Exhibit A-
Scope of Work
and
Request for Proposal Requirements

Residential Electric Vehicle
Managed Charging
Pilot Program, 2024-2026+

PACIFIC POWER®
A DIVISION OF PACIFICORP

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About Pacific Power

PacifiCorp d/b/a Pacific Power (PacifiCorp or the Company) provides safe and reliable electric service to more than 773,000 customers in 243 communities across Oregon, Washington, and California as Pacific Power. Rocky Mountain Power serves customers in Utah, Idaho, and Wyoming. PacifiCorp is one of the lowest-cost electricity producers in the United States, serving nearly two million customers in six western states as the largest regulated utility owner of wind power in the West.

PacifiCorp serves roughly 600,000 customers in over 200 communities across the state of Oregon. This diverse and widespread service area covers 21,292 square miles and touches each of the state's four borders. While the company serves roughly 75,000 customers in north and northeast Portland, the majority of PacifiCorp customers live in smaller communities and more rural areas. PacifiCorp's service area across California and Washington is likewise rural and dispersed, with roughly 45,000 customers in California and 130,000 customers in Washington. For more information, see Appendix A or visit www.pacificpower.net.

We are dedicated to helping customers and communities thrive by delivering an energy future that is reliable, affordable, sustainable, and safe. To do this, we work to protect and enhance the environment by conserving natural resources, reducing emissions, and protecting wildlife and habitat. We shape forward-thinking policies and innovative solutions to improve the livability of customers' hometowns and neighborhoods. We take pride in being an active member in the communities we serve, always striving to make the place our customers call home a better place to live.

General Program Overview

This is a request for proposals (RFP) for a Residential Managed Charging Pilot (Pilot) in Pacific Power's Oregon and Washington service area. PacifiCorp may need to expand the scope to other states in the future, including California or parts of Rocky Mountain Power's service area, and would expect the terms and pricing to be meaningfully similar to this scope. The anticipated term for this Pilot is a three-year period from 2024 to 2026, with an option to extend an additional one to two years (i.e. to 2027 or 2028), if mutually agreed.

PacifiCorp appreciates the interest of bidders in this RFP and the time and attention invested in completing the requested requirements.

Introduction

As part of the Transportation Electrification Plans (TEP's) in Oregon[1] and Washington,[2] residential managed charging is an important program to reduce grid impacts on electric vehicles (EV's). The proposed Pilot aims to enroll residential owners of EV's[3] and offer them ongoing financial incentives in

[1] PacifiCorp (2023, May 19). Oregon Transportation Electrification Plan
Microsoft Word - 0_UM 2056 PacifiCorp CLtr_Final 2023 TEP.docx (state.or.us)
[2] PacifiCorp (2022, October 19). Washington Transportation Electrification Plan
UTC Case Docket Document Sets | UTC (wa.gov)
3 The Pilot will start by focusing on residential customers who own EV's and live in single-family homes, including both homeowners and renters. Exploring potential ways to allow Pilot participation by EV owners who reside in multi-dwelling housing units will be a learning objective. Non-residential customers, fleets, and public charging ports are excluded from the Pilot.

exchange for the access to remotely control their vehicle's charging. This "managed" charging of enrolled EV's can push the load to less critical, off-peak times of the day and can also respond to peak grid or localized system events, similar to demand response (DR) programs. The Pilot will optimize for minimum charging requirements for customer comfort, satisfaction, and safety, while also allowing customers to easily override utility control when necessary, within clearly-defined program rules.

PacifiCorp is motivated to launch a program to manage charging load to mitigate impacts to the grid's peak load, alleviate strain on feeders from future EV adoption, and explore the feasibility of adding a new source of flexible load to the Company's portfolio of demand response resources.

PacifiCorp's proposed Pilot offering is designed with specific learning objectives and evaluation goals to determine if residential managed charging can measurably benefit both customers and grid-needs at scale. Those are described in subsequent sections.

