



2014 Renewable Energy Standard Compliance Report

Public Service Company of Colorado, June 2015

Docket No. 13A-0836E

2014 RENEWABLE ENERGY STANDARD

COMPLIANCE REPORT

I. Introduction

Pursuant to Colorado Public Utilities Commission (the “Commission”) Rule 3662, investor-owned Qualifying Retail Utilities (“QRUs”) like Public Service Company of Colorado (“Public Service” or the “Company”) are required to file an annual Renewable Energy Standard (“RES”) Compliance Report (“Report”) that contains the information set forth in Rule 3662. In general, the Report is designed to give the Commission a status on the QRU’s compliance with the renewable energy standard for the most recently completed compliance year.

Upon receipt of the annual compliance report, the Commission is to provide notice to interested persons who have 30 days within which to provide comment to the Commission on the content of the annual compliance report. The QRU shall then have the opportunity to reply to all comments on or before 45 days following the filing of the annual compliance report.

Within sixty days after the Report is filed, Staff is to make a recommendation as to whether:

- (1) no action should be taken because the QRU has met the standard and correctly calculated the on-going annual net incremental costs for new eligible energy resources;
- (2) changes are needed to the report; or,
- (3) a hearing is required.

Once Staff has made its recommendations, the Commission then enters an order stating whether:

- (1) The QRU complied with the renewable energy standard during the most recently completed compliance year;
- (2) The QRU satisfied the requirements for renewable distributed generation during the most recently completed compliance year;
- (3) The QRU has correctly calculated the on-going annual net incremental costs for new eligible energy resources; and,
- (4) A hearing is necessary.

Public Service is providing this Report in compliance with Rule 3662, and is pleased to report that we are in compliance with Colorado's 2014 Renewable Energy Standard, consistent with the Company's Commission-approved 2014 RES Compliance Plan as extended from 2013 and as modified by settlement in Proceeding No. 14A-0414E (Decision No. C14-01701). Due to Solar*Rewards program demand, program capacity limits were reached prior to the end of the year, resulting in a PUC-approved Amendment to the 2012-2013 RES Compliance Plan. The Amendment allowed the Company to acquire up to 33.6 MW of additional capacity in the Small Program until such time as the Company's 2014 RES Compliance Plan was approved. The 2014 RES Plan, Proceeding No. 13A-0836E, was approved in Decision Nos. R14-0902, C14-1505 and C15-0142. The 2014 RES Compliance Standard requires 12 percent of the QRU's retail sales be generated by renewable energy; of that 12 percent, 1.25 percent

must be from Distributed Generation, half of which must be Retail Distributed Generation.

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

In addition to meeting the Renewable Energy Standard requirements for 2014, Public Service remains well-positioned to meet the Colorado Renewable Energy Standard (RES) over the next several years. The RES requires the Company to generate 30 percent of electric retail sales from renewable resources by 2020, with 3 percent of that energy coming from renewable distributed generation. The Company's strategy reflects a desire to protect the environment, provide customers with renewable energy choices that they want and value, and follow through on our commitment to provide safe, reliable and increasingly clean energy at a competitive price. In this portion of the report, we briefly describe and summarize some of our efforts to meet these commitments.

A. Wind

Wind energy continues to play a significant role in Xcel Energy's renewable energy portfolio. Our early actions to add wind energy at competitive prices and proactively comply with state standards have benefitted customers and helped protect against rising fuel and environmental compliance costs.

For the 11th consecutive year, Xcel Energy has been named the country's top utility wind energy provider by the American Wind Energy Association, a national trade association. For more than a decade, Xcel Energy has led the nation in providing wind energy to its customers.

