allowed which increase the number of RECs per MWh.
### Table 1. Renewable Energy Standard

<table>
<thead>
<tr>
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<tr>
<td>2020 and beyond</td>
<td>30% of retail sales</td>
<td>3% of retail sales</td>
<td>Half of DG</td>
</tr>
</tbody>
</table>

Table 4-1, in Attachment RLK-2, shows the total RECs Public Service needs to meet the RES for each year 2015 through 2026, based upon the Company’s December 2015 retail energy sales forecast. Additionally, Table 4-1 reflects the number of Retail DG, Wholesale DG and Non-DG RECs required each year.

Table 4-2, in Attachment RLK-2, provides detailed information about: the RECs Public Service has already acquired; the RECs the Company plans to acquire for 2015 through 2019; the RECs Public Service anticipates retiring to comply with the 2017 – 2019 RES; the 2017 through 2019 Windsource program; and, REC sales made to date pursuant to transactions executed to date. The Tables show the sources of RECs and RECs produced. Specifically, Table 4-2 shows the RECs needed by the end of 2017 through 2019 for compliance based on the Company’s December 2015 sales forecast. The RECs retired on behalf of Windsource customers and the RECs sold are presented in Table 4-2. Table 4-3, in Attachment RLK-2 provides information on the RECs Public Service plans to acquire through 2026 based on the 2017 RE Plan. Table 4-4 in Attachment RLK-2 shows the RECs from a proposed solar facility for the Company’s

---

2 The Company does not project any Recycled Energy contributions to compliance until such time as we have actual projects authorized under the program.
Solar*Connect<sup>sm</sup> program along with the planned retirement of 100 percent of the RECs on behalf of the customers participating in the program if approved.

**Wholesale Customers**

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

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

For the 2017 RE Plan Grand Valley, Holy Cross, Yampa Valley, IREA, and the City of Burlington have agreed to pay the full cost of their load ratio share for the acquisition of non-Retail DG eligible energy resources and receives their load ratio share of RECs accordingly. At the time of this filing The City of Center does not receive RECs from Public Service.

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

Currently, the Company is offering the Windsource product pursuant to terms the Commission approved in Proceeding No. 13A-0836E. Those terms recognize that a Windsource customer who purchases 100 percent of their energy from Windsource is already receiving a percentage of their energy from resources that meet the RES requirements. In 2017-2019 that percentage is 20 percent. Therefore, for those customers that purchase 100 percent of their energy through Windsource in 2017-2019, RECs equal to 20 percent of the energy sales to those customers are retired to meet the RES. This method of REC accounting is in accordance with Green-e Standards. Windsource customers are notified in the Windsource Summary of Prices, Terms and Conditions that a portion of Windsource sales are retired for RES compliance.

**Applicable RES Rules**

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

Commission Rule 3654(f) currently provides for a 25 percent “bonus” for each kilowatt-hour of eligible energy generated in Colorado. The sole exception is Retail DG, where the in-state bonus only applies to purchase transactions entered into prior to August 11, 2010. Also, Rule 3654(g) provides for a 50 percent “bonus” for each kilowatt-hour of eligible energy generated from a Community-Based project, which means that Community-Based project generated RECs count as 1.5 RECs for RES compliance. However, for each kilowatt-hour of eligible energy, a QRU may take advantage of only one of the compliance multipliers. The Company applies a 1.25 REC bonus to qualified
resources. Senate Bill 13-252 enacted by the 2013 General Assembly and signed by the Governor restricts the resources eligible for the 1.25 bonus multiplier to all Non-Retail DG resources that were in-service prior to January 1, 2015. To date, the Company does not have any Community-Based projects receiving the 1.5 REC bonus.

**Tracking of RECs**

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

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

A. Non-DG RECs
Public Service projects, using the carry forward provision under the Rule 3654(i), that it will meet its 2017 – 2019 Non-DG RES requirement with RECs carried forward from prior years. Table 4-2 provides the Company’s projections for the Non-DG RECs it will have from 2015 through 2019. Note that the 2015 vintage RECs shown in Table 4-2 for each category are estimates since RECs are created after the operating month, for example December 2015 vintage RECs will create in WREGIS on or around March 1, 2016. The final trued up quantity of 2015 vintage Recs will be provided in the June 2016 RES report.

B. Wholesale DG RECs
Table 4-2 provides the Wholesale DG resources and associated RECs we forecast we will have to meet the 2015 – 2019 Wholesale DG RES requirements. Public Service will meet its 2015 – 2019 Wholesale DG RES requirements with Wholesale DG RECs carried forward from prior years.

C. Retail DG RECs
As shown on Table 4-2, based on its proposed acquisition plan, Public Service will have sufficient Retail DG RECs to meet the 2015 – 2019 RES requirements using RECs carried forward from prior years.

Short-Term Forecast of RES Compliance

Table 4-2, in Attachment RLK-2, projects Public Service’s acquisition and retirement of RECs for compliance with the 2017-2019 RES requirements based on electric retail sales as shown in Table 4-1. All of the RECs carried forward and acquired for purposes of meeting the RES, with the exception of the RECs
transferred, sold or retired for Windsourse, are eligible to be counted for RES compliance.

Table 4-2 summarizes Public Service’s forecasted REC position for 2015 – 2019 RES compliance. Table 4-2 summarizes, by source (including “bonus” RECs): the RECs carried forward from past years; the expected acquisition of RECs; the expected retirement of RECs for compliance; and, the RECs that Public Service forecasts it will have available to carry forward to future years.

**Long-Range Forecast of RES Sources**

Table 4-3, in Attachment RLK-2, sets forth Public Service’s long-range plan for the acquisition of RECs through 2026 based on the resources in the 2017 RES Plan.

The plan includes the 249.9 MW Golden West Wind Farm that became commercial in late 2015, the 120 MW Comanche Solar Farm expected in 2016 and the 50 MW Solar Star Solar Farm that became commercial in late 2015. In addition, the plan is based upon the RECs the Company has acquired from existing eligible energy resources, including resources acquired through the Company’s Solar*Rewards and Solar*Rewards Community programs. Table 4-3 shows only the RECs that the Company expects to acquire -- including the projected bonuses allowed by the RES Rules -- net of transfers each year. Table 4-3 does not show the impact on the REC balance of the carry forward provisions in the Commission’s RES Rules.

Public Service will acquire Retail DG RECs through its Small, Medium, and Large Solar*Rewards programs and through the Company’s Solar*Rewards Community standard offers and competitive bids (Column A). The RECs retired for Windsourse sales are presented in Column B. Column C provides a place
for the Company to reflect the RECs it forecasts it will sell, prior to the application of the 25 percent “bonus,” that number is 0 in column C because at the time of this filing the Company does have contracts to sell RECs. HB 10-1001 removed the “bonus” application for Solar*Rewards for transactions entered into after August 11, 2010, but grandfathered Retail DG RECs prior to this date (Column D). We have a column for the incremental 25 percent bonus (above the in-state bonus) that is provided by Community-Based RECs in Column E, should future projects be considered Community-Based. Currently, our REC forecast does not include the multiplier of 1.5 for Solar*Rewards Community. The total Retail DG RECs that we project are set forth in Column F.

Columns G through I of Table 4-3 show the projections of the Wholesale DG RECs that the Company proposes to acquire through 2026, the projections of REC retirements on behalf of Windsource customers and REC sales. In Table 4-3, all of the Wholesale DG RECs are assumed to qualify for the 1.25 bonus and none of the Wholesale DG RECs are assumed to qualify for the Community-Based bonus. Table 4-3 does not show the impact of the carry forward provision in the RES Rules.

Table 4-3, Columns M through R show the Non-DG RECs that Public Service estimates will be produced through 2026 and the projections for Windsource retirements and REC sales. The sources of these RECs are eligible energy resources owned by the Company and purchases from eligible energy resources. These projections do not account for the carry forward provision in the RES Rules.