The Pilot aims to enroll residential customers in a program that will effectively manage their charging schedules through one of the following mechanisms:

- **Controlling the Vehicle.** Remote control of EV charging load via the vehicle's original equipment manufacturer (OEM) telematics. The telematics approach leverages software to directly communicate with the vehicle via OEM Application Programing Interfaces (APIs), receiving charge capacity information and sending instructions of charging timing, speeds, and amounts.
- **Controlling the EV Charging Equipment.** A two-way communicating charger (also referred to as EV supply equipment, or EVSE) is used to send signals to the charger itself, as opposed to the vehicle directly. This approach may receive different or more limited information about the state of the vehicle's charge than controlling the vehicle directly. EVSE devices that are eligible to participate in the Pilot will be linked to PacifiCorp's qualified products list (QPL), and listed on the Company's website.[4]

PacifiCorp is aware that other strategies exist for actively managing charging load, including use of third-party apps, like SmartCar, smart connectors / plugs, or onboard plug-in ports. Additionally, some managed charging programs layer in "passive" or "behavioral" intervention techniques. Bidders should explain with clarity which technologies and approaches they will use for the Pilot.

PacifiCorp currently envisions offering customers financial incentives for participating in the Pilot and is interested in bidders' proposed approaches. Some of the managed charging pilots already fielded by utilities offer customer payments based on the amount (kW) of their actual load shift performance. Although that is not currently planned for PacifiCorp's Pilot, the Company's prospective financial incentives may be partially dependent on the number of opt-outs a participating customer undertakes during a set time-period. PacifiCorp will look to the selected program implementer to support better defining "active enrollment" upon the launch of the Pilot. Also, the Pilot likely will seek to explore the most impactful method and timing for issuing incentive payments.

[4] See QPL documentation. Available online: https://www.pacificpower.net/content/dam/pcorp/documents/en/pacificpower/savings-energy-choices/electric-vehicles/Level_2_Home_Charger_Qualified_Products_List.pdf

Customers likely will not need to be enrolled in a time of use (TOU) rate in order to participate in the Pilot, though they could benefit financially from doing so. PacifiCorp is interested in studying the impacts of overlapping participation between the TOU rate and the Pilot and may ultimately need to put a cap on the amount of dual enrollment possible. Details on eligibility terms might be refined following receipt of stakeholder input and during the Pilot's kick-off phase.

In its TEP, PacifiCorp investigated the definitions served by Oregon's HB 2165 Section 2, which state that "underserved communities" are residents of rental or multifamily housing, communities of color, communities experiencing lower incomes, tribal communities, rural communities, frontier communities, coastal communities, and other communities adversely harmed by environmental and health hazards. Through a mapping exercise with GIS and analysis, PacifiCorp estimates that as much as 97% of PacifiCorp residential customers qualify as members of an underserved community. Through the initial mapping process, PacifiCorp identified that at least 54% of PacifiCorp's service area qualifies within the geographic definitions of tribal, rural, frontier, and coastal communities, and an additional 39% qualifies under one or more of the demographic definitions. Similar findings hold true in the Company's Washington service area.[5] It is imperative that the Pilot take into consideration how to incorporate and integrate underserved customers, specifically paying attention to recruitment and participation strategies to bring these customers into the Pilot. But, also addressing throughout the technical proposal how the vendor plans to incorporate diversity, equity and inclusion (DEI) strategies into the Pilot. Designing a Pilot that brings in participants through multiple channels and via multiple vehicle types will ideally allow it to scale as the EV market expands beyond early adopters and includes more affordable / accessible models available to a greater number of customers.

Furthermore, PacifiCorp has a deep understanding of the profound impact we have on communities through our supply chain investments. As an organization operating in the utility sector, we acknowledge that many utility suppliers are multinational or large corporations. However, PacifiCorp recognizes the importance of balancing localizing and diversifying our influence with the economical stewardship of the funding granted by our rate payers. As part of our commitment to supplier diversity and community impact, we are actively in the process of establishing a supplier diversity team within our organization. This team will play a crucial role in ensuring that our supplier diversity goals are met and that opportunities for diverse suppliers are maximized. The primary responsibility of this team will be to identify, evaluate, and engage with diverse suppliers. They will work closely with these suppliers to assess their capabilities, ensure they meet our quality standards, and facilitate their integration into our supply chain.

