

March 7, 2011

***VIA ELECTRONIC FILING
AND OVERNIGHT DELIVERY***

Public Service Commission of Utah
Heber M. Wells Building, 4th Floor
160 East 300 South
Salt Lake City UT 84114

Attention: Julie P. Orchard
Commission Secretary

Re: Solar Photovoltaic Incentive Program (Schedule 107) Annual Report for Program
Year 2010

Pursuant to the Commission's August 3, 2007 order in Docket No. 07-035-T14, Rocky Mountain Power (the "Company") hereby submits for filing an original and five (5) copies of the annual report and associated attachments for the 2010 program year for the Solar Photovoltaic Incentive Program offered through Schedule 107.

Through this filing, Rocky Mountain Power also responds to the Commission's direction given in the February 10, 2011 order of the above referenced docket requiring the Company to provide responses to issues raised by parties in comments concerning the 2009 program year report. Specifically, the Commission directed the Company as follows:

Detail to Questions 1-4: The Division requests the Company provide adequate responses to issues 1-4 identified by the parties in response to the Company's 2009 Annual Report filing. With the continuation of the program to the five-year term, we direct the Company to provide these responses.¹

In response to Rocky Mountain Power's 2009 program year report (filed on March 15, 2010), parties raised several issues requiring a response by the Company. The Commission's order (dated September 15, 2010) concerning the 2009 program year report identified seven issues raised by parties² and directed the Company to provide responses to them in the three year program assessment report, which was filed with the Commission on September 30, 2010. The three year assessment report contained responses to the seven issues as directed by the Commission. In their comments dated November 30, 2010 regarding the three year assessment report, the Division of Public Utilities concluded that the Company's responses to issues 2, 3, 5, 6 and 7 were adequate, but recommended the Commission direct the Company to provide additional responses to issues 1 and 4.³ In response to the Division's recommendation, the

¹ Refer to item no. 4 of the ordering section (page 7) of the Commission's February 10, 2011 order.

² The seven issues were summarized in the September 15, 2010 order, beginning on page 3.

³ Refer to page 8 of the Division's November 30, 2010 comments.

Commission directed the Company to provide responses to issues 1 and 4 in the February 10, 2011 order concerning the three year program assessment report.

In compliance with the Commission's direction, the Company provides herein responses to issues 1 and 4. The issues are replicated as contained within the Commission's September 15, 2010 order concerning the 2009 program year report.

Issue No. 1 - The Commission should open an investigative docket, or other formal proceeding, to initiate a comprehensive review of the effectiveness of the Program and evaluate it for possible changes and expansion.

Rocky Mountain Power is supportive of the Commission initiating an investigative proceeding to study the possibility of a solar photovoltaic program in Utah extending beyond the initial five year term of the existing pilot program. The Company anticipates this process would consider the appropriateness of a continued solar program in Utah and the structure of that program. The Company respectfully reiterates its request contained within its comments dated December 13, 2010 in this docket that the Commission establish of a process in the fall of 2011 to determine whether a continued or expanded solar PV program in Utah is appropriate and how that program might be structured.⁴

Issue No. 4 - The Parties support a more open and thorough review process and request a more detailed explanation of the methodology, assumptions, calculations, formulas and models used in the report and request an open forum to explore these issues. Of particular concern are Tables 3 (Levelized Cost of Energy) and 4 (Results for Standard Economic Tests).

The Company is providing as an attachment to this filing the model used to develop the levelized cost of energy figures and the standard economic test results provided in Figures 3 and 4, respectively, of the 2010 program year report. Rocky Mountain Power also provides the models used to produce these figures for the 2007, 2008 and 2009 program years in compliance with the Commission's direction in the order concerning the 2009 program year report.⁵

The model for the 2010 program year is provided as Attachment A. Models for the 2009, 2008 and 2007 program years are provided as Attachments B, C and D, respectively. These models contain proprietary information that would be detrimental to The Cadmus Group, Inc, the contractor who prepared the cost effectiveness results, if disclosed to a competitor. Accordingly, Rocky Mountain Power is filing Attachments A, B, C and D under seal, and requesting that the Commission require any party who wishes to view these attachments execute a Confidential Information Certificate. For the Commission's convenience the Company has provided as Attachment E a draft Confidential Information Certificate with this filing.

⁴ Refer to page 4 of Rocky Mountain Power's comments submitted in this docket on December 13, 2010.

⁵ Refer to item no. 3 in the ordering section (page 5) of the Commission's September 15, 2010 order in Docket No. 07-035-T14.

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It is respectfully requested that all formal correspondence and staff requests regarding this matter be addressed to:

By E-mail (preferred): datarequest@pacificorp.com

By regular mail: Data Request Response Center
PacifiCorp
825 NE Multnomah Blvd., Suite 2000
Portland, OR 97232

Informal inquiries regarding this report may be directed to Aaron Lively, regulatory manager, at (801) 220-4501.

Sincerely,



Jeffrey K. Larsen
Vice President, Regulation

Enclosures

cc: Division of Public Utilities
Office of Consumer Services



Utah Solar Incentive Program

2010 Annual Report

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Executive Summary

In Docket No. 06-035-21, Rocky Mountain Power (“Company”) outlined plans to introduce a Solar Photovoltaic program in Utah to gain market based information on the value of distributed solar resources to assist the Company in meeting peak demand requirements. On April 4, 2007, Rocky Mountain Power filed Tariff Advice No. 07-14 with the Public Service Commission of Utah (“Commission”) requesting approval to implement a Solar Incentive Pilot program (“Program”), which was approved by the Commission on August 3, 2007.¹ In the order approving the Program, the Commission directed the Company to provide annual reports on the Program containing information about completed projects, Program expenditures and recommendations. This report is provided pursuant to that order and presents information on the Program, which is administered through Schedule 107, for the 2010 Program year.

Goals of the Program

The intent of this Program is to gather market based information on the viability of a solar program in Utah funded by participating customers, tax incentives and Company incentives. The Program will provide technical information on the integration of distributed solar resources into the Rocky Mountain Power system and demonstrate the ability of solar power to meet growing peak demand. It will also gauge customers’ willingness to participate in this Program. In summary, the goals of the Program are to:

- Provide an assessment of the benefits of solar photovoltaic systems in Utah.
- Provide an assessment of the costs of solar photovoltaic systems in Utah.
- Gain experience on Program administration logistics
- Acquire information on customer acceptance of solar photovoltaic systems in Utah.
- Provide experience in working collaboratively with the solar community.

¹ Refer to Docket No. 07-035-T14.

Key Dates, Data and Activities for 2010 Program

- Application acceptance date (the first day applications could be submitted) was February 15, 2010.
- Program installation completion date (the day projects had to be complete) for 2010 was January 31, 2011.
- Solar installations with a combined capacity of 18.640 kW for residential applications and 8.603 kW for non-residential applications were carried over from 2009 to the 2010 Program year.
- Including the carryover from 2009, the combined capacity available and allocated totaled 75.640 kW for residential and 58.603 kW for non-residential projects in 2010.
- The 2010 Program also employed a waiting list. Applicants on this list could be eligible to receive 2010 incentives if an approved 2010 applicant withdrew or cancelled their project. It is important to note that the current year waiting list does not function as a pre-reservation for the next Program year allocation.
- Twenty-two customers notified the Program administrator during 2010 they were not able to complete their projects and would re-apply later. When projects were dropped early in 2010, replacement projects from the waiting list were added. When projects dropped later in the year, replacement projects could not be completed in time. As a result of project cancellations, 15.033 kW for residential and 8.398 kW non-residential were carried over from 2010 to the 2011 Program allocation.

Summary of 2010 Results

Information in the tables below summarizes expenditures by cost category, installed capacity by customer type and application data for the 2010 Program. Additional information on individual 2010 projects is available in the Appendix.

