Rocky Mountain Power

Solar and Energy Storage Technology Program

Sustainable Transportation and Energy Plan

Utah Innovative Technologies Team

1 Executive Summary

As part of the Sustainable Transportation Energy Plan, a Utah statute, Rocky Mountain Power (the Company) should authorize $5 million to install energy storage technology to resolve voltage issues on the [redacted] transmission line. An additional $2 million from Blue Sky community project funds will be utilized to install a large-scale, company-owned solar project. [redacted] substation is fed radially from [redacted] and all capacitive voltage correction factors have been exhausted. The storage technology will be installed on the [redacted] distribution system and will defer or eliminate the need for traditional capital investments in the form of upgraded poles, wires and/or substations estimated at $8-14 million.

2 Purpose and Necessity

Historically, during summer peak loading periods, the [redacted] transmission line voltage drops to 0.92 per unit of the nominal voltage and is forecasted to drop below the required ANSI standard[1] of 0.90 per unit by 2019. Rocky Mountain Power consistently implements reliability and power quality enhancements on its transmission and distribution system and adheres to the standards established by ANSI for both normal and emergency operation. These operating thresholds are designed to protect company and customer equipment from inadvertent miss-operation or damage due to voltage excursions.

To correct the voltage issues experienced during peak loading conditions, a stationary battery system will be connected to [redacted] the 12.5 kilovolt distribution circuit(s) that are connected to [redacted] substation. This reduces the loading on the power transformer, improves voltage conditions and will mitigate costs associated with connection on the [redacted] kilovolt bus at the substation. The system will be sized to handle the initial voltage corrections and be expandable to provide additional correction as load growth in the area creates further voltage excursions. The initial battery system will be installed with the appropriate protection and control, including remote communications, and will meet the following requirements:

Energy Storage

Energy Requirement ..... Five (5) megawatt-hours

Solar

System Size ..... 650 kilowatts

Site ..... 5–7 acres (dependent on selected system)

[1] American National Standard for Electric Power Systems and Equipment [Available online for purchase]: https://www.nema.org/Standards/Pages/American-National-Standard-for-Electric-Power-Systems-and-Equipment-Voltage-Ratings.aspx

3 Benefits

- The loading on the [redacted] kilovolt power transformer at [redacted] substation will be reduced thereby ensuring the line voltage on the [redacted] transmission line does not drop below 0.90 per unit.
- The company is in the process of striving to make the grid more progressive and this program will enable a greater understanding of these innovative solutions.
- Provides high-speed reactive power support to ensure load rejection in the area does not impact voltage levels on the transmission system.
- Reduces loading on the [redacted] substation power transformer, improves transmission line voltage and will defer the traditional capacity increase capital investment beyond fifteen years when using present growth rates in this area.
- Enables the Company to get first-hand operational experience with control algorithms and efficiency levels associated with energy storage combined with solar. This gained experience will prepare the company in advance of large scale integration of such technology/projects that are now becoming readily available options for customers as price declines.
- Enables the Company to become familiar with and utilize innovative technologies to provide customers with solutions to power quality issues.
- Opportunity to meet Blue Sky customer requests for "steel in the ground" physical solar projects.

4 Public Interest Justification

- The Company is expanding renewable energy and innovative technology options to improve service to customers.
- The Company is taking steps to prepare for an enhanced deployment of clean energy sources for its customers.
- Greenhouse gasses can be avoided through the use of solar.
- Better reliability and voltage profile as the proposed solution provides transmission support by providing real and reactive power.
- A "stepped in" approach is cost effective as the Company expects incrementally lower cost storage systems in the future.
- Savings for customers related to deferring capital investments for adding transmission capacity and installing transmission equipment. Compared to the alternative solutions, the proposed solution provides the highest internalized benefit i.e. a financial benefit that can be 'captured' or 'realized' in the form of deferred cost for transmission system upgrades.
- Energy arbitrage considering the energy storage device is expected to recharge during off-peak hours which often coincides with lower priced, high generation periods from the Company's wind generation plants or during midday time periods when solar generation is available.

- Improved utilization of grid assets leading to cost savings for customers.
- Reduction in transmission congestion during summer peak loading periods.
- Utilizing Blue Sky community project funds aligns with the goals of the program to support the greater use of renewable energy. This project could help prove the use of more renewable energy options to meet customers' infrastructure needs.

5 Legislative Compliance with SB115

The proposed solution for the [redacted] system meets the legislative intent of SB115 54-20-105-1(h) that pertains to "any other technology program" in the best interest of the customers in the state of Utah. This project falls under the STEP's discretionary allotment of funds as part of the Utah Innovative Technology category.

6 Alternatives Considered

Alternatives considered that resolve the critical issues/needs:

Alternative #1 – Rebuild the Transmission Line

Description
Rebuild the [redacted] transmission line using a larger, lower impedance conductor.

Advantages
1) Increased transmission capacity
2) Improved voltage profile
3) Reduction in transmission congestion during summer peak loading periods

Disadvantages
1) More expensive than proposed solution
2) Potential need for additional right-of-way requirements
3) Transmission line permitting risk in local jurisdictions
4) Public resistance to fixed-width easements
5) Temporary construction impacts

Block estimate
$8,000,000

Alternative #2: Build a new transmission substation

Description

Build a new transmission substation to connect the [redacted] transmission line to the [redacted] transmission line.

Advantages

1) Increased transmission capacity
2) Better reliability and power quality
3) Potential to add more transmission lines in future
4) Enable higher levels of renewable energy

Disadvantages:

1) More expensive than proposed solution
2) Permitting issues for land use
3) Permitting risk for new substation
4) Detailed environmental and engineering studies required to understand feasibility
5) Temporary construction impacts

Block estimate

$14,000,000

Alternative#3: Install energy storage system

Description

Install an eight megawatt-hour energy storage battery.

Advantages

1) Least cost solution
2) Expected customer acceptance for considering new technology alternatives
3) Enhanced brand equity for the Company
4) Smaller geographical footprint required
5) Allows the testing of innovative sustainable solutions to meet our customers growing needs.

Disadvantages

1) Does not increase the Company's renewable energy footprint
2) Temporary construction impacts

Block estimate

$7,400,000

7 Purpose and Necessity – Risk Analysis

Company impacts without this project/solution:

- In the absence of the proposed solution, the Company will need to deploy higher cost and non-innovative technologies to maintain the voltage levels as required during peak summer loading conditions. Based on the projected load growth for the [redacted] transmission line, potential voltage issues could be experienced as early as 2019.