In addition to supplier diversity, our team will also be responsible for reviewing opportunities for the utilization of local vendors. While supplier diversity may vary in certain localities, we recognize the importance of supporting and investing in local businesses. Therefore, our team will explore local vendors, aiming to promote economic growth and development within the communities we operate. We strongly encourage vendors to foster supplier diversity by establishing a competitive procurement process that opens doors for subcontractors and businesses representing diverse backgrounds as well as internally hosting a diverse team. Bidders should show within the Qualifications and Relevant

[5] See PacifiCorp's Washington Clean Energy Transformation Act (CETA) background, plans, and documentation online: https://www.pacificorp.com/energy/washington-clean-energy-transformation-act-equity.html

Experience and Company Diversity Policies and Procedures sections of the response how their teams have worked and will work with diverse partners throughout the Pilot.

Learning Objectives

The Company's anticipated learning objectives from the Pilot are listed below. These may be updated during the planning and implementation phases of the Pilot, given potential input from stakeholders, implementers, and/or evaluators.

- Calculate total EV load enrolled in managed charging and potential for managed charging.
- Determine the estimated percentage of EV load enrolled in managed charging.
- How much load can be effectively shifted from baseline?
- What are the environmental impacts of the load shift?
- Understand barriers to participation in managed charging programs.
- Measure impacts to customer satisfaction.
- Determine if managing telematics and managing EVSE yield different impacts or enables different levels of pilot participation.
- Learn how managed charging could be integrated with the existing demand response (DR) portfolio.
- Explore potential ways to allow Pilot participation by EV owners who reside in multi-dwelling housing units.
- Explore feasibility of offering tiered incentives based on participating customers' income levels.
- Investigate if managing EV load has impacts on distribution system planning and expenses.
- Understand any additional costs absorbed host customers, such as original equipment manufacturer (OEM) API fees that be incurred.

The Company plans to explore the use of an experimental design framework for the Pilot (e.g., a randomized encouragement design), and whether it could yield more accurate or nuanced results toward meeting the Pilot's learning objectives.

Program Objectives & Expected Outcomes

Beyond answering *learning* objectives, the Pilot also seeks to produce tangible outcomes within four categories of *program* objectives:

1. Shift charging load to off-peak times.
2. Improve customer satisfaction with PacifiCorp service offerings.
3. Increase affordability for EV charging for customers.
4. Integrate EV managed charging into future DR program portfolios.

Specifically, the Pilot aims to achieve those four program objectives by accomplishing the following expected outcomes:

1. **5% to 15% of eligible customers enrolled.** PacifiCorp anticipates that a minimum of 5% to 15% of EV owners may participate in the Pilot by the end of the third program year. There are no enrollment caps and PacifiCorp will allow as many customers to participate as are eligible and interested in doing so. Bidders will be expected to provide a forecast of the actual yearly participation they expect by state within Exhibit B Pricing Template. For further context, see

Appendix B for PacifiCorp's planning assumptions about EV adoption in the Company's Oregon and Washington service areas.

2. **Minimum of 75% of charging load shifted to off-peak times.** One of the primary performance metrics for the Pilot will be the amount of EV charging load that is enrolled in the Pilot and flexed ("shifted") to off-peak times. Determining the extent of this expected outcome, and whether it varies by program design element or customer characteristic, is a core learning objective. PacifiCorp aims to shift the load while avoiding the creation of a new peak.
3. **Continuous participation in the Pilot throughout Pilot life.** Ongoing participation in the Pilot will likely be driven by incentive payments for participation, as well as high customer satisfaction due to the user experience, lower cost of charging and tailored program design. A learning objective will be to determine if varying program design elements has an impact on participation rates or other evaluation metrics.
4. **Meaningful evaluation, measurement, and verification (EM&V) of the Pilot.**[6] Data-driven analysis of program impacts, along with clear and actionable conclusions and recommendations, will allow the Company to determine if the offering is cost effective and viable for continued implementation beyond the pilot phase. PacifiCorp tentatively expects needing to conduct both process and impact studies, highlighting both quantitative and qualitative findings. Evaluations are likely to cover a range of topics, including realized load shift, customer satisfaction, greenhouse gas (GHG) emissions impacts, and market barriers, among other topics.
5. **Feasibility study completed of integration into distributed energy resource management system (DERMS).** PacifiCorp anticipates developing a feasibility plan to transfer Pilot data to the Company's existing and future energy management systems and dashboards, including its DERMS. This effort is expected to be front-loaded during the Pilot implementation period and will likely lead directly to the actual integration work.
6. **EV detection modeling strategy developed.** Leveraging customer and energy data to detect (within a reasonable margin of error) which PacifiCorp customers own and regularly charge EVs will be an objective of the pilot.