Table 1. 2010 Program Installed Capacity and Expenditures

	kW	Incentives	Administration	Expenditures
Residential	60.607	\$121,231		\$121,231
Non-residential	50.205	\$100,359		\$100,359
Third party - total			\$78,996	\$78,996
Utility administration & evaluation			\$11,712 ²	\$11,712
Total	110.812 ³	\$221,590	\$90,708	\$312,298

Table 2. 2010 Program Applications

Received	90
Approved and completed	32
Denied	0
Dropped/re-apply later	27
Moved to 2010	0
Added to 2010 waiting list	31

Key Findings from 2010

This section outlines key findings from the 2010 Program and is designed to compare 2010 Program activity and results in relation to stated Program goals. These findings help inform the Company's recommendations for the next Program year.

1. Installed System Costs - associated Program goal: assessment of Program costs.

- a. Total reported participant costs were \$1,069,582 with customers receiving incentives for 110.812 kW(ac). In 2010, 14 participants installed systems larger than the maximum size eligible for incentive through the Program, resulting in an additional 13.007 kW(ac) of installed capacity beyond Program limits. A total of

² Includes direct labor costs for Program management, marketing and analysis. In 2010, the Company did not perform additional site inspections beyond those performed by the Program administrator. As a result, utility labor does not include any site inspection costs. Costs for net meters and associated metering department time was not allocated to the Program nor reflected in these costs. For the 32 project installations in 2010, 30 sites had generation meters installed at the cost of \$32 per site, or \$960 in total. Beginning in 2009, interval generation meters were installed on 10 projects. Generation information from these meters was collected in 2010. Telecommunication charges for the interval meters were \$1,680 in 2010. Net meters were installed at 2010 installations at a cost of \$125 per site, or \$4,000. In 2010, metering costs of \$6,640 were incurred by the Company and not billed to the Program.

³ In 2010, fourteen customers (thirteen residential and one non-residential) installed systems larger than the maximum size eligible for Program incentives pursuant to Schedule 107. Installed capacity in 2010 beyond the Program limits reflects an additional 13.007 kW. Total installed capacity for systems receiving a Program incentive in 2010 is 123.819 kW. The Company did not issue incentives for capacity installed beyond the Program limits.

123.819 kW(ac), including the surplus capacity for which a Program incentive was not granted, was installed in Program year 2010 as listed in Appendix 1.

- b. Average installed costs before any incentives were \$8.64 per Watt(ac).
 - c. Highest system cost was \$16.74 per Watt(ac), which included a battery backup. This project had to trench a distance and core drill through their foundation.
 - d. Lowest system cost was \$3.63 per Watt(ac). The participant only paid for materials with the contractor donating the labor costs. The Company considers this installation an exception.
 - e. The 2010 average system cost decreased from 2009, which was \$9.69 per Watt(ac).
 - f. The highest system cost in 2010 was \$16.74 per Watt(ac), which is 40 percent less than the highest system cost in 2009 at \$27.90 per Watt(ac).
 - g. The lowest system cost in 2010 was \$3.63 per Watt(ac), which is 12 percent more than the lowest system cost in 2009 at \$3.23 per Watt(ac).
 - h. Net meters and standard generation meters required for 2010 Program installations cost \$157 per residential installation, or \$5,024 in total for 32 installations. For net meters, the per-meter cost for 2010 was the same as 2009. Net metering and installation costs are not included in customer or utility costs shown in Table 1, but are provided in Table 3 which illustrates the levelized costs of energy.
2. Trade Allies – associated Program goal: gain experience working with solar community.
 - a. 21 contractors performed the 2010 Program installations, representing an increase of 6 from 2009.
 - b. 14 contractors performed 1 installation each.
 - c. 3 contractors performed 2 installations each.
 - d. 4 contractors performed 3 installations.
 3. Customers - associated Program goal: customer acceptance of solar in Utah.
 - a. Participants were from 22 unique cities, comparable to 2009 at 18.
 - b. Cities with the top participant counts are: Salt Lake City (7), and 2 each in Moab, Ogden, Sandy, South Jordan and Taylorsville.

- c. New participants are no longer required to submit Attestation certificates. Rather the customer is required to install a generation meter base after which Rocky Mountain Power installs a generation meter.
 - d. The most commonly cited reason for cancelled projects was changes in funding availability for solar equipment.
 - e. Several potential participants opted to participate in the State of Utah's solar incentive program instead of the Company's Solar Incentive Program. Under the state's program, participants can receive the lesser of 25 percent of the total system cost or \$2 per Watt. Projects cannot receive incentives from both the Company and state incentive programs, except for participants installing a solar system in excess of the Company's limit of 3 kW for residential installations or 15 kW for non-residential installations. The Company is not aware of any 2010 participants receiving incentives from both programs.
4. Marketing - associated Program goals: Program administration logistics & experience in working with solar community.
- a. Similar to the prior Program years, proactive trade allies are using personal selling to market the Program to end use customers.
 - b. Applications are being completed and submitted by the trade allies. This is being done as a service for customers and is similar to prior Program years.
 - c. The Program funded a sponsorship for the 2010 Utah Solar Tour. The Utah Solar Association and the sponsorship included a print ad in the tour magazine.
5. Equipment Availability - associated Program goals: Program administration logistics and experience in working with solar community. One participant dropped out at the end of the year due to unavailability of equipment. Another participant switched to other equipment due to material shortages.
6. Allocation of Program Incentives - associated Program goals: Program administration logistics.
- a. Even with a full year for approved projects to be constructed, changes in customers' available funding throughout the year precluded all of the available capacity and incentives from being fully utilized in the prescribed time frame.

- b. Annual Program allocations pose an on-going administrative burden related to communications and chronological processing requirements.
- c. The waiting list helped maximize yearly installation capacity and compensated for project cancellations, but lead times on waiting list projects and timing of canceled projects pose challenges to fully allocating annual Program incentives.
- d. The shortfall in subscribing the 2010 allocation within the Program year was largest in the residential customer group; however, subscription shortfalls decreased in 2010 when compared to 2009. The shortfall in allocated non-residential incentives also declined when compared to the 2009 Program year.

7. Assessment of Benefits Goal

A key goal of the Program is to assess the benefits of solar photovoltaic installations to Rocky Mountain Power's system, especially during periods of peak demand. Accurate measurements of the output of installed solar photovoltaic systems are an integral part of that effort. Prior Program annual reports have outlined the challenges of having customers provide output data from their system inverters on a regular basis and submit that information to the Company via Attestation certificates. Also, in prior annual reports, the Company described an alternate approach to estimating solar photovoltaic system output on an hourly basis through the use of the National Renewable Energy Laboratory ("NREL") PV Watts calculator. Estimated output from each installation was calculated using the PV Watts calculator and a graphical representation of the contribution of the Program installations to the Utah peak was provided.

On July 23, 2009, the Office of Consumer Services ("Office") provided comments on the Company's 2007 and 2008 annual reports which included the following recommendation:

The Office understands that Attestation certificates are an important factor for Program evaluation and therefore believe the Company should be considering other avenues to obtain compliance in this area. Potential solutions might include withholding incentive payments until Attestation certificates are received or making only partial incentive payments until participants are in compliance with the requirements of the Program. The Office recommends that the Commission require the Company to assess the problem and consider alternative methods for increasing

participant compliance in returning Attestation certificates.⁴

The use of the Attestation certificates was originally proposed as a means to acquire solar photovoltaic system output data in a pilot Program with the majority of the funds designated for customer incentives. This approach was suggested by a consultant to the Program administrator who had experience in other markets. While this approach has had the advantage of reduced costs, it is reliant on customers taking regular action to record the output of their system. The variable customer response in providing this data over years 2007 and 2008 has caused the Company to assess options for more reliable data with more granularities. The Company also notes that information collected through the Attestation certificates only provides system generation data that represents the system's output since the last reading and does not provide information on the system's ability to generate during peak periods of demand.

