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May 4, 2010

TO: Utah Public Service Commission

FROM: Utah State Energy Program, Utah Geological Survey

RE: DOCKET NO. 07-035-T14 REQUEST FOR COMMENTS, Rocky Mountain Power's Tariff P.S.C.U. No. 47, Re: Schedule 107 – Solar Incentive Program

The Utah State Energy Program (USEP) is submitting comments in reference to the recently released Rocky Mountain Power (“the Company”), Utah Solar Incentive Program, 2009 Annual Report for the Commission’s consideration. The USEP has extensive experience in administering programs that encourage the acceleration of the adoption of energy efficiency and renewable energy technologies through programs such as loan, grant, and rebate programs, as well as administering Utah’s renewable energy tax credit program. The USEP has been following and participating in the implementation and evaluation of the Company’s Solar Incentive Program. The USEP would like to take this opportunity to make comments and suggestions in regards to the 2009 report and the Program overall.

1. PROGRAM DESIGN and COSTS

After reviewing the annual solar rebate program reports (for 2007, 2008 and 2009), the USEP concludes that evaluating the success of the program on a cost/benefit level will be susceptible to an inaccurate economic analysis due to the small scale of the program. The program suffers from lack of economies of scale as the program budget and design are too small to encourage adequate penetration of solar photovoltaic (PV) into the Utah market. In addition, two major factors negatively affect the outcome of the program analysis; first, allowing the incurred cost of the solar PV owner to be factored into the total resource cost test and secondly, costs incurred by the Company for program research purposes are being factored into the cost benefit analysis. The USEP would prefer to provide additional comments on the program design, administration, and analysis, but due to the lack of information provided in the annual reports, it proves to be difficult and would be presumptuous. Based on the information provided in the 2009 report, the following comments and suggestions are provided by the USEP.

The Program budget provided in the report cites 29 percent of the program cost was attributed to administration. It should be acknowledged in the report that significant components of the administrative costs should not be considered normal operating cost for a non-pilot program, as efficiencies would be captured should the pilot program become larger scale and without extensive program monitoring for economic program analysis. To the degree at which the program is currently monitored for performance, several of the costs for analyzing program performance should not be reflected in a non-pilot program operating budget, e.g., on-site pre and post-inspection to all rebate projects, investment-grade meters at each site, and third-party analysis of program performance.



May 4, 2010

Subject: DOCKET NO. 07-035-T14 REQUEST FOR COMMENTS, Rocky Mountain Power's Tariff P.S.C.U. No. 47, Re: Schedule 107 – Solar Incentive Program

Administrative costs could be decreased significantly by auditing a statistically significant portion of the systems and requiring documentation similar to that of the existing Utah Renewable Energy Tax Credit Program and Utah Renewable Energy Rebate Program, which the USEP administers.¹ The USEP respectfully requests a more detailed budget to understand why administrative costs are so high. Currently the USEP's Renewable Energy Rebate Program, similar to the Company's program, administrative costs are only 14 percent of total program costs. The USEP's program is a limited, three year, \$3 million program with one full time equivalent employee.

The USEP respectfully requests that more detail be provided to understand the method and data source for understanding the approach in Table 3, the Levelized Cost of Energy. If the Company is only providing a fraction of the funding for the resource (\$2 per watt of capacity), it is unclear why the total resource cost is \$0.493/kWh. If the Company is determined to take into consideration costs paid by rebate customers, then the Company should consider program guidance that requires solar PV systems to be installed at a reasonable cost as well as optimal design (orientation and shading), similar to the USEP reasonable cost and system design guidance in the tax credit and rebate program. Typically, performance or capacity-based programs are considered best practice, so external costs should not be considered by the administrator. It seems prudent that the costs considered in this metric should be those directly incurred by the Company, such as the rebate cost and the projected administration cost under an ongoing program.

The generation meters mentioned on page 6, are a standard way to get production profile data. Many utility-owned performance-based rebate programs require monitoring, but the best available technology from third-party vendors are typically in the range of \$200 to \$300 dollars for system hardware, which is significantly less than the mentioned \$1800 per system.² The USEP recommends that the metering cost not be associated with the economic cost test as this is not a performance based incentive, rather it is used for the Company's economic test methodology.