Last year wind energy made up nearly 19 percent of Public Service Company of Colorado's energy supply. At the end of 2014, Public Service had 2,364 megawatts of wind energy capacity on its system and Xcel Energy had nearly 5,735 megawatts of wind across its various utility operating companies. According to a new AWEA report, Xcel Energy is the first U.S. utility to exceed 5,000 megawatts of wind. Only nine countries in the world—in addition to the states of Texas, Iowa and California—have more than 5,000 megawatts of wind capacity.

Wind energy continues to be our most cost-effective renewable resource. It has grown to become an important component of our diverse energy portfolio. Public Service Company received approval in our 2011 Electric Resource Plan for two new wind projects in Colorado. These new additions are underway and expected to save Colorado customers \$231 million in fuel costs over 20 years, while adding approximately 450 megawatts to the system. This includes the 200-megawatt Limon III Wind Farm, which began operations in October 2014.

Our ongoing efforts to improve system operations through better forecasting and other measures have resulted in system records in terms of the amount of wind energy available to serve customers. In the early morning hours of Nov. 1, 2014, we set a new hourly system record with wind producing more than 61 percent of the electricity on our Colorado system.

Additionally, Xcel Energy completed its fifth year using WindWX – one of the most advanced wind-production forecasting systems in the world. We helped develop this highly detailed system through a multiyear research and development project with

Global Weather Corp (GWC), an affiliate company of the National Center for Atmospheric Research (NCAR).

Wind power production is difficult to forecast due to its variability. The WindWX system uses real-time, turbine-level data operating data and applies sophisticated algorithms to forecast the amount of wind power that will be produced. Through ongoing work with GWC, forecasts for a 168-hour period are provided every 15 minutes.

The forecasts—now available worldwide through GWC—are designed to help utilities make better commitment and dispatch decisions, including opportunities to power down less efficient power plants when sufficient winds are forecasted to help meet customer electric demands.

Thanks to this effort, we have more certainty around how much wind energy to expect each day and have reduced our wind forecasting error rate by more than 40 percent, while saving customers in Colorado approximately \$26 million in fuel costs.

CO-LABS, a nonprofit that works to inform the public about the breakthroughs from Colorado's 30 federally-funded labs and research facilities, recognized the WindWX wind forecasting system by presenting NCAR with its Annual 2014 Governor's Award for High-Impact Research.

The prices we pay for wind are generally less than the national average of \$49 per megawatt hour, according to the U.S. Department of Energy's Wind Technologies Market Report. In Colorado, the wind energy we added in 2014 averages about \$35 per megawatt hour over the 25-year contracts, and will provide cost-effective energy for years to come.

B. Solar

Xcel Energy is committed to developing solar resources at the best price, to benefit the greatest number of customers across the state. The Solar Electric Power Association once again ranked our company among the top 10 U.S. utilities for total solar capacity in 2014.

The Company purchases large-scale solar generation from sizable solar installations in the San Luis Valley in south-central Colorado. These installations include the SunEdison facility (6.95 megawatt_{AC}), the SunPower Greater Sandhill facility (19 megawatt_{AC}), the Iberdrola Renewables San Luis Valley Solar facility (30 megawatt_{AC}), the Solar Technology Acceleration Center (Solar TAC) (.92 megawatt_{AC}), and the Cogentrix Alamosa Solar Generating Project (30 megawatt_{AC}).

We also proposed and received approval in the 2011 Electric Resource Plan to enter into power purchase agreements for 170_{AC} megawatts of large-scale solar in Colorado. The largest project under this plan is the Comanche Solar Project. This 120-megawatt_{AC} project will be built adjacent to our Comanche generating plant in Pueblo, Colorado on approximately 900 acres of under-utilized grazing land surrounded by existing and future industrial land. Upon completion, the Comanche Solar Project would be the largest solar generating facility in the state, the largest east of the Rocky Mountains, and one of the largest in the nation. When it is placed in service, the project also has the potential to more than double Xcel Energy's current megawatt purchases from large central station solar plants. Over the course of the project's 25-year life, it will produce more than six billion kilowatt hours of clean solar energy and is expected to reduce CO₂ emissions by approximately 3.5 million tons.