Column A in Table 4-4, shows RECs from a proposed 50 MW solar facility to serve our recently filed Solar*Connect green pricing program. At this time it is assumed that the Company will retire 100 percent of the RECs from the facility on behalf of the customers that subscribe to the program if it is approved.
Section 5 – Acquisition Plans

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

Non-Distributed Generation
The Company has completed the acquisition of renewable resources that were previously authorized by the Commission under the Company last resource plan in Proceeding No. 11A-869E. Public Service will have sufficient Non-DG RECs to meet the Renewable Energy Standard (RES) for 2017 through 2019, the Compliance Years covered by this Plan as a result of acquiring both wind and solar generation under our Electric Resource Plans (“ERP”) since 2005, as well as other wind generation contractually acquired by the Company in prior periods. Public Service also projects it will have sufficient Non-DG RECs from existing eligible energy resources for compliance through the full 10-year planning horizon under the current Commission RES rules.

This Plan does not address the acquisition of incremental Non-DG resources. The Company’s retail rate impact results presented in Tables 7-2(a) through 7-2(c) include all Non-DG resources used to meet the Company’s Non-DG REC compliance requirements. For the 2017 Compliance Year, the Company will have 2,253 MW (name plate) of Non-DG wind serving the Company system and 170 MW (name plate) capacity of Non-DG solar.

In Proceeding No. 16A-0117E, the Company has sought approval of an Independent Evaluator because it is evaluating the potential to develop and own new eligible
energy resources pursuant to Rule 3660(h). It is anticipated that the incremental addition of these Non-DG resources would be favorable in the retail rate impact results. The Company is committed to providing those impacts at the time the analysis is completed and any application seeking approval of such resources is filed.

**Wholesale Distributed Generation**

The Company has a number of Wholesale DG resources serving the load needs of our customers. Rule 3652(ii) provides the Commission definition of Wholesale DG which includes renewable energy resources located in Colorado with a nameplate rating of 30 MW or less that do not qualify as retail renewable DG. The Wholesale DG resources, as listed in Attachment RLK-2, Table 4-2, include 63.6 MW of small hydro facilities, 80.9 MW wind, 86.4 MW solar and 3 MW of biomass. As a result of these renewable resources acquired under previous RFPs, as well as other generation owned or contractually acquired by the Company in prior periods, Public Service will have sufficient Wholesale DG RECs to meet the RES for the 2017 through 2019 Compliance Years. In addition, Public Service projects it will have sufficient Wholesale DG RECs from existing eligible energy resources for the full planning horizon under the 2017 –2019 RE Plan.

**Retail Distributed Generation**

A. Retail REC Acquisition

Tables 4-2 through 4-4, in Attachment RLK-2 of the 2017 RE Plan, set forth the projected totals for standard offer RECs and other REC purchases. RECs are presented by market segments: Small (0.5-25 kW), Medium (25.1-500.0 kW), Large (>500.0 kW) and Solar*Rewards® Community projects. RECs listed as “REC Only” are for those customer-sited roof-top solar system installed prior to 2006.
B. Goals for Retail DG

As of December 31, 2015, the Company has approximately 237 MW of on-site solar installations connected to the system as reflected in Table 4-2. Those connections are expected to generate about 305,000 RECs annually while 16.6 MW of solar garden installations are expected to produce approximately 17,000 RECs annually.

The Company will have sufficient Retail DG RECs for Compliance in 2017 through 2019. The projected acquisition of Retail DG RECs for 2017 through 2019 is set forth in Tables 4-2, 4-3, and 4-4. The Company's forecast of Retail Rate Impact and estimated RESA balance are presented in Tables 7-1 through 7-2(c). The forecast of RESA expenditures presented in the Tables are based upon the maximum forecast capacity additions proposed, which are listed below at: 87 MW in 2017, 98 MW in 2018, and 106 MW in 2019. The anticipated costs of our proposed programs are included in the On-Site Solar Costs set forth in Tables 7-2(a), (b) and (c).

Solar*Rewards

Solar*Rewards continues to be popular with customers. In 2015, the Commission issued Decision No. C15-0142, which set annual capacity limits of 24 MW for the Small program and annual capacity limits of 12 MW for the Medium program in 2015 and 2016.

Consistent with this decision, Public Service implemented these capacities at a rate of 2 MW per month for the Small Program and 3 MW per quarter for the Medium Program. In 2015, the Small Program accepted applications on an ongoing basis until the 24 MW were fully subscribed, which occurred in September 2015. In 2016, the Company will be accepting applications on a monthly basis, and therefore will have 2 MW available for each month in 2016. The Medium Program capacity was fully subscribed by October 2015 when the Program was opened for the last quarter of the year. Despite the Solar*Rewards® Program capacity being fully subscribed prior to the end of the year, Public Service received 5.2 MW (927 applications) of on-
site PV application for net metering only after the program had closed and 6.7 MW (1,009 applications) in total for 2015. The Company does not purchase or take ownership of the RECs associated with the customers that have interconnected under a net metering only scenario.

A. Program Acquisition and Pricing

1) Recommended Plan

Our goal is to facilitate solar options for our customers, while balancing the costs all customers pay. The Company is proposing to significantly increase the capacity available for the customer choice programs being offered by the Company over those of the 2014 RE Plan. Table 1 provides a summary view of the Solar*Rewards and Solar*Rewards Community offerings with a more detailed discussion of each program below the table.

<table>
<thead>
<tr>
<th>Program</th>
<th>2017 Capacity</th>
<th>2018 Capacity</th>
<th>2019 Capacity</th>
<th>Total RES Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sm Opt A</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>123</td>
</tr>
<tr>
<td>Sm Opt B</td>
<td>9</td>
<td>18</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>54</td>
</tr>
<tr>
<td>Large</td>
<td>6</td>
<td>8</td>
<td>10</td>
<td>24</td>
</tr>
<tr>
<td>Min CSG</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>30</td>
</tr>
<tr>
<td>Max CSG</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>90</td>
</tr>
<tr>
<td>Total (min)</td>
<td>67</td>
<td>78</td>
<td>86</td>
<td>231</td>
</tr>
<tr>
<td>Total (max)</td>
<td>87</td>
<td>98</td>
<td>106</td>
<td>291</td>
</tr>
</tbody>
</table>
These capacities were developed by reviewing historic demand levels and outreach to the developer and customer community on future plans. By blending the results of these analyses the Company set capacity levels that reflect the ability of the solar industry to complete projects as well as customer interest in developing new solar DG during the Plan cycle.

As discussed earlier, without any incremental additions the Company exceeds the compliance requirement for Retail DG in Compliance Years 2017 through 2019. These program offerings are consistent with Colorado Statute and Commission Rules to develop and utilize renewable energy resources to the maximum practicable extent. Furthermore, the new options are reflective of changes to the rate design proposed in the Company’s Phase II Rate Case (“Phase II Case”) filing\(^1\) as well as the timing of the Phase II Case implementation.

The Company offers pricing for the standard programs as described in Table No. 2 below to support the capacities recommended in Table No. 1. Under this approach, incentives have been determined for all of the choices offered under the Small and Medium Solar*Rewards Programs.

<table>
<thead>
<tr>
<th>Table No. 2 – Solar*Rewards® Pricing Plan ($/kWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>2017</td>
</tr>
<tr>
<td>2018</td>
</tr>
<tr>
<td>2019</td>
</tr>
</tbody>
</table>

To determine these REC prices the Company evaluated how the change in rate design proposed in the Company’s Phase II Case, would affect the economics for customers and developers. To do so, the Company compared the economics under the current rate design and the net metering benefit versus the economics of the...

\(^1\) Proceeding No. 16AL-0048E
fixed grid usage charge or demand charge plus the net metering benefit and equated the difference for calculating the REC incentive under the RE Plan. In order to ensure consistency the Company used similar ratemaking principles and assumptions for the incentive design to those used in the Phase II Case design. Should the Commission change or not approve the rate design for the fixed grid usage charge or RDTOU, the Company would request these REC incentives be recalculated.

In the Small Program – Option A, the Company has set a REC price to keep the average customer revenue neutral or agnostic to participating in Solar*Rewards Program under the proposed R (Residential) rate The Company plans on maintaining the incentive for the duration of the 2017 RE Plan (2017 – 2019).

For the Small Program – Option B, the goal is to encourage customers to select the optional Residential-Demand Time-of-Use (“RD TOU”) rate as opposed to the proposed R rate. This was accomplished by setting the Option B incentive to be revenue neutral to the proposed R rate, then increasing the amount by $.005/kWh as an enticement. The Option B incentive is incremental to the proposed R rate incentive to also make the RD TOU rate agnostic to the current R rate. The total Option B incentive will decline annually to match the anticipated drop in solar costs.