Customer impact without this project/solution:

- A higher cost solution with non-innovative technology will impede any efforts to learn from implementing progressive grid technologies.

8 Major Project Milestones

- Anticipated project start date: January 2017
- Final in-service date: December 2020

This project has multiple in-service dates related to installation of the energy storage equipment on the [redacted] distribution system. The installations will be scheduled according to need based on the loading profile and forecasted load growth for the area. Additional work will include installing the control algorithms, protection and control schemes and communication network to ensure the system is integrated to the Company's distribution system in a safe, efficient and reliable manner.

The timing of the project deployment is estimated as follows:

Year	System Size	Estimated Cost
2017	Purchase property and Owners Engineering (OE) expense	$0.5 million
2018	2 MWh- Battery	$1.6 million
2018	650 kW- Solar	$1.95 million
2018	Interconnection Costs	$0.75 million
2020	3 MWh- Battery	$2.2 million
Total Costs		$7.0 million

The project team is aware of the need to record the assets as technically complete in SAP as the assets are put into service. The Work Breakdown Structure (WBS) will be setup accordingly.

9 Environmental Permit Requirements and Community Permits

The Company will adhere to all national, state and local environmental regulatory requirements pertinent to installation of any distributed energy resource equipment. It is important to note that acquisition of land and any subsequent environmental permits might impact the timeline and budget of the project. The Company will also review the general plan for the [redacted] area and will comply with any local land use permitting requirements.

10 Blue Sky Program Funding

In 2018, the Blue Sky program may be able to provide $1.95 million for the Rocky Mountain Power-owned solar generation facility. These Blue Sky community project funds will pay for 100 percent of the solar installation. The funds will not be used to "buy down to competitive rates" due to the accounting complexity associated with this concept. Per the Utah Blue Sky tariff schedule 70, the Company will use Blue Sky funds under the Qualifying Initiatives section of schedule 70, item 2 which reads "Funding for research and development projects encouraging Renewable Energy in order to accelerate marketability of Renewable Energy technologies." The Company will not have a contribution towards this project thereby requiring the Renewable Energy Credits to be retired by the Company on behalf of the Blue Sky customers in Utah. While the Company will not earn a return on the asset, the funds will be treated similarly to contributions in aid of construction and the energy created by this Blue Sky program funded project will be supplied to all Utah customers. This solar facility will be a maximum of 650 kilowatts in capacity. The Operations Management Administration & General (OMAG) expense created by this asset will be passed through to Utah customers as it is maintained over its useful life. Therefore the only revenue requirement associated with the asset will be expenses related to OMAG.

Benefits of Company-Owned

Rocky Mountain Power does not typically own solar resources due to the Investment Tax Credit disadvantages for investor-owned utilities. However, the ownership of this project will provide first-hand experience dealing with utility-scale solar combined with an energy storage system that provides direct benefit to the company's customers. Furthermore, an increasing number of customers want to see renewable energy programs that support "steel in the ground," and this project provides Blue Sky customers with the opportunity to support this.

11 Procurement Process

The Company intends to competitively bid this project. As part of the process, the Company will issue a request for information (RFI) to a wide range of potential suppliers to gauge their interest in the project and assess their qualifications to provide quality products and/or engineer, procure

and construct (EPC) the project. The RFI will be issued through the company's Ariba system. For the RFI, the company will reach out to known companies and energy storage trade groups to reach potential suppliers. From the RFI responses a list of preferred suppliers and select qualified EPC suppliers will be developed.

The request for proposal (RFP) will be issued to the selected EPC bidders through the Ariba system. RFP responses will be evaluated in the following areas:

- Technical feasibility to meet specified requirements
- Safety & environmental considerations
- Financial health
- Lifetime cost of ownership (capital, O&M, etc.)
- Warranty terms

The desired result of the RFP process is to acquire a quality system that provides reliable electricity at the best value for customers.

The Company may acquire the services of an owner's engineer (OE) under a separate contract. The OE will be responsible for development of technical specifications for battery energy storage systems (BESS) and integration of a BESS with solar generation, assisting in evaluating proposals and ensuring the EPC meets the specifications. The OE will be selected by the Company based on expertise on utility scale energy storage and experience in the PacifiCorp territory.

The following table shows the expected timeline of the RFP process.

Action	**Start date**	**Completion date**
Select OE	August 2016	December 2016
Develop Specifications	January 2017	May 2017
Issue RFI	May 2017	June 2017
Select bidders	July 2017	August 2017
Issue RFP	August 2017	September 2017
Evaluate bids	October 2017	November 2017
Award the project	November 2017	December 2017
Project construction	January 2018	June 2018 and June 2020

12 Program Closure, Retirement and Removal Information

In 2021, the Company will report back to the Utah Public Service Commission regarding lessons learned. If it is necessary to report more often to comply with the STEP statute or other reporting requirement, the Company will comply with those requirements. Additionally, the Company will include in the annual reporting to the Utah Public Service Commission the accounting and performance of the Blue Sky solar project.

13 Project Delivery Risk Factors

The project will be managed to mitigate typical project risks (design and construction resources, permitting material deliveries, weather, etc.) as it applies to scope, schedule, and budget. Appropriate documentation will be created, tracked and communicated to properly manage the project. The appropriate risk mitigation measures will be identified and resolved in the project development phase.

A few critical and unusual project risk factors have been identified that will need special attention in the project development phase. There are risks associated with:

- Land acquisition and related permitting and interconnection issues.
- Any future changes in load profile, load shape and forecasted load growth will require additional distributed energy resource infrastructure, thereby impacting cost and timeline of the overall project.
- Public acceptance to install solar panels and multiple 40-feet containers of energy storage devices due to aesthetic concerns.
- The Company does not have any prior experience of interconnecting a utility-scale project that operates a combination of solar and energy storage device.
- Future availability of better alternative technology for lower costs.
- In the event the existing Blue Sky solar project funding fails to deliver, the Company may need to rely on additional STEP funds for the solar portion of the project.