Page 11 notes that marketing continues to be conducted by solar contractors, which poses administrative challenges due to limited funding. The USEP understands that the annual allocation of rebate funds is fully reserved within minutes of the annual application start date. The USEP concludes that due to the large demand for solar in the market, a lack of marketing for program participation is not a concern; rather it may be an issue to get out proper programmatic information to program participants.

2. METHODOLOGY

The methodology used for assessing program performance and the cost/benefit test is unclear. Further documentation as to how those data cited were collected and the methods used to analyze those data are necessary to fully evaluate the program. Points that require clarification and recommendations are:

- Section 1(e), states that the lower system cost for a specific system is an exception and should not be considered. This introduces subjective language that if taken into consideration, should also be in Section 1 (d) for high system costs. It is unclear as to whether these costs were taken into the average of \$9.35/Watt. The USEP requests clarification as to why there is such a focus on the resource cost incurred by the rebate applicant. The USEP suggests that the focus be on kWh produced (over the life of the solar PV system) and the benefits that the Company derives from

¹ http://geology.utah.gov/sep/incentives/re_taxcredit/retc_applications.htm

² For example, see PV Powered Performance Monitor.

<http://www.millionsolarroofs.com/pvpoweredperformancemonitorpvm1010.aspx>

May 4, 2010

Subject: DOCKET NO. 07-035-T14 REQUEST FOR COMMENTS, Rocky Mountain Power's Tariff P.S.C.U. No. 47, Re: Schedule 107 – Solar Incentive Program

this energy, as compared to the Company's program costs (minus the costs to evaluate the performance of the pilot program).

- The PV Watts calculator should not be used as reliable data in an empirical study such as this. The generation meters that have been installed recently will provide data that are needed to analyze PV systems affect on peak demand.
- The Cadmus report does not discuss why certain systems were not operational.
- The Cadmus report used a very small group of systems (3) that do not represent a statistically significant portion of this study.
- The Cadmus report does not take into account how different environments may affect performance, e.g., solar PV array orientation and geography.
- The Levelized Cost of Energy as presented in Table 3 should not take into account generation meters, administrative costs used to perform economic program evaluation, and costs incurred by the customer.

RECOMMENDATIONS:

Further research should be performed on more cost-effective reporting and monitoring systems that are used in mature solar incentive programs. Economies of scale can be found on monitoring systems when implemented on a program-wide basis as seen with Pacific Gas and Electric.³

Explanation of the methodology is lacking in the report, which makes it unclear as to how the values were figured and what they include. Costs of all program sectors should be clear and broken out in a supplemental report and future annual reports.

Costs associated with auditing and monitoring, should be expressed and considered independently of the program operating costs. Projected costs should be provided to estimate program costs if the program was increased in scale (budget and length of operation).

The orientation of the systems studied was not reported in the production profile section of the report. Being that orientation can have significant impact, we consider this an oversight that should be corrected in a supplemental report and future annual reports.

Last, the PV Watts Calculator should be abandoned as a metric with which real production data is compared. PV Watts is not intended to provide system-wide or program-wide empirical data. Use of this tool oversimplifies the benefits the Company receives from distributed solar PV systems to its service territory.

Page 4

May 4, 2010

Subject: DOCKET NO. 07-035-T14 REQUEST FOR COMMENTS, Rocky Mountain Power's
Tariff P.S.C.U. No. 47, Re: Schedule 107 – Solar Incentive Program

The USEP recommends that all program performance since 2007 be reevaluated with full transparency as to data sources and analysis techniques used. The methodology to be used in this proposed report should be discussed with the Commission and interested parties.

Thank you for the opportunity to provide comments on this Program. Please direct any questions or comments to Jason Berry or Elise Brown at 801-538-5428.

Respectfully,

Jason Berry
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Utah Geological Survey

Elise Brown
Renewable Energy Coordinator
State Energy Program