Medium Program REC pricing was set by the Company’s historic approach and will decline annually to reflect expected changes in the cost of DG solar.

For the Large Program, capacity and pricing will be determined through a competitive RFP solicitation to be issued after approval of the Plan. The Company will issue the RFP annually to acquire up to the proposed levels of annual capacity. Like other RFPs the Company has offered, criteria including, but not limited to, price and developer performance will be considered in scoring the respondents’ bids.
As discussed further below for each of the offerings, the Company’s recommended plan strikes a balance between the needs of participants, solar developers, and non-participants. Capacity levels have been expanded to offer more choice and further meet demand. Incentives have been set at levels to entice the customers to participate in the proposed R and optional RD TOU rates while maintaining the policy of a declining incentive on a glide path to zero incentives.

B. Solar*Rewards Program Changes
As the solar marketplace has continued to evolve, program data has indicated a shift away from the dominance of third-party ownership to a balance between third-party and customer ownership. Historically, the program has seen the significant majority of applications through third-party ownership. In 2013, 81 percent of application submissions were third-party owned and respectively in 2014, 75 percent were third-party owned. However, in 2015 this shifted significantly and 60 percent of applications submissions came from customer-owned projects. This is most likely due in part to the decrease in costs and or to the increasing options developers are providing customers to facilitate installation of solar systems such as a solar loan option offered by some of the largest solar developers. As a result, Public Service proposes to eliminate the distinction between ownership types and simply offer Small and Medium Programs with consistent incentives between ownership models.

C. Program Details
1) Solar*Rewards Small Programs (Systems 0.5 kW to 25.0 kW)
The Small Program will have two participant options. The first option will be called Option A and will be available to any customer who takes service under the Company’s standard retail rates. Customers participating in this option will receive a Performance Based Incentive (“PBI”) designed to offset the average customer’s grid use charge. The second option will be called Option B and will be available to any customer taking service under the optional, RDTOU Rate developed and proposed in Proceeding No. 16AL-0048E. Incentives for Option B are designed to offset the
grid access and demand charges associated with the RDTOU Rate. Under both options, the net metering rate will be equal to the volumetric rate associated with the rate. The following tables provide the proposed annual capacity acquisition level and incentive for both options.

<table>
<thead>
<tr>
<th>Table No. 3 – Small Program Capacity Acquisition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program</td>
</tr>
<tr>
<td>Sm Opt A</td>
</tr>
<tr>
<td>Sm Opt B</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table No. 4 – Small Program Incentive Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>2017</td>
</tr>
<tr>
<td>2018</td>
</tr>
<tr>
<td>2019</td>
</tr>
</tbody>
</table>

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

All applications submitted to the program must include a $250 deposit and are subject to completion within 12 months. Any project that is not completed within the 12 month period can request a 60 day extension but the associated deposit will be forfeited to the RESA, if such an extension is requested. If the 60 day extension is granted and the application is still incomplete the application will be cancelled and the applicant must submit a new application and deposit fee. All applications must
also provide the total system size up front for an REC incentive to be secured. Changes are allowed to the systems name plate capacity for a total variance of +/-10 percent up until the contracts have been signed by any party. Any system that varies beyond the 10 percent level after initial submission will be canceled and required to reapply to the program. Deposits and fees will not be transferable and new fees will need to be submitted.

Upon completion of any application, the Company will set two meters, a net energy meter and a dedicated production meter. The net energy meter will be used to record the amount of energy a customer will be charged for during the billing period. The production meter will be owned and maintained by the Company in order to accurately meter and credit customers for any generated RECs. The party contracted to sell the RECs to the Company will be assessed a monthly fee based on the average embedded costs. The fee will be assessed based on the customer rate schedule and will be deducted directly from the standard-offer REC payment.

2) Solar*Rewards® Medium Program (Systems 25.1 kW to 500.0 kW)

The following tables provide the proposed annual capacity acquisition level and incentive for the Medium program.

<table>
<thead>
<tr>
<th>Program</th>
<th>2017 Capacity</th>
<th>2018 Capacity</th>
<th>2019 Capacity</th>
<th>Total RES Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>54</td>
</tr>
</tbody>
</table>
Table No. 6 – Medium Program Incentive Levels

<table>
<thead>
<tr>
<th>Year</th>
<th>Medium Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>$ 0.035</td>
</tr>
<tr>
<td>2018</td>
<td>$ 0.030</td>
</tr>
<tr>
<td>2019</td>
<td>$ 0.025</td>
</tr>
</tbody>
</table>

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

All applications submitted to the program must include a $1,500 deposit and are subject to completion within 12 months. Any project that is not completed within the 12 month period can request a 60 day extension but the associated deposit will be forfeited to the RESA, if such an extension is requested. If the 60 day extension is granted and the application is still incomplete the application will be cancelled and the applicant must submit a new application and deposit fee. All applications must also provide the total system size up front for an REC incentive to be secured. Changes are allowed to the systems name plate capacity for a total variance of +/- 10 percent up until the contracts have been signed by any party. Any system that varies beyond the 10 percent level after initial submission will be canceled and required to reapply to the program. Deposits and fees will not be transferable and new fees will need to be submitted.

Upon completion of any application, the Company will set two meters, a net energy meter and a dedicated production meter. The net energy meter will be used to record the amount of energy a customer will be charged for during the billing period. The production meter will be owned and maintained by the Company in order to accurately meter and credit customers for any generated RECs. The party contracted to sell the RECs to the Company will be assessed a monthly fee based
on the average embedded costs. The fee will be assessed based on the customer rate schedule and will be deducted directly from the standard-offer REC payment.

3) Solar*Rewards Large (RFP) Program (Systems 500 kW to 2 MW)

The Large Request for Proposal (“RFP”) Program has not been available since 2012. However, in speaking with various parties, there may be a customer demand emerging for this program again. Thus, to meet this potential customer demand, the following levels of capacity are being made available during the RE Plan period.

<table>
<thead>
<tr>
<th>Program</th>
<th>2017 Capacity</th>
<th>2018 Capacity</th>
<th>2019 Capacity</th>
<th>Total RES Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large</td>
<td>6</td>
<td>8</td>
<td>10</td>
<td>24</td>
</tr>
</tbody>
</table>

For all bid winners in the Large Program, the end-use customer will enter into a contract with the Company to generate solar energy for a term of 20 years with a PBI payment stream over that 20 year period paid based on actual production. The incentive levels will be set by customer participants through a RFP each year. All RFPs must include a non-refundable bid fee of $500.00. After a complete review of the RFP is conducted, projects will be awarded to the bid winners and are subject to completion within 18 months. Licenses are for each user that logs into the Solar*Rewards® Large Application. The dollar amount required to pay for the site license is subject to change from time to time due to changes in the contract cycle with the software platform vendor. The requester must meet the minimum bid eligibility requirements to be considered for the RFP. Proposals that do not comply with the minimum requirements (Section 3:3.1) will be deemed ineligible and will not be considered for further evaluation. A complete proposal will include the following three components: 1) an executive summary, 2) complete set of applicable forms,
and 3) narrative topics discussion. The evaluation screening will also include an
assessment of cost factors.

Once a respondent is notified of an accepted bid they will have 30 calendar days to
submit: 1) a letter from the proposed retailer indicating they their agreement to go
forward with the project citing specific address and system size; 2) A deposit of
$5,000, which will be refunded if the project is completed within 18 months from the
date of the award. If the project is not completed by that date, the deposit will be
forfeited to the RESA. . Any project that is not completed within the 18 month period
can request a 60 day extension. If the 60 day extension is granted and the project is
still incomplete by the end of the 60 days, the project will be cancelled and the
awarded bid will expire. Once a Respondent has been notified that a bid has been
accepted, the project location, interconnection meter number and retail customer
cannot be changed. If the post-bid requirements cannot be fulfilled, the bid will be
rejected. Public Service then reserves the right to accept the next most cost-
effective bid from another project from this solicitation thereafter.

