



2013 Renewable Energy Standard Compliance Report

Public Service Company of Colorado June 2014

Docket No. 11A-418E

2013 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. Interested persons then 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 2013 Renewable Energy Standard, consistent with the Company's Commission-approved 2013 RES Compliance Plan. The 2013 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 2013, Public Service remains well-positioned to meet the Colorado Renewable Energy Standard (RES) over the next few 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 the Company's renewable energy portfolio. For the 10th consecutive year, Xcel Energy has been named the country's top wind energy provider, according to the American Wind Energy Association, the national trade association for wind energy. For a decade, Xcel Energy has led the nation in providing wind energy to its customers.

At the end of 2013, Public Service had 2,166 megawatts of wind energy capacity on its system and Xcel Energy had nearly 5,080 megawatts of wind across its various utility operating companies.

We have found wind energy to be our most cost-effective renewable resource. While it has grown to become an important component of our diverse energy portfolio, we remain committed to adding more. Public Service Company received approval in our 2011 Electric Resource Plan for two new wind projects in Colorado, totaling approximately 450 megawatts; once constructed, the Public Service system will have a total of about 2,600 megawatts of wind. The two new wind additions are expected to save Colorado customers \$231 million in fuel costs over 20 years.

Our pursuit of new wind power capacity was made possible by extremely competitive prices and the extended federal Production Tax Credit (PTC) for projects that began significant construction activities by the end of 2013.

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 May 24, 2013, we set a new national record with more than 60 percent of the electricity on our Colorado system coming from wind energy.

Additionally, Xcel Energy completed its fourth year of operational deployment of WindWX – one of the most advanced wind-production forecasting systems in the world. We have worked on a multiyear research and development project with Global Weather Corp (GWC), an affiliate company of the National Center for Atmospheric Research (NCAR), to develop this highly detailed wind-forecasting system. We have reduced our forecasting error rate by almost 37 percent since 2009, and we estimate that this has saved our customers a total of \$37.5 million through year-end 2013.

These forecasts are now available worldwide through GWC, and are helping utilities make better dispatch decisions and uncover opportunities to power down less efficient power plants when sufficient winds are forecasted to help meet customer electric demands.

Also in 2013, the American Wind Energy Association recognized Xcel Energy as the *Utility of the Year* for the Company's commitment to new wind energy acquisitions and progressive wind integration efforts. This is the second time in the past five years that the Company has received this honor.

Our continued efforts to add wind energy at competitive prices and proactively comply with state renewable energy standards have benefitted customers and helped

protect them against rising fuel and environmental compliance costs, all while reducing environmental impacts.

B. Solar

Xcel Energy is committed to developing solar resources at the best price, to benefit the greatest number of customers and the state of Colorado. The Solar Electric Power Association ranks our Company among the top 10 U.S. utilities for total solar electric capacity.

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 have 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, Colo. It is projected to generate enough power for 31,000 homes during its first year of operation and produce over six billion kilowatt-hours of clean energy over the life of the project.

As of year-end 2013, Xcel Energy had about 240_{AC} megawatts of solar energy on its Colorado system—enough solar energy to power about 50,000 homes. Of that

total, 87 megawatts came from large-scale solar on the system—enough solar energy to power more than 23,000 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 the economies of scale.

Additionally, more than 18,000 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 185_{DC} megawatts of on-site, rooftop solar on our Colorado system, enough solar energy to power more than 27,000 homes.

By spring 2013, our Colorado Solar*Rewards program had reached our annual program goal of 9.6 megawatts for small systems up to 10 kilowatts each. With Solar*Rewards fully subscribed so early in the year, Xcel Energy reached an agreement with the Solar Energy Industries Association (SEIA) and the Colorado Solar Energy Industries Association (COSEIA), and approved by the Commission, to continue offering the program by advancing available capacity planned for 2014 and by continuing to offer incentives at a declining rate previously approved by the Commission.

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, Public Service 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. As of May 2014, about 300 customers are signed up to participate in 25 solar garden projects in Colorado. At the end of 2013, seven of the projects with a combined capacity of 3.4 megawatts were operating and ten more are expected to be completed in 2014.

After celebrating its grand opening in 2011, the Solar Technology Acceleration Center (SolarTAC) in Aurora, Colo. is now 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 and have invested about \$30 million in the SolarTAC.

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 2013, 36,670 residential and

commercial/industrial customers purchased 196,992 megawatt hours of renewable energy credits and contributed \$4,252,667 to the RESA account.

WindsorSource® is certified through the Green-e Energy program. To be Green-e Energy certified, the corresponding RECs associated with the energy sold under WindsorSource® 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 WindsorSource® customers who purchased all of their electricity under the WindsorSource® program in 2013, 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% WindsorSource® customer sales has been provided to our WindsorSource® customers and has been posted on the WindsorSource® pages on Xcel Energy’s website, [http://www.xcelenergy.com/Save Money & Energy/Residential/Renewable Energy Programs/WindsorSource for Residences - CO](http://www.xcelenergy.com/Save_Money_&_Energy/Residential/Renewable_Energy_Programs/WindsorSource_for_Residences_CO).

