PacifiCorp - Stakeholder Feedback Form

2019 Integrated Resource Plan

PacifiCorp (the Company) requests that stakeholders provide feedback to the Company upon the conclusion of each public input meeting and/or stakeholder conference calls, as scheduled. PacifiCorp values the input of its active and engaged stakeholder group, and stakeholder feedback is critical to the IRP public input process. PacifiCorp requests that stakeholders provide comments using this form, which will allow the Company to more easily review and summarize comments by topic and to readily identify specific recommendations, if any, being provided. Information collected will be used to better inform issues included in the 2019 IRP, including, but not limited to the process, assumptions, and analysis. In order to maintain open communication and provide the broader Stakeholder community with useful information, the Company will generally post all appropriate feedback on the IRP website unless you request otherwise, below.

Date of Submittal 11/6/2018

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*Organization: Utah Clean Energy

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City: Salt Lake City State: UT Zip: 84103

Public Meeting Date comments address: Click here to enter date. ☒ Check here if not related to specific meeting

List additional organization attendees at cited meeting: Click here to enter text.

*__IRP Topic(s) and/or Agenda Items:__ List the specific topics that are being addressed in your comments.
Customer-sited battery storage incentive program

☐ Check here if any of the following information being submitted is copyrighted or confidential.

☐ Check here if you do **not** want your Stakeholder feedback and accompanying materials posted to the IRP website.

*__Respondent Comment:__ Please provide your feedback for each IRP topic listed above.
Utah Clean Energy requests that PacifiCorp convene a workshop with interested stakeholders well in advance of the 2021 IRP to determine how to model an incentive for customer-sited battery storage in the 2021 IRP.

Battery storage can provide a wide variety of services, some of which benefit individual electricity customers (for example, emergency backup power), and some of which benefit the electric grid (for example, voltage support or transmission and distribution deferral). As the cost of battery storage continues to decline, customer adoption of behind-the-meter energy storage is becoming more popular. Customers who adopt battery storage are primarily interested in emergency backup power, increased self-consumption of solar electricity, and reducing their energy bill costs. Customer-sited battery storage can also be used to provide services that benefit the electricity grid as a whole; in fact, battery storage can provide the widest variety of services when it is located behind-the-meter, as opposed to on the transmission or distribution system.[1] However, customers are unlikely to configure their battery storage to provide services to the grid unless they are given a price signal to do so. Appropriately designed incentives for battery storage will encourage customer adoption of battery storage in a way that also reduces costs for all electricity customers.

[1] Rocky Mountain Institute, "The Economics of Battery Energy Storage", October 2015. https://rmi.org/wp-content/uploads/2017/03/RMI-TheEconomicsOfBatteryEnergyStorage-FullReport-FINAL.pdf. Page 6.

* Required fields

Utah Clean Energy provided stakeholder feedback forms and comments during the 2017 IRP process recommending that PacifiCorp model customer-sited battery storage programs and incentives to determine whether such a program or incentive would reduce long-term costs for all ratepayers. We appreciate that PacifiCorp expressed a willingness to consider how this might be done for the 2019 IRP.[2] We recommend that PacifiCorp convene a workshop with interested stakeholders to determine how customer-sited battery storage could be modeled appropriately in the 2021 IRP. This will afford plenty of time for interested parties to meet and determine appropriate inputs for modeling customer-sited storage in the IRP.

As a starting point, Utah Clean Energy recommends that the 2021 IRP include the utility's cost for implementing a battery storage incentive program (including the incentive value and program administration costs, rather than the total cost of battery storage which would be paid by the customer) and dispatch profiles for distributed battery storage. There are two different types of customer battery dispatch: first, customer dispatch of the battery as a demand response tool to reduce the customers' own electricity purchases, and second, customer dispatch of the battery as an energy resource to the grid to provide energy. As illustrated in the examples below, some utilities provide customer incentives for battery storage in exchange for a customers' commitment to dispatch the battery to the grid in specific ways that are beneficial to the utility and its customers. Other utilities provide incentives to customers who use the battery to increase self-consumption of solar energy or shift their usage away from times of peak demand. Both of these types of dispatch provide benefits to the grid (including transmission and distribution deferral, transmission congestion relief, and resource adequacy.) Customer-sited battery storage can also be used to provide additional services including energy arbitrage, reserves, frequency regulation, voltage support, and black start capabilities. At the workshop, parties can discuss whether and how the value of these services can be represented in the IRP.