Beginning the last half of 2009, the Company elected to install interval production meters at a selected number of sites to gather interval generation data. Installation of this meter by the Company is a matter of installing it in the customer provided socket at the same time the net meter is installed at project completion. Many customers install a generation meter socket (in addition to the net meter socket) and a disconnect switch as part of their project and if a generation meter is not installed, the socket is bridged and sealed by the Company. In prior Program years, in order to minimize costs, fewer customers installed this equipment, but during the latter half of 2009 the Program administrator began requiring this equipment on all projects. The generation meters installed in these sockets can be read remotely and record 15 minute interval data on system output. The Company installed metering capable of measuring monthly generation on 30 of the 2010 installations. A comparison of the generation data and the PV Watts1 output was performed and is provided as Appendix 2.

All 2011 Program participants will be required to install generation meter sockets and the Company plans to install additional interval generation meters at selected sites. In 2011, the meter department will be asked to allocate the costs for additional meters to the

⁴Refer to page 2 of the Office's memorandum to the Commission dated July 23, 2009 in Docket No. 07-035-T14.

Program. Interval data from this pool of installed meters will be used to correlate/validate PV Watts data for systems.

In summary, findings from the 2010 Program indicate average costs per installed Watt were less than 2009, dropping just over ten percent. The number of contractors installing Program qualifying projects has increased by six. The installations were more dispersed throughout various vendors when compared to the 2009 Program year where one contractor installed nine systems. Marketing continues to be done with contractors utilizing personal selling and including the Program application process as part of their sales process. The annual Program allocation process continues to subscribe quickly.

Recommendations for the Program Year 2011

1. Rocky Mountain Power filed with the Commission its three year assessment report of the Program on September 30, 2010. On February 10, 2011, the Commission issued an order in Docket No. 07-035-T14 in response to the Company's three year assessment report, comments of interested parties and comments of the Company. Through the order, the Commission lowered the Program incentive from \$2.00 per Watt to \$1.55 per Watt to reflect the declining cost of installed solar photovoltaic systems. Consistent with the Commission's direction, the Company will offer capacity to applicants for the 2011 Program year (final year of the pilot Program) beginning on March 24, 2011 at an incentive rate of \$1.55 per Watt.
2. Carry over the "unused 2010 kW allocation" (15.033 kW for residential installations and 8.398 kW for non-residential applications) to the 2011 Program. To ensure consistent marketing messages surrounding annual kW allocations, the addition will occur as part of the 2011 tracking by the Program administrator and will not be marketed as a specific roll-over amount⁵.
3. Continue on-going communication to solar trade ally community regarding the importance of acquiring generation data from Program installations and that Program

⁵ Since pilot Program revenue requirements were established based on five full years of Program operation, the re-allocation decision was made to compensate for the short falls in projects completion from 2007 that rolled into 2008, short falls from 2008 that were carried over into 2009, and short falls from 2009 were carried over into 2010. The same approach is applied for the 2010 shortfall which is carried over to 2011. In other words, the intent is to deploy five years of funding to acquire the five year Program targets even if each year is not an exact 20 percent of the total capacity.

requirements to support data acquisition, i.e. meter socket and disconnects are a necessary component to assist the Company in assessing Program effectiveness.

4. Install interval generation meters at all new installations where cell phone reception is of sufficient strength. The Company will install standard monthly generation meters in the few cases where cell reception is not adequate. The Company will record interval data for the sites that have existing interval metering installed and for sites that will have interval generation metering installed in 2011. For sites where interval metering is not installed, the Company will record monthly generation data from installations that have standard production meters installed.
5. The first applications for the 2011 Program year can be submitted on March 24, 2011.
6. Require potential Program participants to meet specific milestones within designated time periods. Any applicant failing to meet a designated milestone in the required time period will forfeit the right to participate in the Program. The forfeited capacity will be awarded to the next potential participant on the first come, first-served waiting list. It is expected that this process will assist in meeting the objective of deploying all Program capacity by the end of the 2011 Program year.

Similar to prior Program years and in support of the assessment of benefits goal, the Company has retained a third party consultant to estimate hourly output of the solar photovoltaic systems using the National Renewable Energy Laboratory (NREL) PV Watts calculator, which is available at http://rredc.nrel.gov/solar/codes_algs/PVWATTS/version1/. Information on the Program installed systems provided in Appendix 1 is an input to this calculation. In addition, the levelized cost of energy and the results of the standard economic tests are provided. This is similar to the approach utilized for prior Program years. The model used to generate the results of the standard economic tests presented in Figure 4 is provided as Confidential Attachment A. The models used to generate the economic test results from Program years 2009, 2008 and 2007 are provided as Confidential Attachments B, C and D, respectively.⁶

⁶ These models are being provided in compliance with the orders dated September 15, 2010 and February 10, 2011 in Docket No. 07-035-T14, in which the Commission directed the Company to provide additional information on the methodology, assumptions, calculations, formulas, models used to develop the information presented in Figures 3 and 4.

Table 3. Levelized cost of Energy⁷

Customer Cost (for capacity receiving incentives)	\$1,069,582
Incentives	\$221,590
Administration	\$90,708
Meters (Net meters, gen meters and telecommunications costs)	\$14,608
Total Annual Generation (MWh)	196.8
Levelized Total Cost (\$/MWh)	\$530.86
Levelized Utility Cost (\$/MWh)	\$147.71
2008 IRP 49% Load Factor Decrement Levelized Cost (\$/MWh) ⁸	\$101.86

Table 4. Results for Standard Economic Tests

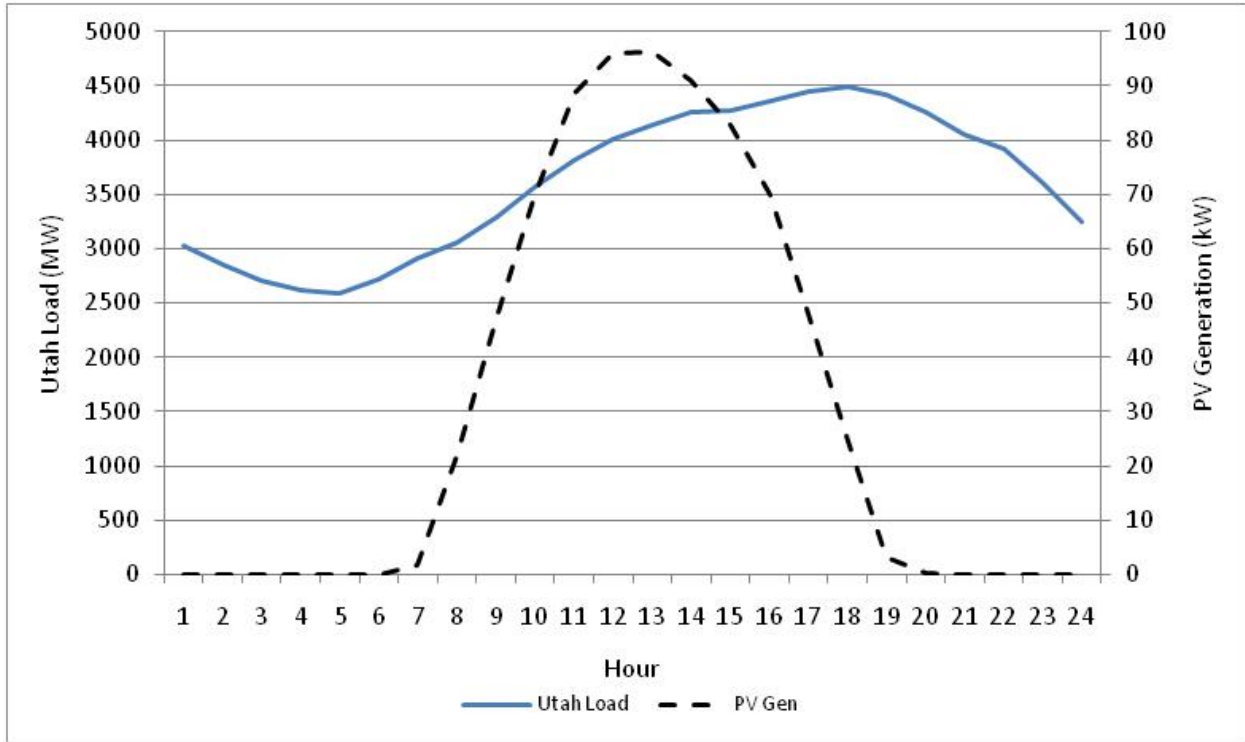
All Systems	AC: IRP 49% LF Decrement				
	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	0.5309	\$1,174,898	\$315,418	(\$859,480)	0.268
Total Resource Cost Test (TRC) No Adder	0.5309	\$1,174,898	\$286,744	(\$888,154)	0.244
Utility Cost Test (UCT)	0.1477	\$326,906	\$286,744	(\$40,162)	0.877
Rate Impact Test (RIM)		\$573,537	\$286,744	(\$286,793)	0.500
Participant Cost Test (PCT)		\$847,992	\$246,631	(\$601,361)	0.291
Lifecycle Revenue Impacts (\$/kWh)				\$0.0000003739	