14 Target Costs

Costs	Prior Years	2017	2018	2020
10 Year Plan Budget:-STEP discretionary funding	N/A	$500,000	$4,300,000	$2,200,000
Blue Sky Funding	N/A	N/A	$1,950,000	N/A
APR (Gross):	N/A	$500,000	$2,350,000	$2,200,000
- Reimbursements:	N/A	N/A	N/A	N/A
- Contingency:	N/A	N/A	N/A	N/A
APR (Net):	N/A	$500,000	$4,300,000	$2,200,000

15 Accounting Issues or Regulatory Recovery Issues

All expenses towards this project will be recovered through the accounting workflow setup for the Utah Innovative Technologies under the Sustainable Transportation and Energy Plan. For detailed information, refer the overarching Utah STEP Accounting document. In addition, because the Utah Blue Sky program will have accrued $2 million from Blue Sky customers, the accounting treatment to acquisition of the asset will be the same as the STEP accounting treatment.

16 Financial Analysis

It is recommended to spend $7.0 million to defer traditional capital investment for resolving voltage issues on the [redacted] transmission line using energy storage connected to the [redacted] 12.47 kilovolt distribution system.

Alternative #1 – Rebuild the transmission line using a low impedance conductor.
Estimated cost $8.0 million.

Alternative #2 – Rebuild a new transmission substation to connect the [redacted] transmission line [redacted] transmission line.
Estimated cost $14.0 million.

Alternative #3 - Install an 8 MWh energy storage device
Estimated cost $7.4 million.

The financial analysis was based on the following assumptions:

Project	2017	2018	2019	2020	Total

Recommended Solution (Battery + Solar)	$500,000	$4,300,000	--	$2,200,000	$7,000,000
Blue Sky Funds for Solar	--	*$1,950,000*	--	--	
STEP Funds for Battery + Interconnection	--	*$2,350,000*	--	*$2,200,000*	
Property Costs	*$100,000*	--	--	--	

Alternative #1 (Rebuild line)	$4,000,000	$4,000,000	--	--	$8,000,000
Alternative #2 (Circleville Sub)	$7,000,000	$7,000,000	--	--	$14,000,000
Alternative #3 (Battery Only)	$100,000	$2,500,000	--	$4,800,000	$7,400,000

- The financial analysis was completed over 15 years.
- Solar assets are depreciated over 5 years for tax and 25 years for book.
- Battery assets are depreciated over 20 years for tax and 20 years for book.
- Distribution assets are depreciated over 20 years for tax and 50 years for book.
- Land is depreciated over 0 years for tax and 0 years for book.
- Bonus depreciation of 40% applies to all assets placed in-service in 2018.
- All assets are allocated to Utah.
- The in-service date for assets with capital spend in 2017 and 2018 is June 2018.
- The in-service date for assets with capital spend in 2020 is December 2020.
- Battery OMAG costs were estimated for a Li-ion battery in Garfield County, Utah. The annual OMAG is approximately $16K.
- Annual solar OMAG is approximately $22K.
- Annual OMAG dollars for Alternatives #2 & #3 are 1% of the project capital dollars.
- The financial analysis results presented below are based on the project's revenue requirement. This is based on a capital structure of 49% debt and 51% common with a 5.21% debt and a 9.74% common rate.
- A 1.29% Utah property tax rate was used.
- A 6.57% discount rate was used.
- A 37.95% tax rate was used.

Project	OMAG	PVRR of OMAG	Capital Cost	Net Present Value
Recommended Solution (Battery Only)	$448,558	($313,509)	$7,000,000	($4,014,907)
Alternative #1 (Rebuild line)	$920,000	($632,501)	$8,000,000	($4,664,422)
Alternative #2 (Circleville Sub)	$1,610,000	($1,106,876)	$14,000,000	($8,162,738)
Alternative #3 (Battery + Solar)	$189,408	($132,441)	$7,400,000	($4,071,450)

17 Procurement and Project Delivery Strategy

- In order to satisfy business requirements, ensure best value, and minimize risk, the initial project shall be procured through a competitive engineer/procure/construct bid process.
- Project specifications shall be developed in accordance with applicable engineering specifications and standard designs.
- Bidders shall be screened to meet credit and procurement requirements. This process will be managed by the Company's project management department.
- Project delivery strategy to be determined by project team.
- The community outreach plan that leverages the benefits of this solution will include;
- A regional business manager to handle local community outreach.
- Company external communications will be managed by the Company's external communications team.
- A key stakeholder matrix will be created with assigned responsibilities to ensure that each critical contact is reached regarding the benefits of the solution.
- Social media will track the kick off, delivery and deployment of the solution as well.
- Customer and community outreach plan is provided in appendix C.

18 Recommendation

- Research and identify the lowest cost, best fit energy storage technology pertinent to this project
- Purchase a ten acre parcel (potentially less) of flat land in the [redacted] area in FY 2017
- Install a 2 megawatt-hour battery in FY 2018
- Install a 650 kilowatt ground-mounted solar in FY 2018
- Install a 3 megawatt-hour battery in FY 2020
- Interconnect the solar and energy storage plant to [redacted]

[redacted] distribution circuits

- Install all necessary equipment, including advanced metering, at [redacted] substation to accommodate the solar and energy storage projects

APPENDICES

- Appendix A – Engineering analysis
- Appendix B – Potential Site
- Appendix C – Communication Plan

APPENDIX A – ENGINEERING ANALYSIS

Executive Summary

The engineering analysis for the [redacted] project includes studying distributed energy resource solutions for a voltage-related issue. The study demonstrated that energy storage or energy storage combined with solar has the potential to provide the most cost effective solution when compared with traditional solutions.

Scope

The objective of the technical study is to assess a viable distributed energy technology that will offset the need for a traditional infrastructure solution to solve potential voltage problems on the [redacted] transmission line. The study included identifying and potential limitations or barriers to the solution including legal, regulatory, physical or operational constraints and compliance with all local, state and federal codes.

Technical Study

Site Selection

The [redacted] substation is a [redacted] kilovolt substation with one power transformer rated at [redacted] MVA. [redacted] distribution feeders [redacted] are connected to the substation. In 2015, the summer peak loading on the [redacted] substation transformer was [redacted] MVA. Based on available loading information for the past five years, the forecasted load growth is established at 1.8%.

Based on available data, during peak summer loading conditions, the [redacted] transmission line voltage will drop to 0.92 per unit of the nominal voltage and is forecasted to drop below 0.90 per unit in 2019.

Traditional Solution

The traditional solution to the voltage issue on the [redacted] transmission line is to either rebuild portions of the [redacted] transmission line using lower impedance conductors or build a nearby [redacted] substation. Both of the solutions are higher cost considering capital required to purchase, install and operate the necessary solar/energy storage equipment.