As of year-end 2014, Xcel Energy had about 257_{AC} megawatts of solar energy on its Colorado system. Of that total, 87_{AC} megawatts came from large-scale solar on the system—enough solar energy to power more than 27,000 homes.

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

Additionally, more than 24,516 Xcel Energy customers in Colorado have on-site or rooftop solar through our Solar*Rewards® program. Through Solar*Rewards, customers interested in installing solar systems at their homes or businesses received incentives to participate in this program. At year end, the Company had more than 234_{DC} megawatts of on-site, rooftop solar on our Colorado system—enough solar energy to power more than 42,000 homes.

Solar*Rewards currently supports the installation of systems at several program levels—small systems up to 25 kilowatts and medium systems between 25.1 to 500 kilowatts. In the past, the program also has issued requests for proposals to support large systems over 500 kilowatts. The largest systems installed under Solar*Rewards are located at Denver International Airport, Colorado State University and Fort Carson Army Base.

In 2014, the Colorado Public Utilities Commission approved an agreement between Xcel Energy, the solar industry and others that allows Solar*Rewards to acquire up to 24 megawatts of solar energy from small installations and up to 12 megawatts from medium installations each year in 2015 and 2016.

Xcel Energy launched Solar*Rewards Community® in Colorado in 2012, after the state became one of the first to approve the solar garden concept in 2010. Community solar gardens offer a convenient option for customers to invest in solar energy, especially those who do not want to install solar panels on rooftops or on site. In Colorado, the Company offers Solar*Rewards Community for customers who want to participate in shared, centralized solar installations. Solar developers build community-based shared solar installations interconnected to our system and then offer subscriptions with various purchase arrangements to customers.

The Company to date has approved applications to install 25 solar gardens with a capacity of about 18_{DC} megawatts. In 2014, the Colorado Public Utilities Commission approved an agreement between Xcel Energy, the solar industry and others that allows Solar*Rewards Community to acquire up to 30 megawatts of new solar garden capacity each year in 2015 and 2016.

After celebrating its grand opening in 2011, the Solar Technology Acceleration Center (SolarTAC) in Aurora, Colorado continues to be a world-class facility for demonstrating and validating some of the most advanced solar technologies available. There are seven founding and sponsoring members that occupy 90 percent of the 74-acre site. In addition to our own testing projects, technologies improved at the site have directly benefitted customers. Two different solar companies testing technologies at SolarTAC have incorporated improvements gained at SolarTAC into several large solar installations that currently supply power to our system.

C. Windsource®

The Company's Windsource® program began in 1998 and continues to be one of the largest voluntary green-energy programs in the United States. The current structure of our Windsource® program originated in the terms of a settlement agreement the Commission-approved in Docket No. 08A-260E. Under the settlement agreement Windsource® customers receive renewable energy credits from the Company's entire eligible energy resource portfolio. Premiums from sales under the Windsource® program are credited back to the RESA. In 2014, 40,886 residential and commercial/industrial customers purchased 187,544 megawatt hours of Windsource and contributed \$4,033,579 to the RESA account.

Windsource® is certified through the Green-e Energy program. To be Green-e Energy certified, the corresponding RECs associated with the energy sold under Windsource® cannot be used to fulfill a state renewable energy goal, and cannot be "double-counted" towards that goal, with one exception. Pursuant to Green-e's National Standard Version 2.1: "If the product meets 100% of a customer's electricity use with eligible renewables, Green-e Energy allows a percentage of a product's content to be satisfied by renewable portfolio standard ("RPS") state-mandated renewables up to the percentage RPS requirement." Consequently, for Windsource® customers who purchased all of their electricity under the Windsource® program in 2014, twelve percent of the RECs associated with the energy they purchased were retired to meet the Renewable Energy Standard. The Commission approved this methodology as part of the Company's 2010 RES Compliance Plan in Decisions No. C10-1033 and R10-0586 in Docket No. 09A-772E. Information describing the method of retiring RECs for

