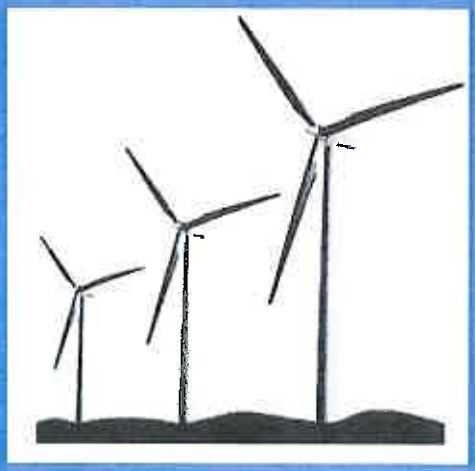
2016 RENEWABLE ENERGY TARGETS PROGRESS REPORT FOR ELECTRICAL CORPORATIONS



Utah Division of Public Utilities

December 30, 2015

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PREPARED BY

THE DIVISION OF PUBLIC UTILITIES

EXECUTIVE SUMMARY

Utah Code Ann. Title 54, Chapter 17, Part 6, covering privately owned electric utilities and cooperative associations, established a target of 20 percent renewable energy generation by the year 2025 for electrical corporations. In pursuit of this target, Utah electrical corporations are required to submit renewable energy progress reports every few years until 2025. The electric companies are to report actual and projected renewable energy, qualifying energy, cost or cost-effectiveness information, as well as describe issues and conditions, and make recommendations. These reports are submitted to the governing bodies of the various corporations. The statute also requires the Division of Public Utilities (Division) to provide the Legislature with a summary report on the progress made by these electrical corporations. The Division submits this report in response to that requirement.

Rocky Mountain Power, a subsidiary of PacifiCorp, filed its Utah Carbon Reduction Progress Report with the Utah Public Service Commission (Commission) on December 31, 2014. Its progress report is included here as Appendix A. To develop the Utah Carbon Reduction Progress Report for cooperative associations, the Division worked with the Utah Rural Electric Association (UREA). UREA consulted with its members to develop its progress report, which is included here as Appendix B. From Rocky Mountain Power's progress report, it appears well positioned to meet or exceed the 20 percent target by the year 2025. UREA suggests that the transition to renewable energy will be long with many challenges. UREA identified issues affecting its progress in meeting the 20 percent target, including cost, technology, and transmission. UREA made a number of recommendations to address the issues it faces including, ensuring that policy makers continue to consider the cost-effectiveness of meeting future renewable energy targets. Raft River Rural Electric Cooperative located outside of the state of Utah but serving a small number of Utah residents, provided to the Division its Integrated

Resource and Energy Efficiency Plan (Plan) that was presented to its Board of Directors on February 6, 2013. The Plan is included here as Appendix C.

INTRODUCTION

Utah Code Ann. § 54-17-602 specifies a target amount of renewable energy beginning in the year 2025. To the extent that it is cost effective to do so, annual retail electric sales of each electrical corporation shall consist of qualifying electricity or renewable energy certificates to at least 20 percent of adjusted retail sales for 2022. This section of the Code also addresses how the amount is calculated and the cost-effectiveness basis for this amount. Utah Code Ann. § 54-17-604 "Plans and reports," directs electrical corporations to: "develop and maintain a plan for implementing Subsection 54-17-602(1), consistent with the cost-effectiveness criteria." These plans or progress reports are to be filed by January 1 of each of the years 2010, 2015, 2020, and 2024 either with the electrical cooperative association's board of directors or with the Utah Public Service Commission, if the electrical corporation is other than an electrical Cooperative association. Subsection 54-17-604(6) then directs "By January 1 of each of the years 2011, 2016, 2021, and 2025, the Division of Public Utilities shall submit to the Legislature a report containing a summary of any progress report filed under Subsections (2) through (5)." The Division's Summary Report is the summary of the progress reports from Rocky Mountain Power and from the Utah Rural Electric Association.

BACKGROUND

Utah Code Ann. § 54-17-604 requires electrical corporations to develop and maintain a plan for implementing a 20 percent renewable energy target that is consistent with the cost-effectiveness criteria of Subsection 54-17-201(2)(c)(ii). Section 602 requires, beginning in 2025, that each electrical corporation in Utah shall have at least 20 percent of its annual retail electric sales consist of qualifying electricity or renewable energy certificates. (See subsection 54-17-602(1)(a).) These retail electric sales are calculated based upon adjusted sales 36 months before the year 2025 target is calculated. (See subsection 54-17-602(1)(b).) Notwithstanding the 2025 targets, the annual target from one year to the next may not exceed the greater of 17,500 megawatt hours or 20 percent of the prior year's amount. (See subsection 54-17-602(1)(c).)