Distributed Energy Resource Analysis

Loading Analysis

Given the objective of maintaining the loading level on the [redacted] substation transformer at or below [redacted] megawatts, following the distributed energy resource implementation, a loading analysis was performed to quantify the needed resource. Figure 1 shows the substation loading recorded for 2015 as well as forecasted loads for FY 2034.

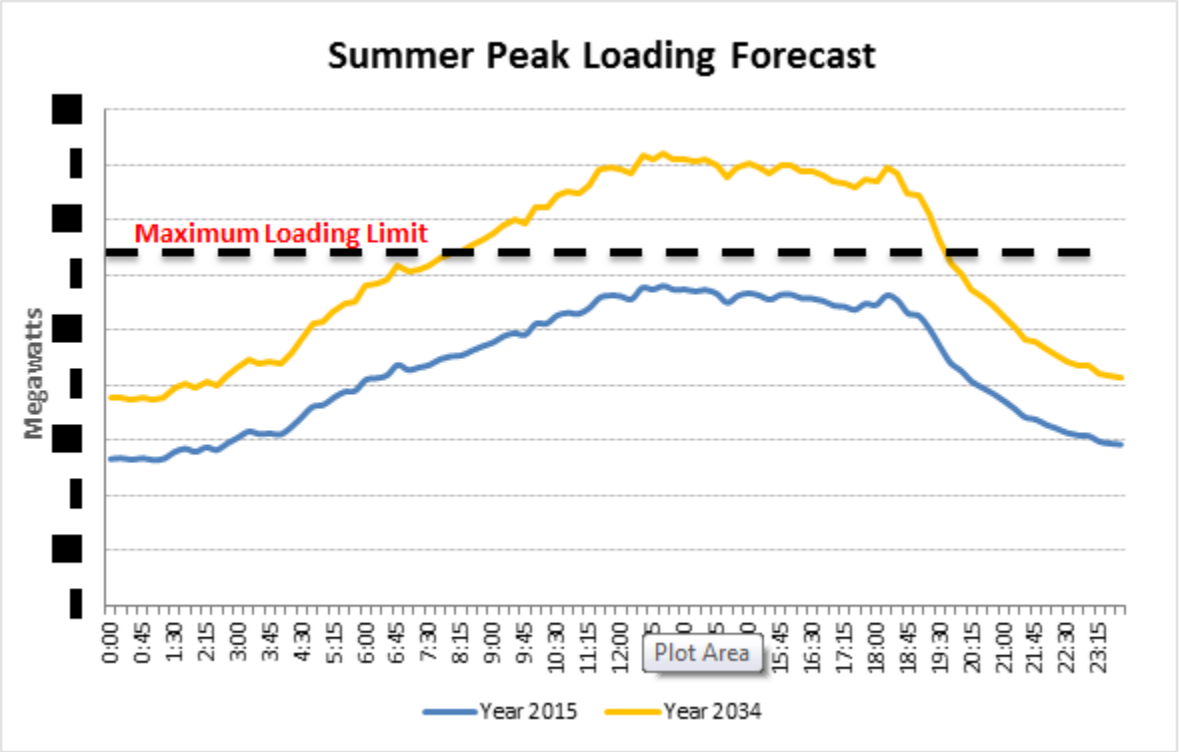

Figure 1: Summer peak loading forecast for [redacted] substation transformer

Distributed Energy Resource Technology Evaluation

The distributed energy resource analysis began with an evaluation of technologies that could feasibly attain the objective set forth in this study. Those evaluated were central energy storage and central energy storage combined with solar.

Energy Storage

Centralized energy storage is a feasible resolution/deferment to the [redacted] transmission line voltage issue. The technology and control systems are available for energy storage to be able to discharge to offset the requirement, and recharge during light loading periods. A 8 megawatt-hour installation will be required to solve the voltage issue until

2034. Figures 2 through 4 illustrates the impact of a 2 megawatt, 8 megawatt-hour energy storage device on the summer peak loading profile and confirms that the energy storage device solves the capacity issue during peak loading period and gets sufficient time to recharge during the light loading period. The evaluation of energy storage consists of sizing the equipment and identifying physical integration requirements.