100% Windsource® customer sales has been provided to our Windsource® customers and has been posted on the Windsource® pages on Xcel Energy's website, [http://www.xcelenergy.com/Company/Rates_&Regulations/Regulatory Filings/Colorado 2012 Renewable Energy Standard Compliance Plan](http://www.xcelenergy.com/Company/Rates_&Regulations/RegulatoryFilings/Colorado_2012_Renewable_Energy_Standard_Compliance_Plan).

The Company charges a Windsource® premium to those customers who subscribe to the program. The rate is calculated in accordance with Commission Decision Nos. R09-0117, C10-1033 and C10-1221 entered in Docket Nos. 08A-260E and 09A-772E.

In the Company's 2014 RES Compliance Plan, the Company proposed a market-based methodology for calculating the Windsource® premium. That proposal was denied by the Commission. The Company subsequently recalculated the premium as \$25.49 per MWh, which was approximately 18.1% more than the current premium of \$21.58 per MWh. Because the recalculated premium was within a previously approved 20 percent range for, the existing premium, the Company has not adjusted the Windsource® premium for the 2014 compliance year and has requested permission not to do so in Docket No. 15V-0305E.

III. Results of the 2014 Compliance Plan

Public Service filed our 2014 RES Compliance Plan ("Plan") on July 24, 2013. The Company filed our 2014 RES Plan to incorporate acquisitions for 2014. This plan was modified and approved by the Commission in Decisions No. R14-0902, C14-1505, and C15-0142 in Docket No. 13A-0836E. In the Plan the Company outlined our acquisition plans for non-solar, central solar and on-site solar eligible energy resources

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

A. Non Distributed Generation

As a result of prior Resource Plan filings, All-Source and targeted solicitations and other Company and Commission action, the Company currently has acquired 2,364 MW of wind generation capacity on our system at the end of 2014, of which 2,278 MW qualifies as non-Distributed Generation (“DG”) eligible energy resources. The Company acquires the full electrical output as well as all RECs produced from these wind resources for compliance with the Non-DG portion of the RES. All of the generation from these facilities is eligible for the 1.25 REC multiplier when used for compliance. The Company currently has 13 operational large wind resources that are considered non-DG for RES compliance:

As a result of the 2011 Electric Resource Plan and the subsequent 2013 All-Source Solicitation, the Company proposed, and was granted permission to acquire

approximately 450 MW of additional wind generation capacity as well as approximately 170 MW of additional photovoltaic solar generation capacity. These facilities are expected to come online beginning at the end 2014 through year end 2016, and expected to generate approximately 2,119,000 MWh annually once fully operational. Only 200 MW of the incremental wind generation is expected to be operational in time to qualify for the 1.25 REC multiplier. None of the incremental solar resources are expected to qualify for the 1.25 REC multiplier.

B. Wholesale DG

The Company currently has 241 MW of resources which qualify as wholesale DG resources for RES compliance. This includes various hydroelectric resources, landfill gas resources, photovoltaic solar resources, and wind resources. All of the generation from these facilities is eligible for the 1.25 REC multiplier when used for compliance with the Colorado RES. The following resources are currently operational and are considered as Wholesale DG for RES compliance:

- Cogentrix Solar
- Greater Sandhill Solar
- Iberdrola Solar
- SunE Alamosa Solar
- Northern Colorado II Wind
- NREL Siemens Wind
- Ponnequin Wind
- Ridgecrest Wind
- Waste Management Landfill Gas
- Additional owned and contracted hydroelectric resources

C. Retail Distributed Generation

On January 1, 2013, the Solar*Rewards® program opened for new applications per the Company's approved 2012-2013 RES Compliance Plan. There were two incentive level steps available for each of the Small and Medium programs, with a total

of 9.6 MW available under the Small Program and 16.4 MW available under the Medium program. Since the Company's 2014 RES Plan was not approved until late 2014/early 2015, the programs operated under a Settlement Agreement that was approved by Decision C14-0701 in Proceeding No. 14A-0414E. The Settlement Agreement provided for an acquisition of 4 MW per month (or a total of 20MW) in the Small Program and 7 MW in the Medium Program. The Settlement did not provide capacity for a large program RFP in 2014. This Settlement was subsequent to the Amendment to the 2013 Plan for the additional 33.6 MW discussed below.