Upon completion of bid, the Company will set two meters, a net energy meter and a
dedicated production meter. The net energy meter will be used to record the amount
of energy a customer will be charged for during the billing period. The production
meter will be owned and maintained by the Company in order to accurately meter
and credit customers for any generated RECs. The party contracted to sell the RECs
to the Company will be assessed a monthly fee based on the average embedded
costs. The fee will be assessed based on the customer rate schedule and will be
deducted directly from the SO-REC payment.

4) Solar*Rewards Reservation Parameters
The Company proposes to continue with the governors on program acquisition,
monthly for the Small Program and quarterly for the Medium Program, and will
continue to proactively notify developers and publically post when the Programs will
open, the amount of capacity that will be made available, and when all capacity has
been reserved. This system enables customers to have the opportunity to participate
in Solar*Rewards throughout the year and allows the Program to stay open all year.

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

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

5) Tracking Customer Participation in the Solar*Rewards®
Program

Public Service utilizes an online application and tracking system for administering
the Small- and Medium-sized Program segments. Because of the RFP selection
process, the Large Program applications are administered outside of the online
application system. The online system offers a public interface to the dataset that
includes all on-site customer and system details needed to manage the program
applications.

6) Solar*Rewards Contracts

Public Service maintains standardized “base form” Solar*Rewards contracts
containing terms and conditions that govern the Company’s Small, Medium, and
Large Program offerings.
In Attachment RLK-3, we provide the three base form contracts. The only change is the elimination of the distinction between ownership styles. Thus, the following three base form contracts are included in Attachment RLK-3:

- REC Purchase Contract – (0.1 kW to 25.0 kW)
- REC Purchase Contract – (systems greater than 25.0 kW)
- REC Purchase Contract – Third Party Developer

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

7) Contracts with Third-Party Developers

Applications for the Solar*Rewards Small, Medium and Large Program segments are available to third-party developers to own and maintain installations on customer sites. Third-party developers are also allowed to participate in the Solar*Rewards Community program. As the owner/operator of the PV system, the third-party developer enters into the REC purchase contract with Public Service, along with the retail customer, and receives monthly REC payments for the sale of the RECs directly. Under this three-party REC purchase contract, the retail customer acknowledges and consents to the developer’s obligations to operate and maintain the solar system on the customer’s premises and to sell RECs to Public Service during the term of the contract. The developer makes arrangements directly with the end-use customer for the receipt of the electricity generation. As the equipment owner and/or party with operational control over the PV system, the developer is the party who enters into the Interconnection Agreement with Public Service. Similar to the procedural changes implemented as part of the 2012 RES Compliance Plan for
the REC Purchase Contract where a third-party developer has installed the system, the Company has changed its procedures such that both the third-party developer and the retail customer will enter into the Interconnection Agreement with Public Service. This assures that the party who owns or has operational control over the PV System has agreed to and understands the terms of the interconnection, that the customer acknowledges and consents to the interconnection terms, and that Public Service has sufficient rights of access to go onto the customer’s property to inspect the PV System. It also allows for a more seamless administrative process if and when the developer assigns its rights in the PV System to the customer.

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

All Solar*Rewards PV system sizes cannot exceed more than 120 percent of the premise’s average annual consumption.

B. Solar Gardens

1) Solar*Rewards Community Program

The Solar*Rewards Community program is a solar garden program that enables customers who cannot, or do not wish to participate, in the Solar*Rewards program an opportunity to participate in a solar option. The program, which launched in August 2012, serves customers who purchase or lease portions of a solar garden installed in their community. Subscribing customers receive credits on their bill for the energy produced at a central location, avoiding the need to install solar on their premises. This program provides Public Service customers with more solar choices.
Since 2012, 47.5 MW of solar garden projects were accepted into the Solar*Rewards Community program, with 9 MW coming from the standard offer program segment for projects between 10.0 kW and 500.0 kW, and 38.5 MW coming from the RFP program segment for projects between 500.1 kW and 2.0 MW. The 47.5 MW consisted of 43 solar gardens owned by several different developers and located throughout Public Service’s territory. At the time of this filing, 24 solar gardens are energized. An additional, 19 gardens are in various stages of development including engineering design review. It is anticipated that in 2016, an additional 60 MW of solar gardens will be added through the standard offer and RFP program segments.

2) Solar*Rewards Community Acquisition

For the 2017 through 2019 RES Compliance Plan years, the Solar*Rewards Community program will offer to purchase the energy and RECs from qualified solar gardens through an annual RFP in the following amounts:

<table>
<thead>
<tr>
<th>Program</th>
<th>2017 Capacity</th>
<th>2018 Capacity</th>
<th>2019 Capacity</th>
<th>Total RES Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min CSG</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>30</td>
</tr>
<tr>
<td>Max CSG</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>90</td>
</tr>
</tbody>
</table>

These capacities have been developed by analyzing the market demand for capacity in past RFPs as well as analysis of the ability for developers to complete the awarded capacities within the program’s timelines.
3) Solar*Rewards Community - RFP Competitive Solicitation Program

The Company will competitively solicit between 10 MW up to 30 MW of installations annually. The information for the competitive solicitation program will be available on the Company website after the 2017 RE Plan is approved by the Commission and the RFP will open in early 2017 pending approval of the Plan. Although the projects submitted under the Solar*Rewards Community have maximized the size of projects under each program, the Company will open the RFP offer to any size of solar garden up to the maximum 2.0 MW.

4) Solar*Rewards Community – Standard-Offer Program

The Company proposes to continue the Standard-Offer portion of the Solar*Rewards Community program contingent upon developer interest in the 2015 and 2016 standard-offer solicitations. If continued, the Standard-Offer segment will open after the award of projects through the RFP process and the incentive will be set $0.02/kWh above the average REC price of the winning bids of the solicitation.

5) Solar*Rewards Community – Program Changes

Since the 2014 RE Plan, the Company has taken the opportunity to visit with the community solar garden vendor community in regards to the RFP solicitation and award process as well as the process for them to complete their construction and subscription. The Company will continue these discussions on a semi-annual schedule in order to continue to update and improve the RFP process.

http://www.xcelenergy.com/solar
Public Service is proposing changes to our Solar*Rewards Community competitive solicitation in 2014, a copy of which is included in Attachment RLK-3. Specifically, the changes are:

- In Section 1.3, the right to re-bid language was removed because the competitive nature of the RFP process eliminates the need for re-bidding.
- In Section 4.3, consistent with Rule 3652(c) “Definitions,” language was added to encourage bidders to make reasonable efforts to obtain community-based designations for the proposed solar garden.

6) Solar*Rewards Community Project Selection

a. Standard Offer Program

The applications in the Standard Offer Program will be approved on a first-come, first-serve basis once all application requirements and Commission rules pertaining to solar gardens are met. The standard offer program will open after the RFP competitive solicitation is complete and projects are selected.

b. RFP Competitive Solicitation Program

The RFP for the competitive solicitation will be released annually in 2017 through 2019 and developers may gain access to the RFP through the Company website as described in Section B(3) above. The RFP will contain the requirements that need to be included in the bid. Once the bid requirements are satisfied, the Company will use the balance of quantitative and qualitative information to make the project selections. Selection criteria may include:

- Levelized REC price per MWh
  - Will be considered net of avoided cost
- Developer experience
- Permitting Plan
- Production and REC Profile
- Preliminary due developer diligence including:
- Minimum of 10 subscribers
- Copies of signed subscriber agreements
- Subscribers meeting the 120 percent annual average consumptions limitation and reside in the same or adjacent county as the Solar*Rewards® Community system

The mandatory criteria will apply in the bid evaluation once the application has met the application, bid requirements and Commission rules pertaining to solar gardens.

7) Solar*Rewards Community Production Credit

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

The Company’s Solar*Rewards Community Service (“SRCS”) tariff specifies how to calculate the bill credits for each customer class. On February 22, 2016, the Company filed a motion in 13A-0836E, to approve a unanimous settlement with certain Solar*Rewards Community developers in which were in agreement to modify the current Solar*Rewards Community bill credit moving all subscribers to a bill credit based on the class average all in tariff rate. This settlement supports a changing the Total Aggregate Fixed Retail Rate (“TAFRR”) rate calculation. This will result in the solar credit being based on the TAFRR for all class of customers. Both versions of the credit reflect the customer’s average retail rate, but with the costs of transmission and distribution removed. These costs are removed to reflect the
reality that the solar energy must be delivered from the solar garden to the participant and as such the customer should still pay for those services. Transmission and distribution costs are subtracted from the base rates and the Company’s Transmission Cost Adjustment (“TCA”) rider is also subtracted from the credit.