The ability of solar resources to meet peak demand in Utah is illustrated in Figure 1 below. The shape of the generation output is derived from actual installation data modeled using the PV Watts Calculator from NREL. The load curve from August 3, 2010 (Utah peak demand in 2010) for Rocky Mountain Power's Utah service territory is shown in Figure 1 below and is compared to the assumed output (based on the PV Watts Calculator results) of the solar photovoltaic systems on the same day.

⁷ Levelized at 7.4% discount rate over 25 year estimated life.

⁸ Recognizing that solar output doesn't align with system coincident peaks and despite its high availability factor, solar has a limited capacity factor (reducing its resource value), the Company used an avoided cost of a flatter resource load shape, commercial lighting, in approximating the cost-effectiveness of the resource. Source was 2008 IRP decrement value for commercial lighting and assumes \$45 CO₂ tax.

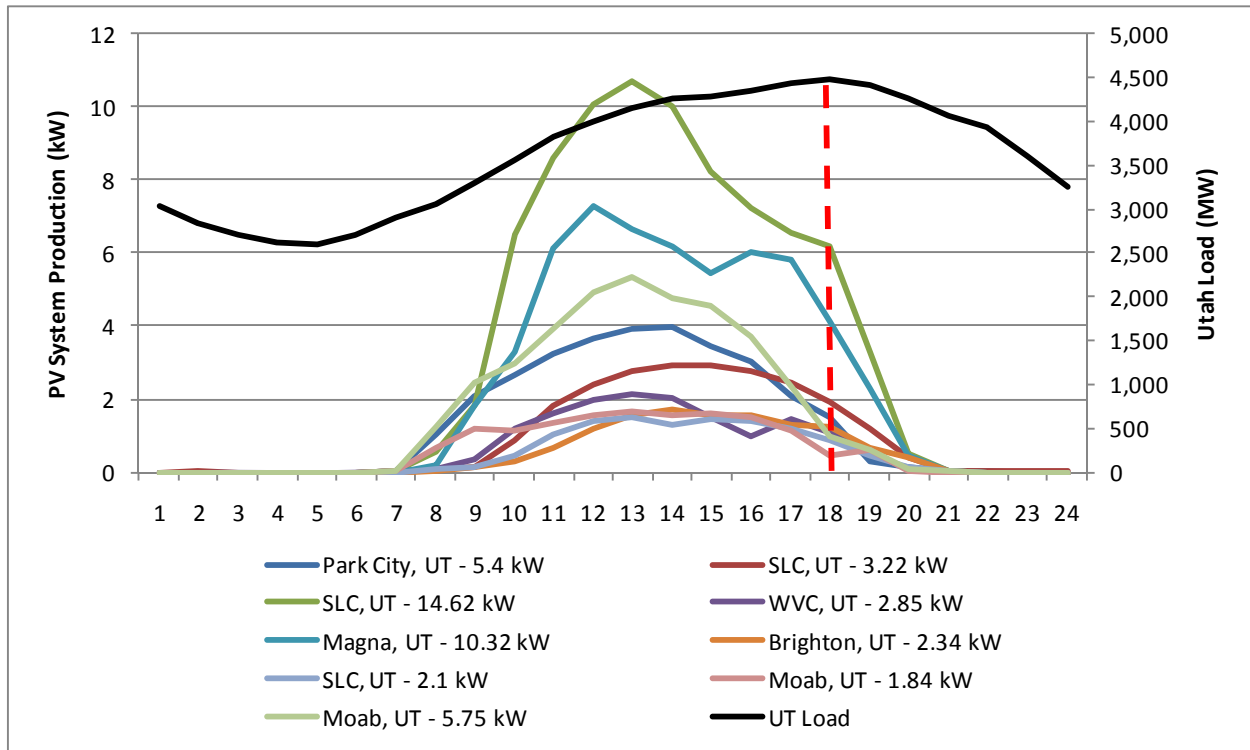
Figure 1. Utah Peak Day Generation and Load Profile (August 3, 2010)



This analysis indicates the solar generation resources deliver peak output between noon and 2:00 p.m. while Utah load peaks later in the day at 6:00 p.m. Solar resources, while not coincident with system peaks do contribute a percentage of energy during the higher load and energy cost hours of summer days, as shown in Figure 1 above. Hourly information used in providing this illustration, as well as for each hour of the year, is being stored electronically as supporting documentation for the 2010 Program.

As indicated previously, the Company has installed interval production meters on 10 systems which have received a Program incentive. These meters are capable of recording generation output on a 15-minute interval basis. Figure 2 below presents the hourly generation output of 9 of these systems on the Utah peak day in 2010 (August 3, 2010). As illustrated in Figure 2, the peak output of these systems on August 3, 2010 was generally from noon to 2:00 p.m. This is consistent with the solar resource load curve produced by the PV Watts calculator provided in Figure 1.

Figure 2. Utah Peak Day Metered Customer Generation and Load Profile (August 3, 2010)