From 2013 and into 2014 a notable change was the addition of the Interconnection processing fee, which is a non-refundable design review fee to offset engineering costs, that Xcel Energy began collecting on for all applications submitted on or after 1/1/2013 as authorized by Commission Rule 3667 (III). The fee for Solar*Rewards systems that are less than or equal to 10 kW is \$100; the fee for systems greater than 10 kW and up to 250 kW is \$1,000; the fee for systems great than 250 kW up to 2 MW is \$2,000. Also in 2013, a formal 60-day extension policy was developed to allow applications extra time for completion, as long as certain application milestones had been met.

Due to Solar*Rewards program demand, program capacity limits were reached prior to the end of the year, resulting in a PUC-approved Amendment to the 2012-2013 RES Compliance Plan. The Amendment allowed the Company to acquire up to 33.6 MW of additional capacity in the Small Program until such time as the Company's 2014 RES Compliance Plan was approved. Also, for any PV projects accepted into these new steps that are ultimately not installed, the capacity from those projects was restored to

the Small Program segment at the prevailing incentive at the time the capacity was restored. The Company tracked program participation and capacity limits daily, restored capacity levels monthly, and updated the Company's external website with this information.

The Company did not offer a large program RFP in 2013.

Also in 2013, the Company offered both a Standard Offer and RFP Solar*Rewards® Community program. Accepted projects are listed in detail in Attachment H. Based on a first come, first serve application process, the Company approved 9 community solar garden projects for a total of 4.5 MW in the standard offer program. Through the RFP program, the Company approved 3 additional projects for a total of 4.5 MW. Throughout the year, 7 of the approved 2012 and 2013 Solar*Rewards Community gardens were installed, for a total of 3.4 MW. Because the Company did not have authorization to acquire addition Solar*Rewards Community project in 2014, no addition RFPs were offered in 2014. However, of the Solar*Rewards Community capacity previously acquired, 6.2 MW became operational in 2014.

IV. Statement of RES Compliance

For 2014 the RES required that 12 percent of the Company's electric energy sales be served from renewable energy, with 1.25 percent from distributed generation. One-half of the distributed generation must be from Retail Distributed Generation. Public Service is pleased to report that the Company is in compliance with the Colorado 2014 RES standard. As a result of acquiring the generation described above, Public Service has sufficient RECs to meet its RES obligation for the 2014 Compliance Year. Public Service also projects that under the current RES standards it will have sufficient

1) Non DG RECs from existing Eligible Energy Resources for RES compliance beyond 2030; 2) Wholesale DG RECs from existing Eligible Energy Resources to comply with the RES beyond 2020; and 3) Retail DG RECs from existing customer sited solar resource as well as existing acquisition commitments under Solar*Rewards and Solar*Rewards Community to comply with the RES well beyond 2020.

A. REC Tracking

The Company tracks RECs through an internal REC tracking systems and the Western Renewable Energy Generation Information System ("WREGIS") system. Commission Rule 3659 (j) requires all renewable energy resources 1 MW and larger to be registered with WREGIS. WREGIS is a third-party REC tracking and verification system for the western states (including Colorado), developed through a collaborative effort between the Western Governors Association, the Western Regional Air Partnership, and the California Energy Commission. Public Service, through Xcel Energy Services Inc. ("XES"), the service company subsidiary of Xcel Energy Inc., participates in the Stakeholder Advisory, Policy and Change Control Committees of WREGIS. Public Service believes that WREGIS and other regional REC tracking and verification systems add significant credibility to, and aid in the development of, REC markets. Xcel Energy's registered generating facilities have been uploading data to WREGIS since the last quarter of 2008.