The following description of seven utility battery storage incentive programs provides an overview of existing utility incentives for battery storage and the services battery storage customers are providing to the grid. For comparison purposes, we have calculated an estimated incentive value for each program for a battery with similar specifications to the Tesla Powerwall 2 (7 kW peak power, 5 kW continuous power, 13.5 kWh usable energy).[3]

(1) Green Mountain Power "Bring Your Own Device" Battery Incentive

Incentive Type: monthly bill credit based on battery capacity available for a minimum of 3 hours

Incentive Value: $14.50 - $36 per month

Estimated incentive for Tesla Powerwall 2: $29/month

Green Mountain Power provides any customer who has a compatible model of battery with a monthly bill credit if that customer makes their battery available to the utility during times of peak energy demand. The utility calls upon customer batteries during "Peak Events," which are anticipated to occur an average of 5-8 times a month for an average of 3-6 hours each time. Customers receive notifications of Peak Events at least four hours in advance. The incentive value is determined based on the amount of power the customer makes available to the utility for a minimum duration of three hours.

(2) California Self Generation Incentive Program (SGIP)

[2] Docket No. 17-035-16, Rocky Mountain Power's Reply Comments, September 10, 2018.

[3] This calculation is an estimate based on the publically available information about each incentive program intended for comparison purposes. Actual incentive values may be different depending on actual project specifications and incentive requirements.

Incentive Type: upfront incentive based on battery capacity

Incentive Value: $0.25/Wh - $0.35/Wh (residential)

Estimated incentive for Tesla Powerwall 2: $3,375 - $4,725

The SGIP has been extended until 2024, and offers customers of four California utilities who install qualifying equipment (including energy storage in addition to other generation technologies) an upfront incentive based on battery capacity. Incentives are available for large-scale, residential, and commercial storage, with specific incentives for projects in low-income and disadvantaged communities. The incentive value steps down as adoption of customer generation reaches certain thresholds in each utility service territory. Participating customers are required to interconnect their battery storage such that it is capable of discharging energy to the grid, and must fully discharge the battery a minimum number of times each year (130 times per year for commercial customers, 52 times per year for residential customers). Battery storage customers may also opt-into a demand response program wherein a developer aggregates many individual customer systems in order to provide demand response services to the utility. Each utility administers the incentive separately for their customers.

(3) Salt River Project Residential Storage Incentive Program

Incentive Type: upfront incentive based on battery capacity

Incentive Value: $150 per DC kWh, $1,800 cap

Estimated incentive for Tesla Powerwall 2: $1,800

The Salt River Project residential battery storage incentive program will provide up to $1,800 ($150 per DC-kWh) to the first 4,500 customers who purchase and install qualifying battery technologies. There are no parameters limiting how or when residential customers charge or discharge their batteries, although participating customers must agree to participate in a research study and may also choose to receive credits for discharging to the grid by switching to the Customer Generation Price Plan (a three-part rate structure which includes a monthly service charge, TOU energy charges, and a demand charge).

(4) SMUD Battery Storage Program

Incentive Type: upfront incentive based on battery capacity

Incentive Value: $300 (1 kW – 10 kW) or $600 (11kW+)

Estimated incentive for Tesla Powerwall 2: $300

Solar customers must commit to use at least 51% of the battery capacity to shift energy generated from solar to offset loads during on-peak periods, and are compensated at net metering rates for any incidental energy discharged to the grid. Non-solar customers must commit to use at least 51% of the battery capacity to shift energy usage from on-peak to off-peak periods and are not compensated for any incidental energy discharged to the grid.