The solar credits and the TAFRR are expressed as a cent per kilowatt-hour (kWh) rate. This simplifies the credit calculation and allows all customers within a rate class to be given the same solar credits and avoids any unintentional influence of marketing to only a certain type of customer. The RE Plan assumes the unanimous settlement is approved.

8) Solar*Rewards Community Administration

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

Due to the popularity of the program and to ensure fairness to other applicants, an application may be withdrawn from the application process for lack of action after certain points in the process. The Company has determined points for withdrawal in the Competitive Solicitation to be: 1) If 90 calendar days has elapsed from issue of an award to which the applicant has not responded; and 2) if the solar installation has not been installed within 30 months after Company approval of the Solar*Rewards Community application. For the Standard Offer Program these points are: 1) If 5 calendar days has elapsed from submission of an application to which the applicant has not provided a deposit; and 2) if the solar installation has not been installed within 30 months after Company approval of the Solar*Rewards Community application.
9) Tracking Customer Participation

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

10) Reservation Deposits

A reservation deposit and escrow fee is required for each system application. For the Competitive Solicitation the reservation deposit and escrow fee are due within 90 calendar days of an application’s submission. For the Standard-Offer Program the reservation deposit and escrow fee are due within five (5) calendar days of an application’s submission. For both the Standard-Offer Program and Competitive Solicitation the reservation deposit is $25,000 and the escrow fee is an additional $100 per kW. The deposit is refundable as long as the project is installed within the 18 months designated completion timeframe. The escrow fee is always refundable, regardless of project completion. As with Solar*Rewards program, the final system size is allowed to vary 10 percent (more or less) from the size stated in the application, as long as the program size restraints are adhered to.

If a project in either the Standard-Offer or Competitive Solicitation is not completed within 18 months, or if the project size variation exceeds 10 percent, the reservation deposit is forfeited and credited to the RESA. Projects that are not completed within 24 months of the application date will be assessed a fee of $1,000 per day until
completion. Projects that are not completed within 30 months will be removed from the program.

11) Solar*Rewards Community Contracts

There is a contract called the Solar*Rewards Community Agreement. The agreement contains the terms and conditions necessary to accommodate the Solar*Rewards Community program offerings. The contract term is for 20 years. The Interconnection Agreement used for the Solar*Rewards Community program is the same as used for any customer seeking DG interconnection. Copies of this agreement can be found in Attachment RLK-3 of the 2017 RE Plan.
Recycled Energy

A. Description

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

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

Although Recycled Energy is not a renewable energy resource by definition under the Commission’s Rules, and therefore does not produce Renewable Energy Credits (RECs), it is an eligible energy resource and generation of energy from a Recycled Energy generator can be used to meet Colorado’s Renewable Energy Standard (RES) under C.R.S. §40-2-124.

Energy efficiency advocates argue that these types of projects may not be economically feasible for customers without an incentive structure. In working with some energy efficiency advocates, an incentive level of $500/kW has been approved as the appropriate incentive level. This is the level of incentive approved by the Commission in Proceeding No. 13A-0836E. In keeping with other RES incentivized programs, which are based on actual generation, the Company’s incentive program for Recycled Energy will also be performance-based. Customers with customer-owned Recycled Energy Generation who enter
into a Recycled Energy Incentive Contract with the Company, with a minimum 20
year term, will receive an incentive of $500/kW. The Company will pay the
customer incentives for the 20 year term over 10 years in accordance with the
terms and conditions of the Recycled Energy Incentive Contract. Should the
customer not produce over the full 20 years, the Company reserves the right to
seek repayment of the advance incentive. Additionally, in the event that
customer’s RE generators produce excess energy over that energy used by the
customer’s facility, the energy shall be purchased by the Company at 4.3 cents
per kW.

In compliance with Decision Nos. R14-0902 and C14-1505, the Company filed
Advice Letter No. 1686 – Electric on February 23, 2015 proposing a Recycled
Energy Tariff (“Schedule RE”). The proposed Schedule RE went to a hearing
before an Administrative Law Judge. Recommended Decision No. R15-0995
mailed September 16, 2015, and Commission Decision No. C15-1280 mailed
December 4, 2015, permanently suspended the effective date of Schedule RE
filed by the Company and ordered the Company to file a revised Schedule RE
consistent with the findings and directives of Decision No. C15-1280 and C16-
0028 with its next Renewable Energy Standard Compliance Plan to be filed no
later than February 29, 2016. We do so in supporting testimony accompanying
this 2017 RE Plan.

B. Provisions of the Revised Schedule Recycled Energy

Consistent with the findings and directives of Decision Nos. C15-1280 and C16-
0028, the Company is submitting a revised Schedule RE with the following
provisions:

1) Recycled Energy Program Capacity

   • Individual generators may be sized to a maximum of ten (10)
     MW;
• Total program capacity is twenty (20) MW, annually;
• Energy generated by Recycled Energy facilities above 100 percent of the Customer’s load is owned by the Customer;
• Excess energy is paid at a rate of 4.3 cents per kWh.

2) Standby Rates
• Standby Rates for customers are contained in Schedule RE;
• Customers with generators under 500 kW in size will be allowed standby service at their option;
• Customers with generators between 500 kW and 10 MW must take standby service;
• Standby charges are assessed on the customer’s actual load as measured by the Company;

3) Grace Energy and Monthly Reservation Fee
• Customers will have six weeks (1,008 hours) of annual grace energy hours;
• The Monthly Reservation Fee will be based on six weeks (1,008 hours) of grace energy hours and account for the high capacity factor of Recycled Energy facilities.

4) Demand Charge
• An appropriate level of a daily demand charge is included under Schedule RE.

C. Participants
Based on the complex nature of developing and running a Recycled Energy generator the Company does not anticipate a large number of participants. However, per Decision No. C15-1280 the Commission requested the Company
use internal resources to provide an estimate about the number of its customers who may be eligible to take service under the revised Schedule RE, particularly the number of customers that may install recycled energy systems; (1) under 500kW in size, and (2) between 3MW and 5MW in size. In its analysis, the Company considered the number of its customers who could convert waste heat or steam from industrial processes, customers who have inquired to the Company about a recycled energy program, and Company outreach to customers about interest in a Recycled Energy program. The Company estimates that four customers may be eligible under Schedule RE with Recycled Energy systems installed under 500kW and estimates three customers may be eligible under Schedule RE with Recycled Energy systems installed between 3MW and 5MW.

E. Customer Experience
The application process for these projects is expected to be straightforward but may take time due to the long development time. The process can be broken into steps: Application Submission/account manager contact, Application Review, Project Installation, and Incentive Payment. The Company plans to develop information to help customer’s make an informed decision about potential Recycled Energy projects by creating a dedicated section on the Xcel Energy website and drafting support materials to generate awareness of the Recycled Energy program. Outreach efforts to build awareness of the offering are likely to include email templates, vendor/trade communications, trade shows and training for account managers and Business Solutions Center representatives.

Once a customer has made the decision to move forward with a project, they will submit an application which will be reviewed for completeness and accuracy with the terms of the tariff by the Recycled Energy program product manager. The product manager will either approve the application as complete or provide feedback to the customer with necessary revisions.
An approved application will result in the reservation of capacity in the program. Capacity is reserved on a first come, first served basis. At this point, the customer can then move on to the construction phase of the project. Customers shall install, own, operate and maintain their Recycled Energy generation system. Upon completion of construction, the customer signs the verification section of the application and submits it to the product manager. The product manager provides the customer with the Recycled Energy program contract, which requires the customer’s signature.

Once the program contract is signed and returned, a production meter will be installed, and the Company will bill the customer pursuant to Schedule RE in the Colorado PUC Electric Tariff. The incentive will be paid to the customer on a monthly basis for a period of 10 years.

**Solar*Connect℠**

Public Service Company of Colorado’s Solar*Connect program application is currently pending in Proceeding No. 16A-0055E. This program offers customers another voluntary choice option for those that wish to participate in a new utility scale solar facility. In this program offering, customers may choose to subscribe to a utility scale solar resource and then receive a bill credit for the equivalent system benefit of the solar production.