The plans or progress reports are to be filed either with the electrical cooperative association's board of directors or with the Utah Public Service Commission, if the electrical corporation is other than an electrical cooperative association. The plans or progress reports are to be filed by January 1 of each of the years 2010, 2015, 2020, and 2024.

Rocky Mountain Power filed its Utah Carbon Reduction Progress Report on December 31, 2014, with the Commission. Rocky Mountain Power's Utah Carbon Reduction Progress Report is included here as Appendix A and is available on the Commission's website as part of Docket No. 14-035-151 http://www.psc.utah.gov/utilities/electric/elecindx/2014/14035151indx.html.

To develop the Utah Carbon Reduction Progress Report for cooperative associations, the Division worked with the UREA. Letters were sent to each UREA member, and the Division consulted with Mr. Mike Petersen, Executive Director of UREA. Mr. Peterson offered to develop the cooperative association progress report for the UREA members and to incorporate their responses into one document, which is included here as Appendix B.

Three Rural Electric Cooperative Associations headquartered outside the state of Utah, not members of Deseret Power Electric Cooperative (Deseret), serve customers located in Utah:

- Empire Electric Association, Cortez, Colorado
- Raft River Electric Cooperative, Malta, Idaho
- Wells Rural Electric Company, Wells, Nevada

These organizations serve a small number of customers in Utah and have contracts for purchased power with organizations not located in Utah. UREA provided a brief description of Empire Electric Association and Wells Rural Electric Company included in its report as Part 2. The Division received separately the Integrated Resource and Energy Efficiency Plan for Raft River Rural Electric Cooperative, which is included as Appendix C.

While both Rocky Mountain Power and the cooperative associations are directed by legislation to submit progress reports, they represent different parts of the electric industry. Rocky Mountain Power, with approximately 835,000 customers in Utah, also serves portions of the state of California, Idaho, Oregon, Washington, and Wyoming.

Deseret was formed in 1978 and consists of six rural electric cooperatives. They are:

- Bridger Valley Electric Association, Mountain View, Wyoming
- Dixie Escalante Rural Electric Association, Beryl, Utah
- Flowell Electric Association, Flowell, Utah
- Garkane Energy, Loa, Utah
- Moon Lake Electric Association, Roosevelt, Utah
- Mt. Wheeler Power, Ely, Nevada

Each member obtains all of its power from Deseret. In a project to provide electric power for the Cooperatives, the Bonanza Power Plant was completed in 1985. Growing electric power requirements, however, have dampened and in a span of two years Deseret went from needing substantially more power to having surplus power.

SUMMARY OF PROGRESS REPORTS

Both the Rocky Mountain Power and UREA reports cover specific sections of 54-17-604. The specific sections of 54-17-604 covered in the progress reports and presented in the Division's Summary Report are:

- Actual and projected amount of qualifying electricity through 2025 (54-17-604(3)(a)).
- Source of qualifying electricity (54-17-604(3)(b)).
- Analysis of cost-effectiveness (54-17-604(3)(c)(ii)) or estimated cost of achieving the target (54-17-604(3)(2)(ii)).
- Conditions impacting the renewable energy source and qualifying electricity markets (54-17-604(3)(d)).
- Recommendations (54-17-604(3)(e)).
- Other information (54-17-604(3)(f)).

For each of the Section 54-17-604 items, this Summary Report first provides a brief overview of the issue, and identifies how the individual progress reports responded to the specific item. Rocky Mountain Power's approach to the issue is then summarized first, followed by the Utah Rural Electric Association's approach to the issue. The primary focus of the 2016 Progress Report will be on the reports provided by Rocky Mountain Power and Deseret.

Actual and Projected amount of qualifying electricity through 2025: § 54-17-604(3)(a).

Utah Code Subsection 54-17-604(3) specifies the contents of the progress reports to the Utah Legislature. Subsection 54-17-604(3)(a) specifies that the progress reports shall report actual and projected amounts of qualifying electricity through 2025. Qualifying electricity is defined in subsection 54-17-601(7) as electricity generated from a renewable energy resource

after January 1, 1995. Additionally, the renewable energy source must be located in the Western Electricity Coordinating Council (WECC), or must be deliverable to the electric utility with its renewable energy attributes available for application to the Utah targets.