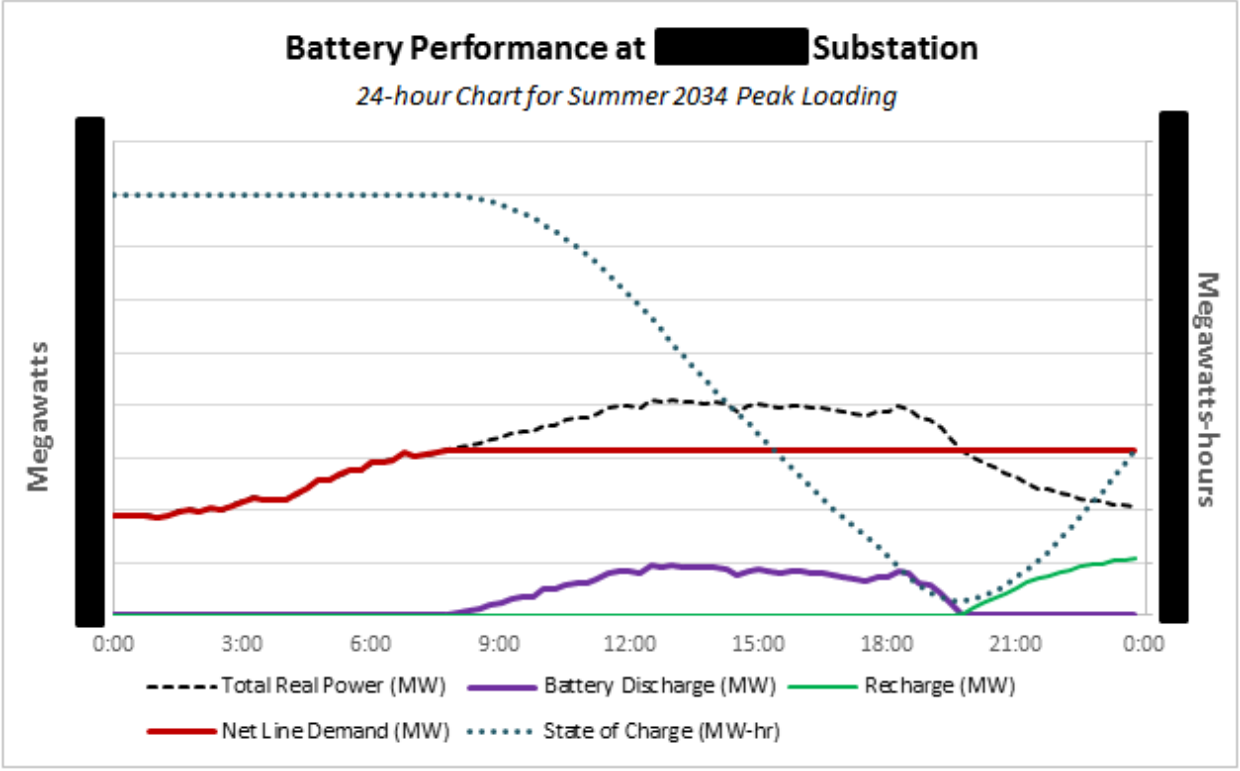

Figure 2: Daily peak loading performance for FY 2034 using 2 MW/8 MWh Battery

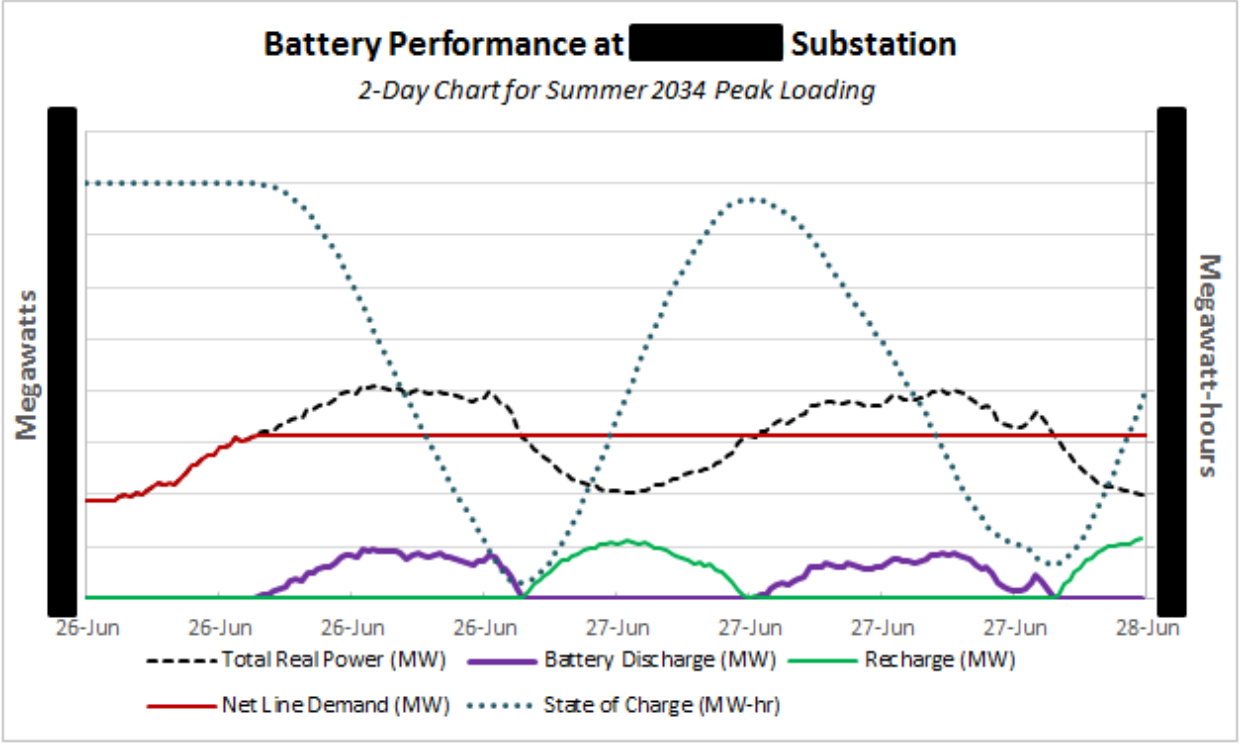

Figure 3: 2-Day peak loading performance for FY 2034 using 2 MW/8 MWh Battery

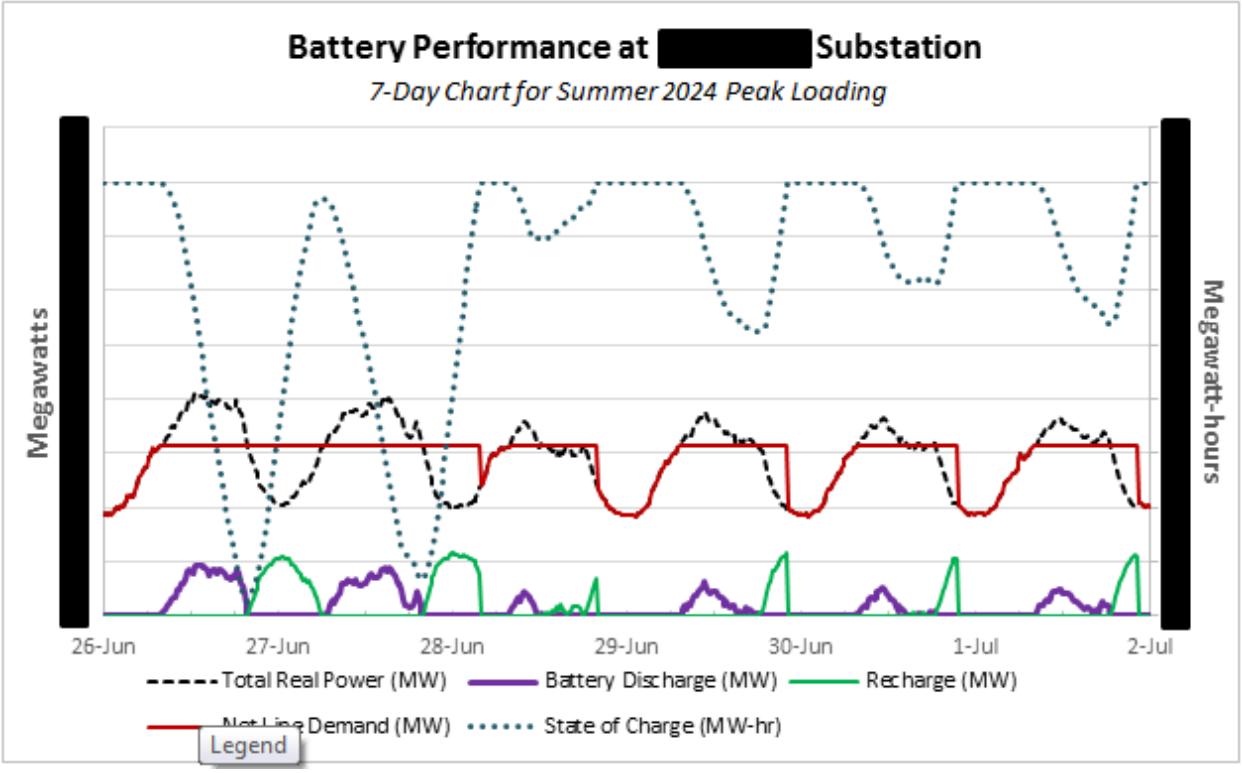

Figure 4: 7-Day peak loading performance for FY 2034 using 2 MW/8 MWh Battery

Solar and Energy Storage

Solar generation in conjunction with energy storage is technically a feasible solution. Using a solar profile based on data collected from the National Renewable Energy Laboratory database, a 650 kilowatt solar combined with a 5 megawatt-hour energy storage installation will help suffice energy and demand requirements until 2034. It is anticipated that this will reduce the size of energy storage required for the project. However, the installation of the solar generation will need an approx. $2 million investment in addition to the land required to setup the solar installation.