Appendix 1 - 2010 Program Project Detail

Table 5. 2010 Program Residential Participants

Project ID	City	Incentive	Total system - kW	System Kw eligible for incentive	Total System Cost (\$)	\$/Watt - total cost	% of Sunshine	System Orientation	System Tilt Angle (Degree,°)	Module Manufacturer	Module Model	Module Quantity	Module CEC rated Watts Output	Inverter Manufacturer	Inverter Model	Inverter CEC Weighted Efficiency %
9010517	Soldier Summit Estates	\$5,740	3.382	2.870	\$25,950.54	\$7.67	100.00%	180	35	Canadian Solar	CS6P-200PE	20	177.1	SMA	SB 3000	95.50%
9010531	Lasal	\$3,582	1.791	1.791	\$15,260.34	\$8.52	100.00%	180	25	REC Solar	SCM215	10	187.5	SMA	SB 5000US	95.50%
9010535	Moab	\$2,850	1.634	1.425	\$14,979.07	\$9.17	100.00%	180	35	Sanyo	HIP-205N	9	190.2	Enphase Energy	M210-84-240-Sxx	95.50%
100215.02	Salt Lake City	\$5,539	3.400	2.769	\$44,069.00	\$12.96	91.00%	180	40	Conergy	P 230PA	18	207.6	Outback Power System	GVFX3648	91.00%
100215.04	Salt Lake City	\$4,698	2.349	2.349	\$20,212.08	\$8.60	95.00%	180	37	SunPower	SPR-225E-Wht	12	205	SunPower	SPR3000m (240v)	95.50%
100215.06	South Jordan	\$6,000	5.012	3.000	\$45,491.00	\$9.08	100.00%	230	50	Canadian Solar	CS5P/240M	24	218.7	SMA America	SB5000US (208v)	95.50%
100215.07	Salt Lake City	\$6,000	3.454	3.000	\$30,183.00	\$8.74	100.00%	180	32	Trina Solar	TSM-230PA05	18	202	Enphase Energy	M190-72-240-Sxx	95.00%
100215.08	Taylorsville	\$4,420	2.210	2.210	\$10,613.54	\$4.80	90.00%	135	30	Schott Solar	Poly 220	12	193.9	Enphase Energy	M190-72-240-S13	95.00%
100215.09	Layton	\$1,391	0.695	0.695	\$11,633.35	\$16.74	100.00%	180	30	REC ScanModule	SCM 215	4	187	Xantrex	XW4548-120/240-60	93.00%
100215.10	Dammeron Valley	\$6,000	4.155	3.000	\$45,678.46	\$10.99	100.00%	180	37	REC ScanModule	REC 215AE-US(BLK)	24	187.2	Xantrex	XW6048-120/240	92.50%
100215.12	Lindon	\$6,000	3.197	3.000	\$28,350.00	\$8.87	100.00%	165	27	REC ScanModule	SCM 215	18	187	Enphase Energy	M190-72-240-S12	95.00%
100215.14	Pleasant Grove	\$6,000	3.001	3.000	\$25,875.00	\$8.62	100.00%	180	40	SunPower	SPR-230-WHT-U	15	209.5	SunPower	SPR-3000 (240v)	95.50%
100215.15	Virgin	\$4,660	2.330	2.330	\$23,041.35	\$9.89	100.00%	Tracker	Tracker	Solar World	SW 230 Mono	12	204.4	Enphase Energy	M190-72-240-Sxx	95.00%
100215.16	Park City	\$5,642	2.875	2.821	\$19,736.00	\$6.86	100.00%	180	38	Solar World	SW 240 mono	14	215	SMA America	M210-84-240-Sxx	95.50%
100215.17	Salt Lake City	\$1,489	0.761	0.744	\$7,579.92	\$9.96	95.00%	180	40	Solar World	SW225 mono black	4	200.4	Enphase Energy	M190-72-240-Sxx (-NA)	95.00%
100215.20	Herriman	\$716	0.358	0.358	\$3,000.00	\$8.38	100.00%	180	27	REC ScanModule	SCM 215	2	187.5	Enphase Energy	M190-72-240-S12	95.50%
100215.25	Moab	\$3,813	1.906	1.906	\$12,670.71	\$6.65	100.00%	180	39	REC Solar	REC230AE-US	10	200.7	Enphase Energy	M190-72-240-Sxx	95.00%

Project ID	City	Incentive	Total system - kW	System Kw eligible for incentive	Total System Cost (\$)	\$/Watt - total cost	% of Sunshine	System Orientation	System Tilt Angle (Degree,°)	Module Manufacturer	Module Model	Module Quantity	Module CEC rated Watts Output	Inverter Manufacturer	Inverter Model	Inverter CEC Weighted Efficiency %
100215.30	West Valley	\$5,596	2.798	2.798	\$13,780.38	\$4.93	100.00%	180	20	Phono Solar Technology	PS230M-20/U	14	208.2	SMA America	SB4000US (240V)	96.00%
100215.31	Highland	\$6,000	3.355	3.000	\$21,890.00	\$6.52	100.00%	180	30	REC ScanModule	REC225AE-US (BLK)	18	196.2	Enphase Energy	M190-72-240-Sxx	95.00%
100215.33	Salt Lake City	\$5,453	2.726	2.726	\$18,018.80	\$6.61	100.00%	180	40	SunPower	SPR-225E	14	205	SunPower	SPR-3000m (208v)	95.00%
100215.37	Wanship	\$3,426	2.205	1.713	\$9,704.99	\$4.40	100.00%	180	45	Canadian Solar	CS6P-230P	11	211	Enphase	M-190-72-240-Sxx	95.00%
100215.40	Ogden	\$3,072	1.685	1.530	\$12,328.18	\$7.32	100.00%	180	35		SW 230	9	205.8	Outback Power System	GVFX 3648	91.00%
100215.41	Alta	\$2,914	1.457	1.457	\$14,300.00	\$ 9.81	100.00%	180	45	REC Solar	REC220AE-US (BLK)	8	191.7	Enphase	M190-72-240-Sxx	95.00%
100215.42	Sandy	\$3,350	1.675	1.675	\$16,344.00	\$ 9.76	Variable	180	35	Sanyo	HIT-N210A01	9	194.9	Enphase	M-210-84-240-Sxx	95.50%
100215.44	Salt Lake City	\$6,000	3.575	3.000	\$27,878.01	\$ 7.80	76.00%	286	35	REC Solar	REC215AE-US	20	187.2	Enphase	M190-72-240-Sxx	95.50%
100215.47	Salt Lake City	\$6,000	3.083	3.000	\$11,186.40	\$3.63	96.00%	180	45	Conergy	Conergy Black 225PA	16	201.8	SMA America	SB3000US (240V)	95.50%
110215.49	Ogden	\$4,881	2.440	2.440	\$11,118.82	\$ 4.56	100.00%	178	30	Sharp	ND 224UC1	13	197.6	Enphase	M-190-72-240-Sxx	95.00%
Total:		\$121,231	67.509		\$ 540,873											

Table 6. 2010 Program Residential – Withdrawn and Waiting List Participants

Project ID	Application Status Notes	App Submittal Date	City	Estimated Incentive	Estimated kW	% of Sunshine	System Orientation	System Tilt Angle (Degree,°)	Module Manufacturer	Module Model	Original App: Module Quantity	Original App: Watts Output	CEC Efficiency	Original App: Module	Original App: Inverter Model	Original App: Inverter CEC Weighted Efficiency %	Invoice: CORRECT CEC EFFICIENCY	Inverter Quantity
100215.11	Application Withdrawn / Ineligible	2/15/2010	Layton	\$6,000	3.283		180	40.8	Evergreen Solar	ES-A-210-Fa2	18	190	190	SMA America	SB4000US (240v)	96%	96%	1
9010534	Application Withdrawn / Ineligible	2/15/2010	Orem	\$5,920	2.960		178	40	Solar World	SW175 mono	20	175.0	156.6	Enphase	M175-24-208-S01	94.5%	94.5%	20
100215.01	Application Withdrawn / Ineligible	2/15/2010	Sandy	\$6,000	3.449		182	25	BP Solar	BP3215B	20	180.6	180.6	PV Powered	PVP4600	95.5%	95.5%	1
100215.29	Application Withdrawn / Ineligible	2/15/2010	Sandy	\$6,000	4.165		180	30	REC	REC210-AE	24	182.7	182.7	Enphase Energy	M190-72-240-Sxx	95.00%	95.00%	17