Rocky Mountain Power addressed its actual and projected renewable resources in Exhibit A of its Utah Carbon Reduction Progress Report, which is included here as Exhibit A of Appendix A. Rocky Mountain Power forecasts retail sales of approximately 27,076,817 megawatt hours (MWh) inclusive of reductions attributed to demand side management and line losses for the year 2022. This forecast is consistent with the load forecast used in the 2013 Integrated Resource Plan (IPR) Update, filed with the Commission on March 31, 2014.[1] The adjusted retail sales forecast is based on the retail sales, reduced by the kilowatt-hours attributable to electricity generated or purchased from qualifying zero emission generation as well as estimated kilowatt hours from electricity generated or purchased from generation located within the geographic boundary of the WECC that does not satisfy the definition of a renewable energy source. This results in adjusted retail sales of 25,750,838 MWh. Calculating the requirement for twenty percent renewable energy results in an estimated amount of 5,150,168 MWh. In comparison to this amount, Rocky Mountain Power reports estimated eligible qualifying electricity in 2025 of approximately 36,375,550 MWh, which includes both estimated generation and banked renewable electricity from qualifying renewable energy resources. Based on these representations, it appears that Rocky Mountain Power is well positioned to meet or exceed the 20 percent target by 2025.

Deseret's load forecast uses specific Member customer load, econometric regression analysis, trending analysis and assumptions resulting from and understanding of local economics and demographics specific to each individual cooperative. The load forecasts for each Member Cooperative are then aggregated into a combined Deseret Member load forecast. Deseret forecasts excess energy and capacity through the year 2025 and also expects to have adequate resources to satisfy Member future load growth. Deseret and its Members do not foresee the need for new or additional capacity over the IRP planning horizon.

[1] Rocky Mountain Power filed its Utah Carbon Reduction Progress Report prior to the finalization of its 2015 IRP. The 2015 IRP was filed on March 31, 2015.

Deseret Members are in a unique situation, with surplus energy and adequate resources to meet foreseeable future demand. Therefore, consistent with § 54-17-602 (3)(a)(b)(c), Deseret Members would not be required to substitute qualifying electricity for existing resources owned or contractually committed.

Source of qualifying electricity: § 54-17-604(3)(b).

Rocky Mountain Power addresses its actual and projected renewable resources in Exhibit A of its Utah Carbon Reduction Progress Report, which is included here in Appendix A. Exhibit A lists the sources of generation by resource used for the adjustment to the retail sales for the target year.

Deseret and its Members have surplus energy resources and are therefore not required to purchase additional qualifying electricity. Nevertheless, Deseret and its Members continue to investigate different renewable energy options. Deseret and its Members have identified customer interest in renewable energy. As an example, the Deseret Member, Dixie Power worked with the City of St. George to build a 100 kW solar facility, the SunSmart project, with the output sold to customers in lieu of individual roof top solar panels. With the help of federal stimulus finding, an additional 150 kW have now been installed at the SunSmart project. The project currently has 217 kW of unsubscribed capacity. In addition, Subsection 54-17-602(6)(b) allows cooperative associations to count against the target either qualifying electricity (generated or acquired) or credits for a program for retail customers to voluntarily contribute to a renewable energy source. Deseret Members have the option to promote the "Green Way" program. The Green Way program promotes renewable energy production in the Western United States by encouraging customers to pay a renewable energy premium on their utility bill.

Analysis of cost-effectiveness of achieving the target: § 54-17-604(3)(c)(i) or estimated cost of achieving the target: § 54-17-604(3)(c)(ii).

Rocky Mountain Power and the UREA addressed this Subsection in different ways. Rocky Mountain Power is governed by Section 604(3)(c)(i), which requires "an analysis of the cost-effectiveness of renewable energy sources for other than a cooperative association." The UREA provided "an estimate of the cost of achieving the target for an electrical corporation that is a cooperative association" as identified by Section 604(3)(c)(ii). Subsection 54-17-602(2) specifies cost-effectiveness and how it is determined: for Subsection (2)(a), cost-effectiveness

"for other than a cooperative association is determined in comparison to other viable resource options using the criteria provided by Subsection 54-17-201(2)(c)(ii), and in Subsection (2)(b) cost-effectiveness for a cooperative association "is determined using criteria applicable to the cooperative association's acquisition of a significant energy resource established by the cooperative association's board of directors."

Rocky Mountain Power uses an integrated resource planning process filed every other year as a resource acquisition framework. The PacifiCorp IRP is a strategic roadmap that results in a preferred portfolio that is intended to provide reliable, reasonable-cost of service with manageable risks to the Company's customers. PacifiCorp's 2013 IRP update is available at http://www.pacificorp.com/es/irp.html.