While technically feasible, the solar and energy storage combination project is least cost than an energy storage solution however there are several risks associated with the acquiring land and any future scaling of the project. Table 1 describes the basic requirements of the solar and energy storage necessary to defer any traditional investment until FY 2034.

Technical Requirements	
Energy Storage - Energy density requirement	5 megawatt-hours
Solar – Capacity requirements	650 kilowatts
Interconnection Equipment	Protection & Control, Communication, Power Transformer
Site Requirement	5 – 7 acres

Table 1: Technical Requirements for Energy Storage Solution

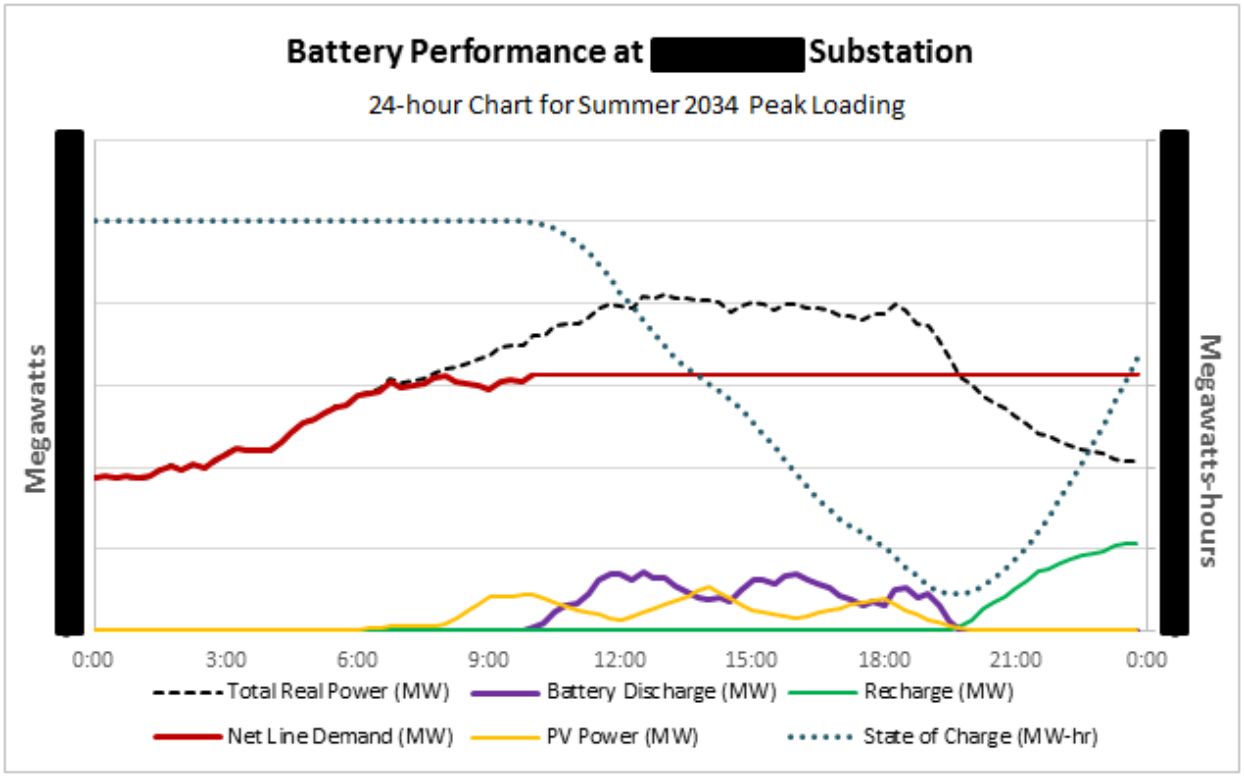

Figure 5: Daily peak loading performance for FY 2034 using 5MWh Battery and 650 kilowatt solar