The Company has designed the program to be complementary to the existing suite of customer choice options of Solar*Rewards, Solar*Rewards Community, and Windsource. The Company expects the program will be priced at a premium in the first year and will retire RECs on behalf of customers in order to help them achieve their sustainability goals. Public Service seeks no Commission approvals for any aspect of Solar*Connect in this proceeding.
Windsource

Xcel Energy’s Windsource program is one of the largest utility green pricing programs in the country. Windsource customers in Colorado have purchased over 2.3 billion kWh since the program began in 1997. The program remains a vital part of Public Service’s renewable portfolio and enables our customers to proactively purchase renewable energy to offset their energy use and meet their personal and business needs.

A. Background

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

In 2009 the Commission approved a Windsource redesign to which premiums from Windsource sales are credited to the Renewable Energy Standard Adjustment (“RESA”) account, which increases the amount of dollars available to acquire renewable resources. Public Service retires RECs in proportion to the amount of Windsource® sales above what is inherent in those sales that are retired for RES compliance.

Windsource is structured to accomplish the following objectives:

- Meet the demand of customers who wish to purchase renewable energy in excess of RES;
- Offer renewable energy at reasonable rates under flexible terms; and
- Ensure that non-participants are not economically impacted by the Windsource program.
B. Proposed Program Changes
Public Service is proposing to change the current cost-based pricing methodology to a market-based pricing methodology in order to more effectively meet the program objectives. This change will result in a reduced Windsource premium price, which better aligns with that of third party REC sellers in the market and enables customers to buy a price-competitive green-energy option from a known provider that has the extra benefit of funding additional renewable energy.

C. Proposed Change to the Pricing Methodology
The current pricing methodology, approved in Commission Decisions Nos.C10-1033 and C10-1221, takes a forward-looking view at the incremental costs to add new renewable resources to the Public Service portfolio. This forward-looking cost modeling relies on a set of market cost assumptions related to future theoretical acquisitions of renewable energy beyond what is required by the RES. Given that the Production Tax Credit and the Investment Tax Credit for renewable resources was extended by Congress in December 2015, use of the existing methodology would likely result in a Windsource premium that would reflect very low or possibly negative REC prices. Selling RECs through the Windsource program at too low of a price would be unfair to non-participant customers; therefore the Company is proposing to change this premium pricing methodology.

The proposed market-based pricing methodology will use a simple average of five third party REC sellers REC programs found to be offering Colorado wind RECs to residential and/or business customers in Colorado. The Company’s customers, who could participate in Windsource, could choose to participate in one of these programs instead. Therefore, using these programs to determine a market-based price is logical. This proposed pricing methodology is clear and
simple, and can be replicated in future RE Plans to further update the Windsource premium.

D. Proposed Change to the Windsource Premium

In accordance with the proposed change to the Windsource pricing methodology, Public Service proposes to change the Windsource premium to $1.50 per 100 kilowatt-hour block. This premium was calculated by taking a simple average of the cost per kWh of wind energy offered by 5 third party REC sellers who sell Colorado wind RECs in the Company's service territory. This change represents a 30 percent reduction over the current premium of $2.1588 per block.

A 2013 Praxi Group study indicates that the strongest driver for program participation is cost. More customers significantly value and indicated their likelihood to participate in a lower priced program, and place the cost of participation higher than other factors such as using a renewable resource, participating in a simple and hassle free program, and being green when making a participation decision. In addition, the research demonstrates that as the price declines, customer participation, and therefore sales, increase. During the past four years, the Company has reported a 6.5 percent average decline in C&I customer participation in Windsource in Colorado. We believe this attrition is due to the high cost of Windsource compared to other available renewable energy and REC purchase options in the market. A reduction in the Windsource premium is central to maintaining the health of the program and continuing to serve our environmentally minded customer or those with sustainability goals and attract new customers.

The Company believes that this premium level will increase participation in Windsource and concurrently enable the Company to retain the program contribution to the RESA balance over time. The Company has presented a Windsource Revenue Forecast, based on the new Windsource premium. in
Attachment KRK-2, an attachment to the Direct Testimony offered in support of this Plan by Company witness Kerry Klemm.

**E. Implementation Plan**

Once our Plan is approved, the Company will file a compliance tariff reflecting the Commission decision with the new rate which would go into effect on not less than two days’ notice. Should the Commission deny our proposed changes in this Plan, we will continue to offer Windsource under the Company's current tariff, Windsource Service\(^1\).

**F. Green-e Certification**

The Windsource program will continue to maintain its certification through the Green-e Energy program. Green-e Energy provides oversight for voluntary renewable energy transactions in the United States. The Green-e Energy National Standard identifies many criteria renewable energy must meet to be certified. Energy must come from eligible sources of supply, like wind, and only new renewable facilities can be used, built within 15 years of the sales year. Energy applied to sales in a given year must be generated over a certain span of time either in that year, in the last six months of the previous year, or in the first three months of the following year. Certified energy is accounted for and tracked through the annual Green-e Energy verification audit process, which Public Service completes annually and completed most recently in June of 2015. Green-e also performs marketing compliance reviews to ensure that customer communications are transparent, that programs live up to their advertising claims, and that customers are getting what they have paid for. Public Service most recently completed a marketing compliance review in August 2015.

\(^1\) Public Service’s approved tariff, COLO. PUC No. 7 Electric Sheet No. 91
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 percent 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 buy all of their electricity under the Windsource program in 2017, 20 percent of the RECs associated with the energy they purchase will be retired to meet the RES, leaving 80 percent of their RECs required retired under Windsource.

G. Windsourse Forecast
Based on the proposed price of $1.50 per 100 kWh block, in 2017 the Company expects Windsource sales of 187,396 MWh with associated revenue of $2.8 million. For 2017 through 2026, we expect an average annual growth rate of four percent, with total sales of 2,187,972 MWh and associated revenue of $32.8 million. The majority of that growth front-loaded in the first two years as we anticipate extensive growth due to the switch to a market-based price.
Section 7 – Retail Rate Impact and Projected Spending Levels

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

The Company’s 2017 Renewable Energy Plan provides for the acquisition of eligible energy resources in advance of when such resources are needed to comply with the RES. C.R.S. §40-2-124(1)(g)(l) permits a utility to acquire more than the minimum amount of eligible energy resources and RECs required by the RES, so long as the retail rate impact does not exceed the maximum two percent on customers’ bills allowed by law. As is shown by Table 7-2(c), the Company continues to estimate that these resources can be acquired for an incremental rate impact of no more than two percent over the 10 year RES Planning Period.

RES/NO RES Modeling
Rule 3661(h) sets forth the basic method for calculating the additional or “incremental” costs that result from adding eligible energy resources to the Public Service system in order to comply with the RES. The rule details the methodology by which Public Service is to use its computer models to estimate the incremental costs associated with the addition of eligible energy resources. The rule methodology requires modeling the total electric system costs of two alternative scenarios or models of electric resources over the RES Planning
Period. The first scenario ("RES Plan") includes the eligible energy resources that are present or projected to be added on the Public Service system. The second scenario (the "No RES Plan") is comprised of a sufficient amount of "non-renewable resources reasonably available" that would be needed to replace the "new" eligible energy resources in the RES Plan. The difference in annual system costs between these two scenarios for any particular year is referred to as the net modeled incremental costs of the eligible energy resources.

**Assumptions Used in RES/NO RES Modeling**

Rule 3661(e) states that for purposes of calculating the retail rate impact, Public Service "shall use the same methodologies and assumptions it used in its most recently approved electric resource plan under the Commission’s Electric Resource Planning Rules, unless otherwise approved by the Commission." Notwithstanding, Commission Order C16-0127 in Proceeding No. 15V-0473E directed the Company to file the technical assumption needed to evaluate the RES compliance plan contemporaneously with the filing of this 2017 RE Plan. The Company used the same modeling assumptions for the RES and No-RES plans as were filed contemporaneously with this 2017 RE Plan in Docket No. 15V-0473E per Commission Order C16-0127. These technical assumptions are largely the same assumptions employed in the 2011 ERP, but have been updated to reflect current market conditions. In addition to these refreshed assumptions, the Company also included in the modeling for this 2017 RE Plan the acquisition of the wind and solar resources selected as a result of the 2013 All-Source Solicitation.