Project ID	Application Status Notes	App Submittal Date	City	Estimated Incentive	Estimated kW	% of Sunshine	System Orientation	System Tilt Angle (Degree, °)	Module Manufacturer	Module Model	Original App: Module Quantity	Original App. Watts Output	CEC Efficiency	Original App: Module	Original App: Inverter Model	Original App: Inverter CEC Weighted Efficiency %	Invoice: CORRECT CEC EFFICIENCY	Inverter Quantity
100215.28	Application Withdrawn / Ineligible	2/15/2010	Roy	\$2,287	1.144	90%	180	40	REC	REC230AE-US	6	200.7	200.7	Enphase Energy	M190-72-240-Sxx	95.00%	95.00%	6
100215.13	Application Withdrawn / Ineligible	2/15/2010	Salt Lake City	\$3,703	1.851	100%	180	30	Sanyo Elect	HIP-210NKHA5-210W	10	194.9	194.9	Enphase Energy	M200-32-240-Sxx	95.00%	95.00%	10
100215.21	Application Withdrawn / Ineligible	2/15/2010	Salt Lake City	\$1,861	0.931	99%	180	27	Sanyo Electric	HIP-210NKHA5	5	194.9	194.9	Enphase Energy	M210-84-240-Sxx	95.50%	95.50%	5
100215.18	Application Withdrawn / Ineligible	2/15/2010	Clearfield	\$6,000	3.100	100%	180	23	SunPower	SPR-225-BLK-U	16	202.9	202.9	SunPower	SPR3000m (240v)	95.50%	95.50%	1
100215.03	Application Withdrawn / Ineligible	2/15/2010	Salt Lake City	\$6,000	3.340	97%	180	26	SunPower	SPR-315-E-Wht-D	12	290	290	SunPower	SPR4000m (240v)	96.00%	96.00%	1
100215.23	Application Withdrawn / Ineligible	2/15/2010	Salt Lake City	\$5,338	2.669	91%	180	37	REC ScanModule	REC230AE-US	14	200.7	200.7	Enphase Energy	M190-72-240-S12	95.00%	95.00%	14
100215.27	Application Withdrawn / Ineligible	2/15/2010	Salt Lake City	\$6,000	3.536	93%	185	30	Sanyo	HIT-N210A01	19	194.9	194.9	Enphase Energy	M210-84-240-Sxx	95.50%	95.50%	15
100215.22	Application Withdrawn / Ineligible	2/15/2010	Draper	\$6,000	3.562	95%	130	30	REC ScanModule	SCM 215	20	187.5	187.5	Enphase Energy	M190-72-240-S12	95.00%	95.00%	20
100215.34	Application Withdrawn / Ineligible	2/15/2010	Smithfield	\$6,000	3.129		180	30	Canadian Solar	CS6P-200P	18	183	183	Enphase Energy	M-190-72-240-Sxx	95.00%	95.00%	18
100215.32	Application Withdrawn / Ineligible	2/15/2010	American Fork	\$5,901	2.951		180	30	REC Solar	REC210AE-US	17	182.7	182.7	Enphase Energy	M-190-72-240-Sxx	95.00%	95.00%	15
100215.35	Application Withdrawn / Ineligible	2/15/2010	Moab	\$6,000	3.122		180	39	Evergreen Solar	ES-A-200-fa3	18	180.7	180.7	SMA America	SB4000US (240v)	96.00%	96.00%	1
100215.38	Application Withdrawn / Ineligible	2/15/2010	Brookside	\$6,000	3.176		180	22.5	Schott Solar	Poly 220	16	198.5	198.5	Xantrex	GT3.8-NA-240/208	95.00%	95.00%	16
100215.45	Application Withdrawn / Ineligible	2/15/2010	Park City	\$6,000	4.836		180	35	Canadian Solar	CS6P-230P	24	211	211	SMA America	SB6000US (240v)	95.50%	95.50%	1
100215.05	Application Withdrawn / Ineligible	2/15/2010	Ogden	\$6,000	7.278	90%	160	45	Sharp	Nu-U235F1	36	211.7	211.7	SMA America	SB5000US (240v)	95.50%	95.50%	2
100215.46	Application Withdrawn / Ineligible	2/15/2010	Holladay	\$5,177	2.588		180	28	Evergreen Solar	ES-A-200-fa2	15	180.7	180.7	Xantrex	GT3.8-NA-240/208	95.50%	95.50%	1

Project ID	Application Status Notes	App Submittal Date	City	Estimated Incentive	Estimated kW	% of Sunshine	System Orientation	System Tilt Angle (Degree, °)	Module Manufacturer	Module Model	Original App: Module Quantity	Original App: Watts Output	CEC Efficiency	Original App: Module	Original App: Inverter Model	Original App: Inverter CEC Weighted Efficiency %	Invoice: CORRECT CEC EFFICIENCY	Inverter Quantity
100215.43	Application Withdrawn / Ineligible	2/15/2010	Salt Lake City	\$4,678	2.338		180	35	Sanyo	HIT-N210A01	12	194.9	194.9	Enphase Energy	M210-84-240-Sxx	95.50%	95.50%	12
100215.19	Application Withdrawn / Ineligible	2/15/2010	Salt Lake City	\$6,000	9.882	95%	180	25	SunPower	SPR-225-BLK-U	51	202.9	202.9	SMA America	SB6000US (240v)	95.50%	95.50%	2
100215.36	Application Withdrawn / Ineligible	2/15/2010	Salt Lake City	\$6,000	3.050	100%	250	40	REC	REC230AE-US	16	200.7	200.7	Enphase	M190-72-240-S12	95.00%	95.00%	16
100215.59	Application Withdrawn / Ineligible	2/15/2010	Draper	\$2,362	1.180		180	28	BP Solar	BP3175N	8	156.2	156.2	Enphase	M175-24-240-Sxx	94.50%	94.50%	8
100215.24	Application Withdrawn / Ineligible	2/15/2010	Park City	\$4,952	2.476	100%	220	30	Kyocera Solar	KD205GX-LPU	14	185.2	185.2	SMA America	SB3000US (240v)	95.50%	95.50%	1
100215.26	Application Withdrawn / Ineligible	2/15/2010	Vernal	\$6,000	3.071	100%	180	43	REC ScanModule	SCM 215	18	187.5	187.5	Xantrex	XW6048-120/240-60	91.00%	91.00%	1
100215.39	Application Withdrawn / Ineligible	2/15/2010	Cedar City	\$2,210	1.105	100%	190	22.5	Schott Solar	Poly 220	6	193.9	193.9	Enphase	M-190-72-240-Sxx	95.00%	95.00%	6
110215.60	Waiting List	2/15/2010	Farmington	\$6,000	3.121		180	30	Canadian Solar	CS6P-200M	18	181.6	181.6	SMA America	SB3000US (240V)	95.50%	95.50%	1
110215.61	Waiting List	2/15/2010	Park City	\$6,000	5.152		180	35	REC Solar	REC220AE-US (BLK)	28	191.7	191.7	Fronius USA	IG Plus 6.0-240	96.00%	96.00%	1
110215.62	Waiting List	2/15/2010	Layton	\$4,980	2.489		251	35	REC Solar	REC215AE-US	14	187.2	187.2	Enphase	M-190-72-240-Sxx	95.00%	95.00%	14
110215.64	Waiting List	2/15/2010	Park City	\$6,000	4.698		180	40	SunPower	SPR-225-BLK-U	24	205	205	SMA America	SB5000US (208v)	95.50%	95.50%	1
110215.65	Waiting List	2/15/2010	Park City	\$5,482	2.74		180	35	SunPower	SPR-225-BLK-U	14	205	205	SMA America	SB3000US (240V)	95.50%	95.50%	1
110215.66	Waiting List	2/15/2010	Salt Lake City	\$6,000	6.668		180	34	Canadian Solar	CS5A/240M	39	178.1	178.1	SMA America	SB7000US (240v)	96.00%	96.00%	1
110215.67	Waiting List	2/15/2010	Salt Lake City	\$5,642	2.821		180	35	Canadian Solar	CS6P-230PX	14	211	211	SMA America	SB3000US (240V)	95.50%	95.50%	1
110215.68	Waiting List	2/15/2010	South Weber	\$6,000	8.923		180	40	REC Solar	REC220AE-US	49	191.7	191.7	Enphase Energy	M190-72-240-Sxx	95.00%	95.00%	49
110215.69	Waiting List	2/15/2010	Salt Lake City				170	50	Sunforce	391126	6			Sunforce	253506			1
110215.70	Waiting List	2/15/2010	West Valley	\$5,800	2.769		180	30	SunPower	SPR-315E-WHT-D	10	290	290	SunPower	SPR-3000m (240V)	95.50%	95.50%	1
110215.71	Waiting List	2/15/2010	West Valley	\$5,800	2.769		180	30	SunPower	SPR-315E-WHT-D	10	290	290	SunPower	SPR-3000m (240V)	95.50%	95.50%	1