In its 2013 IRP, filed with the Commission in April 2013, PacifiCorp reported that policy and market developments have contributed to higher renewable resource costs and reduced benefits. The uncertainty of federal tax incentives, continued decline in forward natural gas prices, and reduced load forecasts have depressed forward wholesale electricity prices. PacifiCorp reported in its 2013 IRP that the need for renewable energy sources will be driven by state-specific renewable portfolio standard (RPS) regulations. The 2013 IRP resource portfolio modeling conducted both with and without assumed state RPS requirements reported that new wind resource capacity needed to meet state RPS targets increase levelized resource portfolio costs by between $30 and $60 per megawatt hour of expected energy generation from these resources, depending upon future carbon dioxide policy assumptions. Consequently, wind resource capacity was excluded from the 2013 IRP preferred portfolio. PacifiCorp's plan to seek lower-cost RPS compliance includes acquiring renewable energy credits. PacifiCorp will continue to assess the cost-effectiveness of renewable energy sources in its IRP process to ensure its long term planning efforts are aligned with the most current market and policy developments.

Deseret and its Member system boards of directors, meet on a regular basis and review purchased power and renewable proposals primarily from developers of wind and solar. Dixie Power, in particular, regularly communicates the findings of its Sun Smart solar project to other Deseret Members. Dixie Power provided two tables showing their estimated costs to achieve the

20 percent target by 2025.[2] Because the all-requirements contract and rate structure through Deseret is applicable to all Deseret Members, the Dixie Power estimate is a good representation of the cost premium for achieving the target for all Deseret Members. Dixie's analysis indicates prices for renewable energy has a significant percentage increase over existing resources. The cost premium, coupled with an existing surplus of resources, currently makes it less than prudent for the Deseret Member system boards of directors to seriously consider renewable options for their member/owners.

Conditions impacting the renewable energy source and qualifying electricity markets: § 54-17-604(3)(d).

Both PacifiCorp and the UREA identified several conditions that affect renewable energy sources. These conditions cover cost, policy, and technology issues.

Rocky Mountain Power identified federal tax credits, wildlife habitat impacts, carbon regulations, and other environmental regulations, Energy Imbalance Market (EIM), cost and performance implications, transmission, and other state and local polices as critical issues affecting renewable energy resources and qualifying electricity markets.

Federal tax credits include the production tax credit (PTC) and the investment tax credit (ITC). The availability of federal tax credits will impact the deployment of new renewable resources. The PTC provides a maximum 2.3 cent per kilowatt hour credit. This credit expired at the end of 2013 but was extended through 2014. To receive the credit, the project must have commenced construction by January 1, 2015. The ITC provides a credit equivalent to 30 percent of project expenditures with no maximum. All eligible systems must be in service on or before December 31, 2016.

Regarding wildlife habitat impacts, federal and state management and regulation of wildlife and natural habitats can impact renewable resources.

At the time of Rocky Mountain Power's filing of the Utah Carbon Reduction Progress Report, the EPA had not finalized its performance standards for carbon dioxide emissions under the Clean Air Act. Rocky Mountain Power anticipated that renewable energy development

[2] Appendix B - Utah Rural Electric Association – Cooperative Association Progress Reports – Qualifying Electricity, pages 5 and 6.

would be incented either as a direct compliance mechanism or as an indirect beneficiary of increased regulatory and economic pressures applied to fossil fuel-fired electric generating units. On August 3, 2015, the EPA announced the finalized Clean Power Plan. The Division anticipates the inclusion of the EPA standards found in the Clean Power Plan in future Rocky Mountain Power Carbon Reduction Progress Reports.

The EIM is an automated system which efficiently dispatches resources across multiple balancing authorities in real time to serve electricity demand with least-cost resources. In other words, it allows neighboring systems to purchase one another's over- or under-generation so both systems balance in the most economically efficient way. The EIM was launched on November 1, 2014.

Regarding transmission, the construction of new infrastructure to connect remote renewable resources will be necessary to satisfy new mandates. This generation may have a delivery premium as well as an additional system integration cost for the intermittency of renewable energy.

As an intermittent and sometimes highly variable resource, renewable energy may require additional costs for dispatching and integrating. On the flip side, improved operating performance characteristics, such as new designs intended to increase energy production capability for some wind plant locations or reduced degradation from solar panels, could improve the cost-effectiveness of renewable resources relative to the wholesale electricity market.

Finally, Rocky Mountain Power notes that it operates in six states, four of which have differing provisions concerning renewable resources, and that the Company faces the challenge of differing state energy policy directives.