(5) NV Energy Storage Incentive

Incentive Type: upfront incentive based on battery capacity

Incentive Value: $0.11/Wh (non-TOU rate) - $0.22/Wh (TOU rate) for residential customers, capped at either 50% of project costs or $3,000 for systems 100 kW or less

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Estimated incentive for Tesla Powerwall 2: $2,970 (TOU Rate) - $1,485 (non-TOU rate)

NV Energy offers an incentive for solar-integrated residential and commercial energy storage systems. The storage must be capable of being charged by at least 75% by a renewable energy source. Residential and small commercial customers can receive an incentive for storage projects from 4 kW to 100 kW, and large commercial customers can receive an incentive for 100 kW to 1,000 kW of storage. The incentive amount varies from $0.08 per watt-hour to $0.22 per watt-hour depending on the size of the system and whether the customer is on a Time of Use (TOU) or non-TOU rate. The incentive amount is capped at 50% of the project costs or $3,000 for systems 100 kW or smaller ($300,000 for systems between 100 kW and 1,000 kW), whichever amount is less. The incentive amount for systems of all sizes decreases in steps every time $1 million in incentives is reserved.

(6) MA SMART Program

Incentive Type: upfront incentive based on battery duration and ratio of solar capacity to battery storage

Incentive Value: $0.0763 - $0.0247, based on ratio of storage capacity to solar capacity.

Estimated incentive for Tesla Powerwall 2: $1,273 when paired with a 6 kW solar array (additional incentive available for solar)

The Massachusetts SMART program offers incentives to customers of three Massachusetts utilities for solar projects and includes an adder for projects that also include storage. The value of the energy storage adder varies based on the ratio of storage capacity to solar capacity and is designed to incentivize short to medium duration energy storage systems because these systems were found to offer the most value for ratepayers. An “Energy Storage Adder Calculator” is provided at the page below to help estimate the incentive value. The energy storage adder declines by 4% as designated tranches of solar capacity are installed. Behind-the-meter storage projects must demonstrate that the energy storage system reduces on-site customer peak demand or increases self-consumption of on-site generated solar energy.

(7) NYSERDA Solar Plus Energy Storage

Incentive Type: upfront incentive based on battery capacity and duration

Incentive Value: 350 per kWh of energy storage capacity

Estimated incentive for Tesla Powerwall 2: $4,725 (additional incentive available for solar)

Incentives for solar and energy storage are available to commercial customers, community solar projects, and customers with solar. Authorized NY-SUN contractors apply for the incentive on their customer’s behalf.

Data Support: If applicable, provide any documents, hyper-links, etc. in support of comments. (i.e. gas forecast is too high - this forecast from EIA is more appropriate). If electronic attachments are provided with your comments, please list those attachment names here.
Links to the seven utility programs described above are as follows:
(1) Green Mountain Power “Bring Your Own Device” Battery Incentive: https://greenmountainpower.com/bring-your-own-device/battery-systems/

(2) California Self Generation Incentive Program (SGIP): https://www.selfgenca.com/home/program_metrics/

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(3) Salt River Project Residential Storage Incentive Program: https://www.srpnet.com/electric/home/batterystorage/default.aspx

(4) SMUD Battery Storage Program: https://www.smud.org/en/Going-Green/Battery-storage/Homeowner

(5) NV Energy Storage Incentive: https://www.nvenergy.com/publish/content/dam/nvenergy/brochures_arch/cleanenergy/handbooks/SolarGenerations-Handbook.pdf

(6) MA SMART Program: https://www.mass.gov/info-details/solar-massachusetts-renewable-target-smart-program

(7) NYSERDA Solar Plus Energy Storage: https://www.nyserda.ny.gov/All-Programs/Programs/NY-Sun/Solar-for-Your-Business/Solar-Plus-Energy-Storage

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Recommendations: Provide any additional recommendations if not included above - specificity is greatly appreciated. Utah Clean Energy recommends that PacifiCorp convene a workshop with interested stakeholders well in advance of the 2021 IRP to determine how to model an incentive for customer-sited battery storage in the 2021 IRP.

Please submit your completed Stakeholder Feedback Form via email to IRP@Pacificorp.com

Thank you for participating.

* Required fields