The Company charges a WindsorSource® 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 Decision No. C10-1221, Docket No. 09A-772E, the Commission

also directed that the Windsource® premium be recalculated annually, and that the premium need not be changed unless the recalculated premium was 20 percent more or less than the then current rate.

In the Company's 2012 RES Compliance Plan, the Company used the approved methodology for calculating the Windsource® premium. The recalculated premium was \$19.64 per MWh, which was approximately 9% less than the current premium of \$21.58 per MWh. Because the recalculated premium was within the 20 percent collar, the Company did not adjust the Windsource® premium for 2012 or for the 2013 compliance years. The Commission approved the Windsource® rate for these compliance years.

III. Results of the 2013 Compliance Plan

Public Service filed our 2012 RES Compliance Plan ("Plan") on May 13, 2011. The Company filed our 2012 RES Plan to incorporate acquisitions for both 2012 and 2013. This plan was modified and approved by the Commission in Decisions No. C12-0606 and C12-0856 in Docket No. 11A-418E. In the Plan the Company outlined our acquisition plans for non-solar, central solar, and on-site solar eligible energy resources. Under the Commission's RES rules in effect during 2013, the Company was obligated to generate or cause to be generated certain amounts of energy from solar and non-solar resources as a percentage of our retail electric sales. For 2013, the compliance requirement was that 12 percent of electric retail 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.

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.

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 2,077 MW of wind generation capacity on our system, all of which qualifies as non-Distributed Generation (“DG”) eligible energy resources. For 2013 the biggest new acquisition of wind energy was the first full year of production from the Limon I and II facilities. 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 12 large wind resources currently operational and 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, in Decision No. C13-1566 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 236 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.

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 for all applications submitted on or after 1/1/2013 as authorized by Commission Rule 3667 (III). The fee for Solar*Rewards and 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 demand, 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. Seven capacity steps of 4.8 MW each were added to the program. 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 Pprogram segment at the incentive that was offered 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.

IV. Statement of RES Compliance

For 2013 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 2013 RES standard. As a result of acquiring the generation described above, Public Service has sufficient RECs to meet its RES obligation for the 2013 Compliance Year. Public Service also projects that under the current RES standards it will have sufficient Non DG RECs from existing Eligible Energy Resources for RES compliance beyond 2030.

As a result of: 1) entering into agreements to acquire the output from the Greater Sandhill, San Luis Solar and Cogentrix projects; 2) entering into agreements to acquire the output from Limon I and II; 3) the acquisition of output from certain hydro and biomass projects approved in previous RFPs; and, 4) other generation owned or contractually acquired by the Company in prior periods, Public Service has sufficient Wholesale DG RECs to meet its RES obligation for the 2013 Compliance Year. In addition, Public Service projects that under the current RES it will have sufficient Wholesale DG RECs from existing Eligible Energy Resources to comply with the RES beyond 2020.

As a result of the Company's Solar*Rewards® program and now Solar*Rewards® Community program, the Company also has sufficient Retail DG RECs to meet its RES Obligation for 2013 Compliance Year. In addition, because of Public Service's early Solar*Rewards® program acquisitions, the Company projects that under the current RES it will have sufficient Retail DG RECs from existing customer sited solar resource to comply with the RES beyond 2020.

A. REC Tracking

The Company tracks RECs through an internal REC tracking system 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 2013 Compliance Year the Company used its internal REC tracking database to retire all RECs for 2013 RES compliance. Any WREGIS RECs that were used for 2013 compliance or Windsource® were also be retired in WREGIS. During the

2013 Compliance Year the Company maintained the internal REC tracking database and WREGIS in tandem, to ensure synchronization between the two systems.

B. Demonstration of Compliance

In order to demonstrate compliance with the Colorado 2013 RES we have included several attachments to this report providing the data identified in Rule 3662, the text of which is set forth in Attachment A, Rule Requirements.

Attachment B shows the Company's 2013 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 2012-2013 RES Compliance Plan, Volume 2. The numbers reflect actual RECs for 2013.

Attachment D compares the 2013 RESA forecasted expenditures and revenues to the actual expenditures and revenues. It also compares the 2013 forecasted RESA deferred account balance and the 2013 actual RESA deferred account balance. The Company designed this attachment so that it reflects the relevant information contained in Table 7-3 as originally filed in our 2012 RES Compliance Plan, Volume 2. 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 of assess the resources that contributed to the actual RESA totals for 2013.

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 2013. 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. Below that are reflected adjustments, if any, to the volumes. Third, Attachment E shows the Average Hourly Incremental Cost (“AHIC”) for 2013 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 2013 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 F explains the differences between the modeled costs and the actual costs of eligible energy resources as reflected in Attachment D.

Attachment G provides the acquisitions under the 2013 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 2013 RES Compliance year.¹ Because the Company is not claiming that the retail rate impact cap limited its ability to comply with the 2013 RES, no modifications pertaining to the calculation of the retail rate impact for 2013 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.

¹ Volume 1, Section 7 of the Company's 2012-2013 RES Compliance Plan filed in Docket No. 11A-418E provides a detailed description of the Company's retail rate impact calculation methodology.