Note that the program applications that PacifiCorp filed in each state (linked above in the Introduction section) also provide further details on these expected outcomes, as well as possible metrics and KPIs to track progress. These expected outcomes are described in further detail within the tasks and program requirements in the next section.

Tasks & Program Requirements

In order to implement the Pilot and achieve the learning objectives and expected outcomes listed above, PacifiCorp expects the selected implementation vendor to perform the following seven tasks.

Bidders shall address each of the following tasks in their technical proposal, explain how they will deliver on them, describe any relevant assumptions made, and note, where applicable, any exceptions to the

[6] Note that EM&V is not included in this scope of work; PacifiCorp will procure EM&V separately and expects the work will be done by an independent third party. The program implementer will be expected, however, to collaborate with the EM&V provider.

requirements. Please ensure the cost of all of these tasks is included and clearly identified in Exhibit B Pricing Template.

1. Project Kickoff

The vendor shall assemble a qualified team that can effectively kick-off the project with internal PacifiCorp staff. The vendor will be required to:

- Develop a program implementation manual;
- Build a comprehensive schedule of activities from launch into implementation;
- Clearly define project goals and objectives;
- Identify risks and mitigation strategies;
- Host a kickoff meeting with the broader PacifiCorp team and other key stakeholders and support ongoing conversations with stakeholders as Pilot requirements are finalized;
- Host weekly or bi-weekly check-ins during launch and potentially ongoing throughout the Pilot;
- Establish a communication plan or strategies that detail key messages, target audiences, channels as well as specifically address how to reach underserved communities;
- Develop a data management and customer privacy plan that adheres to PacifiCorp cybersecurity and customer privacy standards; and
- Support any other program materials that need to be developed to ensure successful project implementation.

2. Recruitment, Marketing and Enrollment

The vendor shall develop, lead, and implement a comprehensive recruitment and marketing program that will result in participant enrollment. Tasks may include, but are not limited to, the list below. Bidders should expand on any relevant tasks not identified below during their response if needed.

- Define and build a recruitment and marketing strategy that will align internal stakeholders, identify roles and activities, establish key milestones, build KPIs, etc. to layout the process and steps for recruitment;
- Build messaging in recruitment activities that is inclusive to those languages spoken in PacifiCorp's service area, especially Spanish;
- Utilize mapping activities completed by PacifiCorp to identify marketing and enrollment plans;
- Work with PacifiCorp marketing team to reach out to customers;
- Work with PacifiCorp brand guidelines to develop messaging and collateral;
- Develop a customer pipeline tracker that can be shared with PacifiCorp internal team to see which customers have been reached out to and how ongoing recruitment is occurring;
- Design customer-facing collateral (FAQs, brochures, e-mail campaigns, etc.) that will be utilized during recruitment campaigns;
- Work with PacifiCorp web team to identify how to host or link Pilot information and online applications;
- Build applications and forms with PacifiCorp support to enroll customers;
- Identify future ways to integrate multifamily customers into a future program iteration;
- Work with PacifiCorp team on how to establish and verify eligibility of customers; and
- Host a 1-800 call number for customers that may be experiencing issues with enrollment or establish an alternative approach with PacifiCorp's call center.

Bidders should explain how much of these services they plan to do in-house versus subcontract with another firm(s). Please also explain which, if any, of these responsibilities are preferred to be owned by PacifiCorp.