During the 2014 Compliance Year the Company used its internal REC tracking database to retire RECs from distributed generation solar facilities under 1 MW for 2014 RES compliance. Any WREGIS RECs that were used for 2014 compliance or

Windsources® were also retired in WREGIS. During the 2014 Compliance Year the Company maintained the internal REC tracking database and WREGIS in tandem.

B. Demonstration of Compliance

In order to demonstrate compliance with the Colorado 2014 RES we have included several attachments to this report providing the data identified in Rule 3662, which are set forth in Attachment A, Rule Requirements.

Attachment B shows the Company's 2014 actual energy sales and resulting Renewable Energy Standard compliance requirements.

Attachment C, Renewable Energy Credit Compliance Summary, is similar to Tables 4-2 and 4-3 as originally filed in our 2014 RES Compliance Plan, Volume 2. The numbers reflect actual RECs for 2014.

Attachment D compares the 2014 RESA forecasted expenditures and revenues to the actual expenditures and revenues. It also compares the 2014 forecasted RESA deferred account balance and the 2014 actual RESA deferred account balance. The Company designed this attachment so that it reflects the relevant information contained in Table 7-2 as filed in the Supplemental Direct Testimony of Samuel J. Hancock, Attachment SJH4, in the 2014 RES Compliance Plan. Although Attachment D reflects the actual totals by column, it also contains a breakdown of the actual costs by individual resource. This segregation of costs by resource permits one to easily assess the resources that contributed to the actual RESA costs for 2014.

Attachment E sets forth each individual resource that has costs that are allocated between the RESA and ECA. The Attachment provides the incremental costs for each resource expressed as \$/MWh as charged in 2014. Set forth at the bottom of the

attachment are the adjustments, if any, made to the \$/MWh figure. Second, this Attachment shows the recorded volumes for each resource. Third, Attachment E shows the Average Hourly Incremental Cost (“AHIC”) for 2014 and volumes of Solar*Rewards that elected to sell excess kWh credits to the Company per Rule 3664 (b). The AHIC is also used to compensate Solar*Rewards Community garden owners for unsubscribed energy required by Rule 3665 9 (c)(V). The 2014 Volumes of the unsubscribed energy are also shown in Attachment E.

As part of Commission Decision C11-1080 approving the Company’s 2010 RES Compliance Plan, the Commission directed the Company to provide comparisons between the modeled incremental costs and the actual incremental costs of eligible energy resources that are charged against the RESA account, and to provide an explanation of significant deviations. Attachment D provides the modeled costs as compared to actuals where Attachment F explains the differences between the modeled costs and the actual costs of eligible energy resources to the extent the variance is notable.

Attachment G provides the acquisitions under the 2014 Solar*Rewards Community program.

Attachment H provides a copy of all Solar*Rewards Community contracts signed as of the date of this filing.

Finally, included in Attachment I are the Solar*Rewards Community volumes and corresponding billing credits per rate class, the average hourly incremental cost and the total number of unsubscribed kWhs as required by Rule 3662 (a)(XVIII).

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

In compliance with Rule 3662 (XV), the Commission has approved the Company's methodology for calculating the retail rate impact for the 2014 RES Compliance year. Because the Company is not claiming that the retail rate impact cap limited its ability to comply with the 2014 RES, no modifications pertaining to the calculation of the retail rate impact for 2014 were necessary.

The Company is providing the Commission with an electronic copy of this filing, as well as posting it on the Company's website at www.xcelenergy.com under "Renewable Energy Solutions" in the Renewable Energy Programs directory.