The Company did not include any carbon cost imputations in the model runs and other calculations set forth on Table 7-1 and Tables 7-2(a), (b) and (c) for this 2017 RE Plan which are consistent with the assumptions filed in 15V-0473E. As this RE Plan only covers the 2017, 2018 and 2019 Compliance Years, the Company has a high degree of confidence that any potential carbon legislation will not have an impact over the contemplated compliance period. Furthermore,
in Commission Decision No. C13-0094, which determined the modeling assumptions resulting from the 2011 ERP for use in the Company’s 2013 All-Source Solicitation evaluation and this RE Plan, the Commission did not require a carbon price as part of the base case modeling assumptions.

**Resources Included in Both RES and NO RES Plans**

Commission Rule 3661(h)(III) considers all eligible energy resources whose acquisition commenced prior to July 2, 2006 to be considered “sunk” resources, meaning that those resources and their cost impacts are included in both the RES Plan and the No RES Plan. When the annual costs of the RES Plan and No RES Plan are compared with one another to determine the incremental cost of renewables, the cost impacts of the sunk resources act to cancel out between the two plans and thus do not contribute to the modeled incremental costs of the eligible energy resources.

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

For those Eligible Energy Resources whose incremental costs have been explicitly locked-down by prior Commission order, only the locked-down incremental cost of those resources are included when calculating the total retail rate impact for the period of the lock down. Volume II, Tables 7-3 (a) and (b) identify the eligible energy resources which have had their respective incremental costs explicitly locked down, and that are included in both the RES and No RES Plans when performing the retail rate impact calculations for the current RES Planning Period.

The following eligible energy resources incremental cost impacts have been locked down for various periods of time by prior Commission order:

- 2007/08 Solar*Rewards
- 2009 Solar*Rewards (January 1 through September 30, 2009)
- SunE Alamosa 8 MW PV solar
- Greater Sandhill 18 MW PV solar
- San Luis Solar 30 PV solar
- Northern Colorado Wind I 151 MW wind
- Northern Colorado Wind II 23 MW wind
- Cedar Point Wind 250 MW wind
- Cedar Creek II 250 MW wind
- Limon I 200 MW wind
- Limon II 200 MW wind

Tables 7-3(a) and (b) identify the incremental costs of all the aforementioned locked down resources. As provided by Rule 3661(h)(V), the incremental costs for all locked down resources contained in Tables 7-3(a) and (b), (with the exception of SunE Alamosa and on-site solar prior to 2009 whose incremental
costs have been locked for the entire life of the PPA/contract), were locked down for the period extending to when the Commission issues a final decision regarding this 2017 RE Plan. Since it is unknown when the Commission will issue a final decision regarding the 2017 RE Plan, for the purpose of modeling the Retail Rate Impact of these locked down resources we have assumed that they will remain locked down through the remainder of 2016, and become unlocked on Jan 1, 2017. The retail rate impact of the unlocking of these resources is reflected in Tables 7-2(a), (b) and (c).

The incremental costs of renewable resources acquired as a result of the 2013 ERP All Source Solicitations process as well as certain miscellaneous small resources and resources acquired through the Solar*Rewards program after September 30, 2009, have not been explicitly locked down. Instead, their respective incremental costs have been set using the assumptions of the prevailing RES Compliance Plan. In the case of this 2017 RE Plan, all unlocked resources would have their incremental costs set for 2017, 2018 and 2019 using the assumptions underlying this 2017 RE Plan. The incremental costs for the “unlocked” resources have been estimated from the RES and No RES model runs performed to prepare this 2017 RE Plan.

RES and NO RES Model Runs, Calculation of Incremental Costs and Avoided Energy Costs
Once all of the eligible energy resources that have not been locked down have been identified, the RES and the No RES Plans can be run. Traditionally, the Company has identified the costs resulting from the No RES Plan as the system “Avoided Energy Cost,” or the costs that would have otherwise been incurred had it not been for eligible energy resources. The costs identified in the RES Plan then are compared to the costs identified in the No RES Plan, the resulting difference in costs are the incremental costs to be allocated to and recovered through the RESA, and is included in the calculation of the retail rate impact. The Avoided Energy Costs, which are the costs that would have been incurred
without the addition of any Eligible Energy Resources, are charged to the Electric Commodity Adjustment (“ECA”) and are sometimes referred to as “ECA Costs.”

**Credits to the RESA Deferred Account**

The Commission ruled in Decision Nos. C12-0081 and C12-0294, in Docket No. 11A-510E, that margins on Hybrid REC sales shall be split 80 percent to customers and 20 percent to Public Service for total annual Hybrid REC margins of $20 million or less. This split of Hybrid REC margins changes to 90 percent to customers and 10 percent to Public Service for total annual Hybrid REC margins in excess of $20 million. The Commission further ordered that the Customer portion of Hybrid REC margins shall be applied to the RESA account. As of February 17, 2016 Public Service has generated approximately $1.2 million dollars of hybrid REC margins, of which 80 percent is due to be paid to customers. At this time, the Company has no further projection of future hybrid REC sales, but may engage in additional sales should the opportunity become available. As such, Table 7-2 (c) under column I titled “REC Margin Revenue” contains the year to date hybrid REC margins attributable to the RESA account, but does not estimate any further transactions.

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

Both the Windsource revenues and Recycled Energy revenues and costs are allocated to the RESA which will potentially have positive net effect on the RESA. The Company has not projected any costs under the Recycled Energy program proposed under the tariff and only reflect the expected Windsource revenues relate to the redesigned program.
Retail Rate Impact Analysis

Tables 7-2(a), (b), and (c) represent the retail rate impact calculations similar to the retail rate impact calculations presented in prior RES Compliance Plans. The values contained in Tables 7-2 are derived from modeling that is based on the gas and coal price forecasts, methodologies and other assumptions filed contemporaneously in Proceeding No. 15V-0437E.

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

Description of Tables

Tables 7-1 through 7-3 segregate costs between: 1) the costs associated with eligible energy resources locked down by Commission order; and 2) the costs associated with eligible energy resources whose costs are not locked down, but are set by the assumptions in this 2017 RE Plan. Further, for both locked down and unlocked resources, the design explicitly demonstrates the total cost of eligible energy resources, as well as the portion of the cost that are incremental and recoverable through the RESA, and the portion of the costs that are avoided and recoverable through the ECA.

Table 7-1:

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

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

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

Column C, “Wind Total Costs,” identifies the estimated total costs of Wind resources. Column D, “Other Renewable Total Costs,” identifies the estimated total costs of the non-solar, non-wind, eligible energy resources. There are no costs contained in this column for the 2017 RE Plan.

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

Column E, “Total Cost,” is a summation of the total costs contained in columns B, C, and D. This total does not include the costs of the Company’s Solar*Rewards and Solar Rewards Community programs. These programs are reflected in columns H through J.
Column F, “B, C, D Modeled Incremental Cost,” (Table 7-2(a)) and “B, C, D, Locked Incremental Cost,” (Table 7-2(b)) are the incremental costs associated with the resources contained in columns B, C and D. In Table 7-2(a), Column F is the unlocked incremental cost and is equal to the difference of system costs between the RES and No-RES Plans. In Table 7-2(b), Column F is the locked down incremental costs as set by Commission order. A more detailed calculation of these costs can be found in Tables 7-3(a) and (b).

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

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

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

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

Column L, “Incremental Costs,” is the sum of the Eligible Energy Resource incremental costs in columns F and J.


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

Column A identifies the calendar year.

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

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

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

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

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

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

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

Column J, “Wholesale Customer RESA RJA Credit” is the projected wholesale customer load ratio share of the incremental costs of the eligible energy resources the Company estimates it will collect under its existing wholesale rates.

Column K, “Unlocked Avoided Costs,” is the total avoided costs, recoverable through the ECA, of the eligible energy resources which have not been locked down by Commission order. This is calculated in column M in Table 7-2 (a).

Column L, “Locked Avoided Costs,” is the total avoided costs, recoverable through the ECA, of the eligible energy resources which have been locked down by Commission order. This is calculated in column M in Table 7-2 (b).
Column P, “Total Renewable Resource Costs,” is the total costs of all locked and unlocked eligible energy resources contemplated by the RESA. The column is a sum of columns B and C.