Project ID	Application Status Notes	App Submittal Date	City	Estimated Incentive	Estimated kW	% of Sunshine	System Orientation	System Tilt Angle (Degree, °)	Module Manufacturer	Module Model	Original App: Module Quantity	Original App. Watts Output	CEC Efficiency	Original App: Module	Original App: Inverter Model	Original App: Inverter CEC Weighted Efficiency %	Invoice: CORRECT CEC EFFICIENCY	Inverter Quantity
110215.72	Waiting List	8/3/2010	Salt Lake City	\$4,710	2.355			20	Yingli Green Energy	YL230P-29b	12	206.6	206.6	Enphase	M-190-72-240-Sxx	95.00%	95.00%	12
110215.73	Waiting List	11/22/2010	Holladay	\$6,000	3.022		180	22.6	Conergy	Conergy Black 235PA	15	211	211	Enphase	M-190-72-240-Sxx	95.50%	95.50%	15

Table 7. 2010 Program Non-Residential Participants

Project ID	City	Incentive	Total system size (kW)	System kW eligible for incentive	Total System Cost (\$)	\$/watt - total	% of Sunshine	System Orientation	System Tilt Angle (Degree, °)	Module Manufacturer	Module Model	Module Quantity	Module CEC Rated Watts Output	Inverter Manufacturer	Inverter Model	Inverter CEC Weighted Efficiency %
NR9010520	Bountiful	\$9,852.00	4.952	4.952	\$49,469.24	\$9.99	100	180	35	Schott Solar	Poly 225	26	198.4	SMA America	SB7000US (240V)	96.0%
NR100215.02	South Jordan	\$22,518.00	11.259	11.259	\$71,521.53	\$6.35	100	180	30	REC ScanModule	SCM 225	60	196.5	Enphase Energy	M210-84-208-Sxx	95.50%
NR100215.03	Genola	\$24,666.00	12.333	12.333	\$65,718.50	\$5.33	100	180	33	Mitsubishi Electric	PV-UD180MF5	80	161.6	SMA America	32 @SB4000US (240v) & 48 @ SB3300U	94.5% & 96%
NR100215.04	Sandy	\$13,322.50	6.661	6.661	\$69,000.00	\$10.36	100	180	30	Suntech	STP175S-24/Ab-1 Black	44	157.7	SMA America	SB7000US (240v)	96.00%
NR100215.05	Taylorville	\$30,000.00	21.105	15	\$273,000.00	\$12.94	100	180	15	Suntech	STP175S-24/Ab-1 Black	144	157.5	SMA America	SB7000US (240v)	96%
Total:		\$100,358.50	56.31		\$528,709.00											

Table 8. 2010 Program Non-Residential – Withdrawn and Waiting List Participants

COMMERCIAL: Project ID Pg 1.0	App Submittal Date	City	Estimated KW of system	Estimated incentive	Total System Cost (\$)	System Orientation	System Tilt Angle (Degree,°)	Module Manufacturer	Module Model	Module Quantity	Module CEC Rated Watts Output
NR100215.01	2/15/10	American Fork	8.060	\$16,120		180		Canadian Solar	CS6-230P	40	211.0
NR100215.06	2/15/10	Magna	15.229	\$30,000.00				Sharp	NU-U230F3	77	207.1
NR100215.07	2/15/10	Salt Lake City	8.595	\$17,190.00				REC ScanModule	SCM 215	48	187.5
NR100215.08	2/15/10	Salt Lake City	4.543	\$9,087.00				Canadian Solar	CS6P-200	26	183
NR100215.09	2/15/10	Salt Lake City	11.723	\$23,447.52				Solyndra	SL-001-182	72	171.4
NR100215.10	2/15/10	Kamas	9.483	\$18,966.52		180	25	Solar World	SW225 Mono	48	205.8
NR100215.11	2/15/10	Salt Lake City	21.565	\$30,000.00		180	15	Suntech	STP175S-24/Ab- 1 Black	144	156
NR100215.12	2/15/10	Salt Lake City	2.053	\$4,106.69		180	35	Canadian Solar	CS6P-230	11	202.9
NR100215.13	2/15/10	Salt Lake City	2.519	\$5,038.00		180	35	Canadian Solar	CS6P-230	13	202.9
NR100215.14	2/15/10	American Fork	4.900	\$9,801.86		175	30	REC Solar	210AE-US	29	182.7
NR100215.15	2/15/10	Salt Lake City	14.955	\$29,910.60		180	28	SunPower	SPR-315E-WHT- D	54	290
NR100215.16	2/15/10	Salt Lake City	6.222	\$12,445.95		180	42	Schott Solar	Poly 220	33	198.5
NR100215.17	2/15/10	Ogden	24.054	\$30,000.00		170	40	Canadian Solar	CS6P-230P	120	211
NR100215.18	2/15/10	Midvale	14.950	\$29,900.28		180	41	REC Solar	REC230AE-US	78	200.7
NR100215.19	2/15/10	Sandy	14.976	\$29,952.00		180	15	Suntech Power	STP175S-24/Ab- 1 Black	100	156
NR100215.20	2/15/10	Salt Lake City	17.971	\$30,000.00		180	15	Suntech Power	STP175S-24/Ab- 1 Black	120	156
NR100215.21	2/15/10	Ogden	7.977	\$15,954.40		180	0	Solyndra	SL-001-173U	50	162.8
NR100215.22	2/15/10	Salt Lake City	24.377	\$30,000.00		180	41	REC Solar	REC-210-AE-US	144	178.2

Appendix 2 - System Output Correlation for Selected Sites



Date: February 8, 2011
To: Travis Tanner, Rocky Mountain Power
From: Jeff Cropp, Danielle Kolp, Brian Hedman
Re: Methodology for Comparison of Estimated and Metered PV Data

Cadmus analyzed metered data for a selection of photovoltaic (PV) installations incented by Rocky Mountain Power in 2009 and 2010. Metered data for the PV systems was not available for all systems for the entire year, so the impact the systems have in reducing annual energy use and peak demand was estimated using the PVWatts Solar Calculator (PVWatts). PVWatts estimates energy production for each installed system based on the system's location, capacity, tilt, and orientation using solar irradiance data on an hourly basis from a typical meteorological year (TMY).

Cadmus received hourly interval metered data for ten of the installed sites and compared these records to the PVWatts data. Three additional sites were analyzed using self-reported monthly production meter readings. This document outlines the methodology used to determine whether the estimated data was representative of actual system performance. The comparison involved four steps:

1. Identify the months within the metered dataset where the PV system was operational.
2. Convert the metered data and estimated data to common units and time interval.
3. Compare the estimated data to the metered data.
4. Produce a weighted realization rate.

Customer accounting data from Rocky Mountain Power's CSS system was also reviewed for this analysis. Our analysis found that the CSS data and the metered data were in general agreement over the course of an entire year, but differed month to month. The difference is likely due to the CSS data being on a billing cycle basis whereas the metered data is on a calendar month data. The final analysis relied solely on the metered data.

Each step is discussed in more detail below.

Step 1: Identify Months Where the PV System was Operational

The metered generation data produces a kW reading once an hour or lists “No Read” when the meter was not operational or the system had not yet begun producing electricity. This produced a clear indication of the number of months that the system was fully operational. The following Table 1 shows how many months of valid meter data were available for the ten metered systems. The three self-reported readings were operational the entire year.

Table 1. Number of Customers with Valid Monthly Data

Number of Valid Months	Number of Customers
8	1
9	2
10	2
11	1
12	4

Step 2: Convert to Common Units and Time Interval

PVWatts data is provided in Watts for each hour of the year. These hourly values were summed per month then divided by 1,000 to convert to kilowatt-hours (kWh).

$$kW_{\square} = W_{\square\text{ourly}} \times \frac{1 \text{ kW} \square 1,000 \text{ W} \square}{1,000}$$

The generation data was reported as kW per hour, so a simple sum per month produced comparable values. The self-reported data was already aggregated into kWh per month.