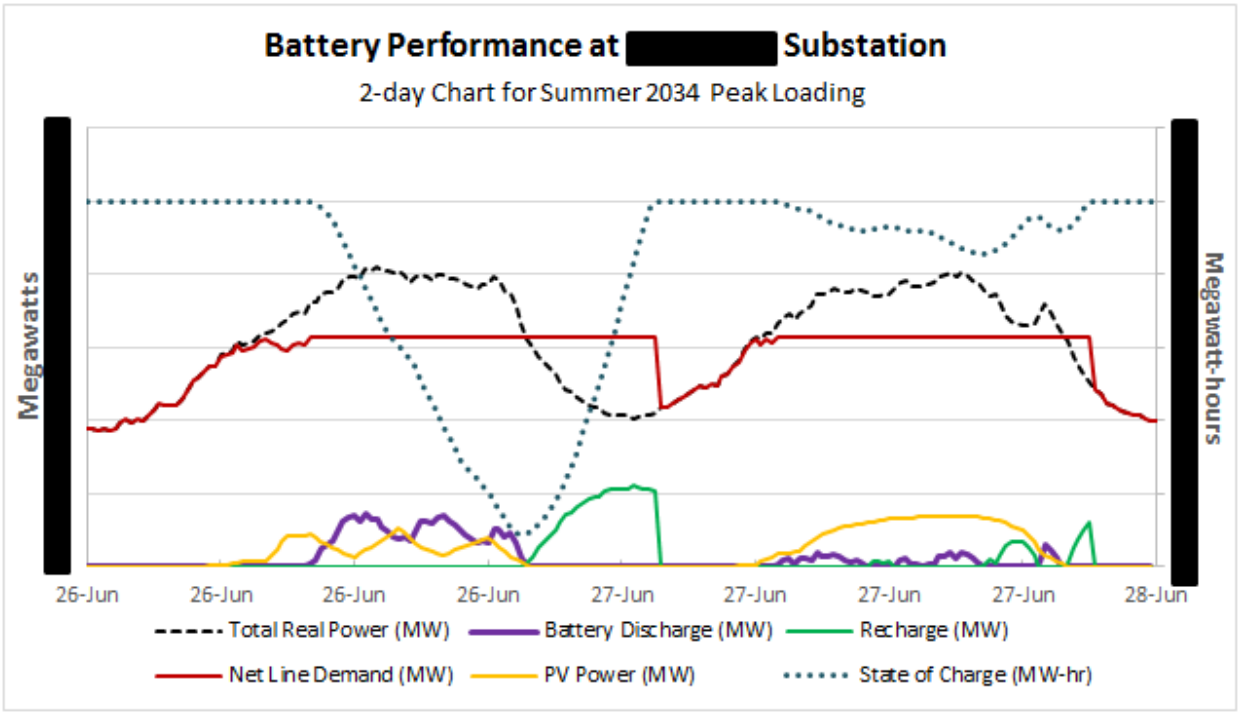

Figure 6: 2-Day peak loading performance for FY 2034 using 5MWh Battery and 650 kilowatt Solar

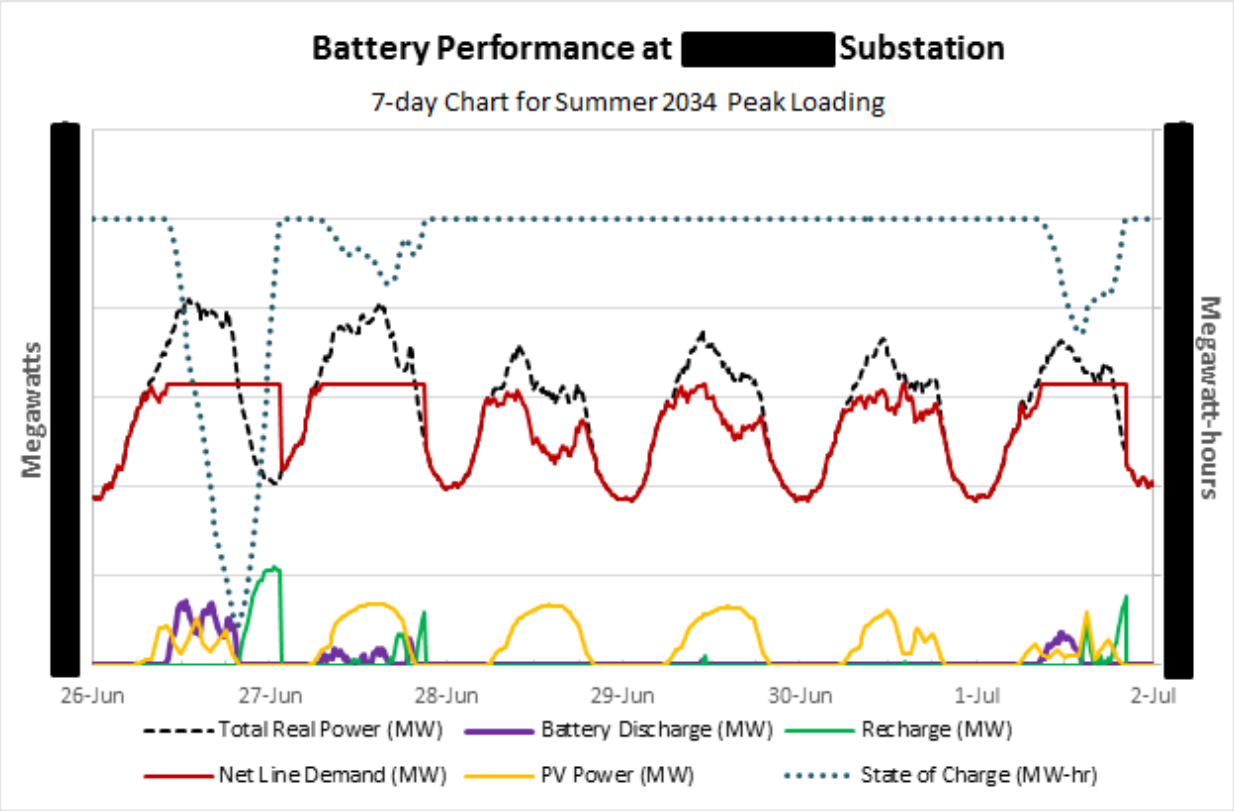

Figure 7: 7-Day peak loading performance for FY 2034 using 5MWh Battery and 650 kilowatt Solar

Risk Assessment

The interconnection of distributed energy resources adds an additional risk element to the operation of the distribution system. The intermittency of solar generation has the potential to exacerbate voltage and capacity issues during peak summer loading conditions. In comparison, an energy storage solution is much less risky considering it is completely unaffected by any weather or climatic intermittency. However, either of the proposed solutions will introduce risks associated with charge-discharge control scheme failures and other potential equipment failures. Load-shedding and load-transfer schemes needs to be developed to ensure any equipment failure will not affect safety, reliability and operability of the transmission and distribution system.

Recommendation

The technical analysis clearly illustrates the feasibility of using a distributed energy resource solution to resolve the voltage issue on the [redacted] transmission line. From a technical standpoint, both energy storage and solar- combined with energy storage solutions help to alleviate loading on the [redacted] substation transformer thereby improving the voltage profile of the transmission line. A detailed financial, engineering and policy analysis will help determine the least-cost best-fit distributed energy resource solution amongst the aforementioned two solutions.