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

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

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

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

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

Column V, “Rolling Balance (Deferred),” shows the projected running accrual of surpluses or deficits in the RESA account from year to year over the entire RES Planning Period.
Approval of Spending Levels and Request for Prudence Determination

In this 2017 RE Plan, the Company projects that contributions to the RESA will be sufficient to cover the costs to be charged to the RESA in the 2017, 2018 and 2019 Compliance years. See Table 7-2(c) in Column S. Thus, we project we will not need to advance any dollars to the RESA for the Compliance period.

Our projections that we will not need to advance funds to the RESA during the Compliance period is based upon certain projections and assumptions embodied in this 2017 RE Plan. We anticipate that the Company energy sales, the level of renewable generation and possibly other projections and assumptions will be different than what is embodied in our 2017 RE Plan. Should those projections and assumptions prove to be inaccurate; the Company may need to advance further funds to the RESA in order to meet its obligations in the 2017, 2018 and 2019 Compliance years. As soon as the Company becomes aware of the possibility that it may be required to advance an amount to the RESA that exceeds the amounts set forth above, the Company will make the appropriate filings with the Commission.
Section 8 – Cost Recovery

Cost Recovery Mechanism
Public Service plans to use the same cost recovery and deferred accounting mechanisms for its 2017 RE Plan that the Commission approved for the 2009 through 2016 RES Compliance Years, namely: (1) the Electric Commodity Adjustment ("ECA") is used to recover the costs of eligible energy that match the costs of the avoided non-renewable resources; and, (2) the RESA is used to recover the costs of the eligible energy that are incremental to the costs of the avoided non-renewable resources as well as the program and administration costs of the Solar*Rewards and Solar*Rewards Community programs.

In the 2009 through 2016 Compliance Years the Company used the ECA deferred account as the true-up mechanism for cost allocation of eligible energy resources. Under this mechanism, Public Service first charges the ECA for 100 percent of the allowable costs of eligible energy resources except Solar*Rewards. After all costs are in the ECA, the incremental costs associated with the eligible energy resources that are recoverable in RESA are transferred from the ECA deferred account into the RESA deferred account. As a result, the Avoided Energy Costs for the period are collected through the ECA and the modeled incremental costs are collected through the RESA. The Company determines, through modeling the incremental costs of these resources, which is derived from the difference between the RES Plan and the No RES model runs. In this way, the RESA continues to recover only the net incremental costs of eligible energy resources. The Commission initially approved this cost recovery mechanism in Decision No. C09-1037 in Proceeding No. 08A-532E and reaffirmed it in all subsequent decisions related to the accounting treatment of eligible energy resources for Public Service.
The incremental costs as discussed in Section 7 of the Non DG eligible energy resources are derived by multiplying the actual monthly production for each eligible energy resource which are then recovered through the RESA. The incremental costs of the eligible energy resources are charged against the RESA by transferring an amount equal to the net incremental costs from the ECA to the RESA deferred account. The costs of eligible energy resource charged to the ECA are the avoided costs which are considered the costs that would have been experienced without the addition of any eligible energy resources.

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

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

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

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

**RESA Expenditures**

House Bill 10-1001 recognized the authority of a utility to advance funds to the RESA prior to their collection from customers in order to acquire renewable resources in advance of funds being available. The statute provides that: “Such funds shall be repaid from future retail rate collections, with interest calculated at the qualifying retail utility's after-tax weighted average cost of capital, so long as the retail rate impact does not exceed two percent of the total annual electric bill for each customer.” C.R.S. §40-2-124(g)(l)(B). State statute does not require the reciprocal interest calculation on a positive RESA balance. However, when the Commission incorporated this statutory language in to Rule 3660 (e) the Commission went beyond enabling legislation by requiring the interest be reciprocal on the RESA balance.
The Company’s estimates show that in 2017 through 2019 the RESA deferred account will remain positive based on the Company proposed customer choice offerings presented in Section 5.

**Regulatory Accounting for the RESA Program**

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

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

- Renewable Energy Credits (RECs)
- Rebates
- REC certification
- Meter sets for second meter
- Incremental energy costs
- Application deposits

Administrative costs include, but are not limited to:

- Incremental labor, employee expenses
- Marketing
- IT software for REC database
- IT software for Solar*Rewards Community
- Billing costs
- Audit fees

Rule 3661(d) caps administrative costs at 10 percent per year of the total annual collection. Public Service does not anticipate exceeding that cap.
Section 9 – Net Metering

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

On January 25, 2016, the Company filed Advice Letter No. 1712\(^1\) proposing new rate designs for many of our existing service schedules. As a result of the analysis performed related to the recovery of fixed costs, the Company has proposed modifying the two part residential (R) and small commercial (C) service rates to separately collect the fixed costs of the distribution system for both the R and C service schedules. By making the fix distribution charges, called the grid usage charge, transparent, the Company has in turn adjusted the energy rate to remove the recovery of fixed distribution costs. Solar*Rewards customers under the R and C rate schedules will still receive a net meter benefit of offsetting their energy charge on a kWh to kWh basis, however the net metering benefit will better reflect the actual energy offset provided by their rooftop solar while recognizing the fixed costs of the distribution system these systems depend on. This RE Plan adopts the proposed rate changes; however the approval for this methodology resides in Proceeding No. 16AL-0048E, and is beyond the scope of this RE Plan. The Company is also proposing an alternative rate design under Schedules R and C, whereby the Company will continue to offer the current Schedules R and C rate designs to customers who participate in the Company’s Solar*Rewards® program and are net metered as of December 31, 2016. The Company is proposing this alternative rate design to allow existing

\(^1\) Proceeding No. 16AL-0048E
Solar*Rewards customers who are net metered to realize bill savings more in line with their original estimates.

Customers on demand/energy rates (e.g., SG and PG customers) receive a lower net metering benefit because these customers still pay the majority of the fixed demand-related costs the Company incurs to serve them.

The cost of the production meter is determined by the Company, and is generally calculated as the meter component of the applicable Service and Facility charge currently in effect. The cost will be deducted from the REC payments the Company pays to the customer, based on the customer’s rate class. The Commission approved the production meter charge for systems installed after March 1, 2015 for all rooftop solar systems taking service under the optional NM Schedule. Authority for the production meter charge was provided by Decisions No. R14-0902, C14-1505 and C15-0142.

On February 25, 2015, the Company filed Advice Letter 1687 with revisions to the RESA Schedule to implement the RESA fair share charge for customers who install on-site solar generation after December 26, 2014, and who take service under the Company’s NM Service tariff in compliance with Decisions Nos. R14-0902, C14-1505 and C15-0142.

HB 10-1342 established a new community solar gardens program that initiated a Commission Rulemaking proceeding, 10R-674E, giving rise to Commission Rule 3665 which governs the solar garden program offered by Public Service. The Solar*Rewards Community program, described in Section 5, provides customers with an opportunity to take advantage of solar generation without putting solar on their roof or property. Instead the customer may purchase an interest or subscription in a larger solar PV system. The customer (subscriber) will be provided a bill credit on their electric bill commensurate with the solar generation production share of the solar garden to which they subscribe.
Section 10 – Interconnection Requirements

Public Service is not proposing any changes to the Commission’s interconnection rules or requirements at this time. Solar*Rewards contracts, customer forms and Interconnection Agreements are found in Attachment RLK-3 of this Plan.
Section 11 – Conclusion

Public Service has presented a comprehensive 2017-2019 Renewable Energy Plan for the Commission’s consideration. Public Service respectfully requests that the Commission approve this 2017 RE Plan as presented for the 2017-2019 Compliance Years, including specific approvals of the following:

- The Company’s proposed acquisition levels, incentives, and program changes for Solar*Rewards and Solar*Rewards Community pending the outcome of the Phase II Rate Design in Proceeding No. 16AL-0048E;
- The Company's proposed acquisition levels, incentives, Schedule RE tariff as well as associated tariff changes for Recycled Energy Service;
- The Company’s proposed changes to the pricing of the Windsource program and associated tariff changes; and
- The Company’s modeled incremental and avoided costs for resources not previously locked down and the resetting of the lock down for modeled incremental and avoided costs of resources previously locked down, for the term of this Plan.

We project we will not be advancing funds to the RESA during 2017 through 2019.