Step 3: Compare the Estimated Data to the Metered Data

The next step was to compare the estimated data generated using PVWatts to the metered data. This was done for thirteen customers with sufficient data to analyze. Two different methods were used to compare the data. The first was to plot the monthly kWh data side-by-side so it could be visually compared. The second method was to calculate the percent difference between the aggregated monthly energy production for the metered and estimated data to produce a realization rate for each site. The realization rate is calculated as the sum of valid monthly generation over the sum of the *same* months of PVWatts data.

Step 4: Calculate Weighted Average Realization Rate

Table 2 shows the thirteen sites from which the overall realization rate was computed. The total yearly output from PVWatts was multiplied by the site realization rate to produce the projected total output. The thirteen site estimates and actual outputs were summed. The overall weighted average realization rate was computed to be 108%. The individual site realization rates ranged from 82% to 120%, which is neither uncommon nor unexpected.

Table 2. Estimated and Projected Output, and Realization Rates

Customer ID	Data Type	PV Watts Estimate (kWh)	Actual Output (kWh)	Realization Rate
26736	Meter	6,249	5,937	95%
26737	Meter	4,750	4,513	95%
42267	Meter	5,093	5,755	113%
42265	Meter	3,731	4,477	120%
26754	Meter	2,216	2,482	112%
26753	Meter	3,091	2,875	93%
26746	Meter	19,303	21,619	112%
26747	Meter	4,011	4,332	108%
26748	Meter	13,503	16,069	119%
42266	Meter	9,530	10,483	110%
Cadmus 01	Self-Report	4,590	5,049	110%
Cadmus 02	Self-Report	3,964	4,440	112%
Cadmus 03	Self-Report	4,790	3,928	82%
Total		84,821	91,957	108%

Graphical Examples of Generation and PV Watts Monthly Data

Figures 1 and 2 show examples of monthly generation data compared with PVWatts estimation data. Several commonalities were found during this comparison analysis. Of note were:

- Most overall metered or reported production was higher in aggregate than the PV Watts estimate.
- Generation peaks tended to be higher than PVWatts during summer months.
- October through December generation tended to fall off at a faster rate than estimated by PVWatts.

Figure 1. Customer ID 26737 with Metered Data

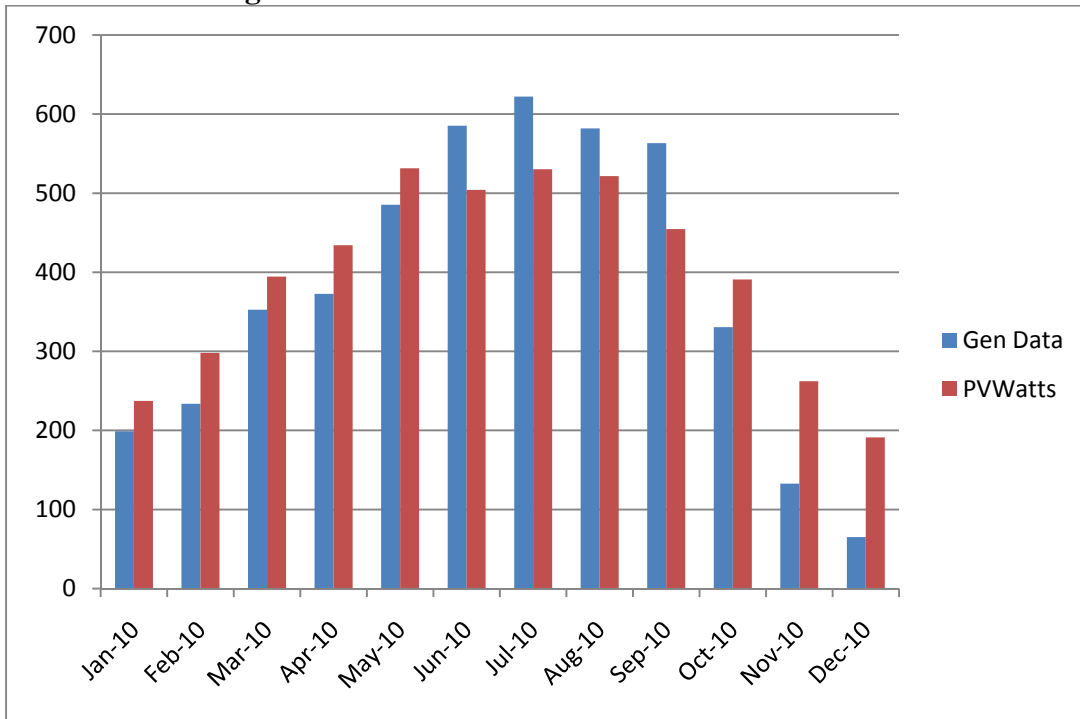
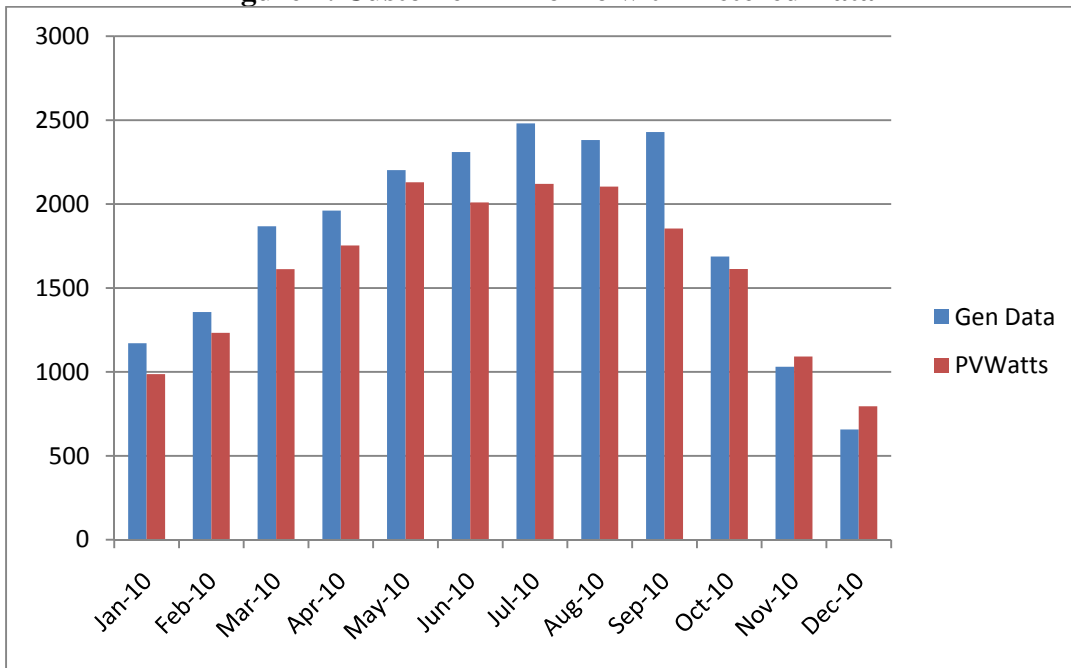


Figure 2. Customer ID 26746 with Metered Data



Confidential Attachments A, B, C and D
Provided On Enclosed CD

Attachment E

CONFIDENTIAL INFORMATION CERTIFICATE

IN ROCKY MOUNTAIN POWER ADVICE NO. 11-035-__

I have reviewed the Public Service Commission of Utah Rule R746-100-16 with respect to the review and use of confidential information and agree to comply with the terms and conditions of said rule in Rocky Mountain Power Advice 11-035-__.

Signature

Name (Type or Print)

Employer or Firm

Business Address

Party Represented

Date Signed