APPENDIX B – POTENTIAL PROJECT SITE

APPENDIX C – COMMUNICATION PLAN

To be customized to specific Utah Innovative Technologies project

Utah Innovative Technologies
2016 Communications Plan

Project Team: Chad Ambrose, Erik Anderson, Ian Andrews, Ryan Anthon, Nathan Bailey, James Campbell, James Johnson, Bob Lively, Douglas Marx, Robert Meredith, Clay Monroe, Lucky Morse, Rohit Nair

Communications Team: Barb Modey, Paul Murphy, Berit Kling

Background:
Utah Senate Bill 115, Sustainable Transportation and Energy Plan, was signed into law March 29, 2016. The legislation establishes a 5-year pilot program to provide mandated funding for electric vehicle infrastructure and clean coal research, and authorizes funding at the commission's discretion for solar development, utility-scale battery storage, and other innovative technology, economic development and air quality initiatives.

SB 115 also authorizes the development of a renewable energy tariff for large customer loads. The legislation also allows PacifiCorp to change its accounting for energy efficiency services and programs from expense to capital and to create a regulatory liability for accelerated depreciation of its coal-fired plants. The legislation also mandates full recovery of Utah's share of PacifiCorp's prudent costs of variable energy. The UPSC previously allowed PacifiCorp to recover only 70 percent of its incremental fuel, purchased power and other variable supply costs through an energy balancing account that are not fully in base rates.

Utah Innovative Technologies (UIT) has identified the following work streams:

- **Solar Incentive:** Deployment of a solar incentive for commercial customers wherein a direct benefit to identified distribution voltage circuits can be derived. These customers will be net energy metered. This benefit is reducing the circuit peak, thereby deferring capital spend and providing a public relations benefit for continuing an incentive program

- **Centralized Battery Systems:** Use of centralized battery systems (CBS) located on identified distribution circuits or substations where in a direct benefit can be achieved. This benefit includes, through the use of solar or grid energy to charge the battery system to be dispatched during circuit peak hours to reduce load on transformer and circuit equipment. This reduction will help defer capital spend on the circuit, may provide improved power quality and gives the utility and opportunity to understand the use of this innovative/emerging technology.

- **Special Pilot Projects:** Identification and targeting of special circumstances that require unique innovative technologies to improve circuit or substation performance. For example, the installation of high-end metering equipment with communications at locations with a high penetration of distributed energy resources. This will help the company better understand the impact of generation resources on loading patterns and other power quality and reliability impacts, if any.

Utah Blue Sky program is available for the Company to use.

- Per the Utah Blue Sky tariff schedule 70, the Company will not have a co*ntribution towards this project thereby requiring* the R*enewable* E*nergy* C*redit*s *to* be retired on behalf of the Blue Sky customers in Utah.
- The Company will use Blue Sky funds under the "Qualifying Initiatives" section of Schedule 70, item 2 which reads, "Funding for research and development projects encouraging Renewable Energy in order to accelerate marketability of Renewable Energy technologies."

The engineering team assigned to this initiative is identifying the most cost-effective and viable approach for implementation. The initiative combines battery storage with Company-owned solar. The solar will be funded by the Utah Blue Sky Solar program.

This communications plan focuses on the UIT initiatives within the larger STEP Communications Plan. It is intended to be a working document that will evolve as UIT initiatives change based on emerging needs, technology available and team evaluation.

Communication Objective:

To gain acceptance and understanding of the UIT project benefits, the use of Utah Blue Sky funds and to position Rocky Mountain Power as an innovative solutions provider to integrate and provide renewable power options.

Target Audience (Stakeholders):

Regulators
Community stakeholders
Regional Business managers
Opinion leaders and elected officials
Media and general public

Communication strategy for community stakeholders:

- Prepare communication materials that are transparent, contain clear facts, and present mutual benefits and opportunities for the identified customers and Rocky Mountain Power.
- Manage the communication with stakeholders to explain why Utah Blue Sky funds are being used for the solar project and how STEP funds are being effectively deployed for the

battery and why using both programs creates a win-win outcome for customers.

Core Messages (customers):

- Rocky Mountain Power is providing options towards a sustainable energy future.
- Rocky Mountain Power's Innovative Technologies initiative will help bring innovative technologies on-line where they are most needed and beneficial to the overall system. This will help hold down rates for all Utah customers by reducing the need for additional infrastructure upgrades.
- Rocky Mountain Power's Blue Sky renewable energy program will help bring new cost-effective solar resources on-line for Utah customers.
- Rocky Mountain Power has identified key electrical circuits in Utah that provide an optimal opportunity for solar resources to reduce demand during peak hours.

Core Messages (regional business managers and other employees):

- Rocky Mountain Power is providing options towards a sustainable energy future.
- Utah Innovative Technologies supports battery storage technologies and solutions.
- Utah's Innovative Technologies initiative combined with the Utah Blue Sky program will help bring renewable resources on-line where they are most needed and beneficial to the overall system. This will help hold down rates for all Utah customers by reducing the need for additional infrastructure upgrades.
- Rocky Mountain Power has identified key electrical circuits in Utah that provide an optimal opportunity for solar resources to reduce demand during peak hours. The company will reach out to community stakeholders and customers served by these key circuits to help them understand the benefits.

Tactics:

Key Audience	Tactic	Timing	Responsible
Regional Business Managers	Atten **chan** UIT a REDACTED – PUBLIC VERSION project	Nov. 2016	Ambrose
Regulators	Company meets early and as often as necessary with regulating bodies to explain the program and benefits.	Sept. 2016	Lively
Interested parties	Update Blue Sky section of Rocky Mountain Power **website** to explain changes, update	Dec. 2016	Modey Kling

	FAQs, etc.		
Blue Sky customers	Create materials for reaching out to Blue Sky customers and local customers in [redacted], Utah	TBD	Kling
Opinion leaders (media government officials, business leaders, community leaders)	Talking points, op-eds, news releases, fact sheets, direct contact with executives, government relations and regional business managers and external communications, **opportunities to proactively communicate the benefits of UIT and Blue Sky.**	TBD	Murphy Kling
General public/press	Monitor social media channels for comments and discussion on UIT and Blue Sky	Ongoing	Murphy Puglia Kling
General employees	Develop an **article for employee newsletters**, and Utah intranet postings	TBD	Zukin
Utah employees	Host a **Power Hour** in SLC about Utah Innovative Technologies	TBD	Ambrose Belmonte
General public/press	After solar projects have been installed; arrange to have ribbon cutting and or photography and **press release; post to website; social media**	TBD	Murphy Kling Puglia

Budget:

Allocate roughly $30,000 per year for funding to cover mailings and collateral materials, photography and other communications.

Evaluation:

- Track ability to attract eligible customers to participate so Rocky Mountain Power can meet generation goals on key circuits in a timely manner;
- Track public opinion and social media activity

This page is intentionally left blank