The UREA identified three primary conditions that affect renewable development: renewable energy's cost, its intermittent nature, and the required transmission necessary to deliver it. UREA notes that costs for renewable energy components have declined. Lower costs combined with federal subsidies have helped renewable energy growth across the country. Unfortunately, rural electric cooperatives, because of their non-profit status, are not eligible for tax credits. Therefore, most federal subsidies are not available to UREA. UREA maintains that

the costs of existing generation resources at Deseret remain below the cost of renewables, especially given the intermittent nature of wind and solar.

As another important condition, transmission is also identified as a key piece of the renewable energy puzzle. Transmission expansion necessary to support 20 percent of the nation's energy from wind, may require 15,000 miles of new high-voltage transmission lines, involving 30 states in the Eastern Interconnection alone, and the coordination of eight transmission planning authorities for the multi-state transmission line. In addition, transmission siting varies from state to state, even recognizing the federal backstop authority, and is complicated by land ownership and environmental issues. Even solving the many transmission siting issues, leads UREA to ask who will pay the billions of dollars for new transmission lines: the states with wind resources or customers in states purchasing renewable energy. New transmission lines over 15,000 miles and up to $5 million per mile, and traversing multiple jurisdictions, pose difficult cost allocation questions. An additional complication for transmission planning will be the intermittent nature of renewable energy sources.

Recommendations for suggested legislative or program change: § 54-17-604(3)(e).

The Utah Carbon Reduction Progress Reports were current as of December 31, 2014, and it must be noted that these recommendations were made as of that time. The Division anticipates that additional recommendations will be made in future progress reports based on the August 4, 2015, finalized EPA Clean Air Act requirements.

Rocky Mountain Power noted the EPA proposed rule to regulate carbon emissions from existing electric generating units, if implemented, would require Utah to submit an implementation plan on how the state will comply with the rule. Rocky Mountain Power recommends that the state review and consider legislative or program changes to existing statutes (particularly Title 54, Chapters 12 & 17) that may serve to assist the state in the development of its compliance plan in light of potential EPA requirements.

UREA stressed in its recommendations that policy makers should place a priority on renewable resource cost-effectiveness. UREA noted that while renewable energy continues to be a politically correct buzz word in today's vernacular, the transformation from traditional sources of electricity to renewables is difficult and seldom understood. Studies and representations

typically do not have the credibility of data taken from actual projects developed or being developed with real money at risk. UREA's emphasis is that renewable energy integration be based on sound economics and feasible engineering solutions, not government mandates.

In addition, UREA provided a brief narrative in Part 2 of its report addressing the three rural electric cooperative associations that are headquartered outside the state of Utah and are not members of Deseret, but serve customers in Utah. UREA identified the three Electric Cooperative Associations as: 1) Empire Electric Association, Cortez Colorado; 2) Raft River Electric Cooperative, Malta, Idaho; and 3) Wells Rural Electric Company, Wells, Nevada. All three have contracts to purchase power outside Utah but combined have less than 3,000 Utah customers. UREA recommended, under § 54-17-604(3)(e), a new provision of section 54-17-604 be enacted similar to the net metering language of section 54-17-107. UREA suggested the following language for this provision:

> "An electrical corporation with fewer than 5,000 customers in this state that is headquartered in another state is in compliance with this chapter if the electrical corporation conforms to any applicable cost-effective renewable energy provisions/goals of the appropriate authority in the state which the electrical corporation's headquarters are located."

Other information: § 54-17-604(3)(f).

By referring only to electrical corporations other than cooperative associations, this Subsection concerned Rocky Mountain Power and not the cooperative associations.

Rocky Mountain Power stated in its Utah Carbon Reduction Progress Report that it's 2013 IRP and 2013 IRP Update is the source of relevant information for its Utah Carbon Reduction Progress Report. PacifiCorp's 2013 IRP and 2013 IRP Update included several renewable resource scenarios in an effort to assess compliance with different state renewable mandates. Since PacifiCorp operates in six states, it must often balance load and regulation across all six jurisdictions. PacifiCorp's 2013 IRP and 2013 IPR update can be found at http://www.pacificorp.com/es/irp.html.

CONCLUSION

Given Rocky Mountain Power's projections of its loads and qualifying electricity for 2025, Rocky Mountain Power is positioned to meet or exceed a target of 20 percent renewable

energy by 2025. The electric corporations under UREA expect to have surplus energy and capacity for the foreseeable future and, therefore, do not believe that it would be cost effective to pursue additional resources at this time. However, the UREA and its Members are not opposed to renewable energy and will continue to evaluate its cost effectiveness through its governing boards.

Questions concerning this report can be directed to the Division of Public Utilities:

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