3. Customer Experience & User Interface

The vendor shall ensure that participating customers experience a high-quality interaction with an easy-to-use interface. The potential phases of interaction with the customer may include data gathering, messaging, and active load management, which should be designed for optimal customer experience (CX) throughout. PacifiCorp strives to implement a Pilot in which participants have clear understanding and expectations of program terms, trust the active management process, get appropriate messaging and support, and ultimately participate in a "set it and forget it" experience.

The vendor shall:

- Enable seamless enrollment from initial marketing campaigns with a link to enroll, to the actual enrollment page, and finally to the confirmation their application was received, whether entering from the telematics or EVSE channel. The enrollment page should include:
    - A terms and conditions agreement that the customer is required to sign upon enrollment.
    - Information of all options for managed charging, as well as how the opt out feature and ongoing incentives work.
- Communicate the exact terms of an "active enrollment," in customer-facing program requirements and terms and conditions.[7] The vendor will also need to track whether customers are adhering to those program rules and if they remain eligible and defined as "active participants" during the Pilot implementation period.
- Provide customer education about which EVSE and vehicle OEMs qualify for the program. The vendor should also provide customer-facing materials that explain in plain language how the program works, what the customer obligations are, and answer frequently asked questions.
- Host a webpage or microsite allowing for consistent access to the customers own data, and options regarding their charging schedule. An app in conjunction may make it easier access for those on the road may be preferable, but customers must be able to access everything through the webpage. Specifically, the vendor shall:
    - Show that the webpage or microsite is affiliated with PacifiCorp whether through white labeling or through similar means.
    - Host a multilingual site that can be accessed in inclusive languages spoken in PacifiCorp's service area, especially Spanish.
- Send incentives to participants when required, depending on program rules. The vendor must facilitate those transactions via check, preloaded cash card, or similar incentive channel. The vendor will track and report that incentive processing with clear invoicing to PacifiCorp.
- Allow customers the ability to easily opt out or override managed charging at whim – it must be easy, flexible, and intuitive. This should include the ability to 1) opt out of communications, 2) unenroll from the program, and 3) override active management.

[7] The bidder should propose a recommendation for how to track and define limited overrides and opt outs to balance customer flexibility with utility benefit from resource availability. The solution should be easy to understand for customers and maintain high customer satisfaction.

- Allow customers an option for email, text, or no updates regarding peak charging times, override limits, costs incurred, possible demand response event notifications, and any marketing campaigns that may be attached to managed charging in the future. This may include behavioral messaging, if appropriate.
- Take accessibility into consideration for the enrollment application and ongoing support through language, font, and format for those facing barriers, disabilities, and unfamiliarity with technology.[8]

4. System & Technical Requirements

The Pilot aims to shift at-home EV charging load to off PacifiCorp's peak via active load management, while also exploring the feasibility of layering in demand response capabilities and integrating with PacifiCorp's DERMS. The vendor will be expected to meet the technical requirements identified in Appendix C: Technical Background.

Bidders shall clearly describe in their response which technologies and approaches they will use for the Pilot sharing how results differ by strategy will be a learning objective of the Pilot. Furthermore, bidders shall describe in their response how the managed charging can be optimized and automated in response to various signals such as dynamic, real-time signal, such as a price signal, market condition, or the amount of renewable generation on the system. Bidders should also identify the electric vehicle supply equipment providers and manufacturers (EVSE/EVSP) as well as the original equipment manufacturers (OEM) the bidders are currently supporting and plan to support.

In the response, bidders should explain the degree to which their platform can manage EV charging at the distribution system level, from the substation level down to the service transformer level and respond to localized grid events.

In addition, for this RFP, PacifiCorp expects bidders to illustrate how the Pilot can scale to calling demand response events and integrate this activity as a key aspect of the program in the future. Bidders will need to consider their cost to deliver the performance characteristics identified in Appendix C in designing their offerings (see especially Table 12 and Table 13). For this RFP, bidders are asked to describe how their proposed program complies with the DR use cases identified in Appendix D: Demand Response Program Characteristics by filling out the form there, with one column of responses for telematics and a second column for EVSE.

The vendor, during the course of the pilot, will be required to:

- Ensure that charging is actively managed only when the customer's EV is plugged in at a home within PacifiCorp's service area;
- Enable protections that ensure the 12-volt battery is not drained due to too frequent "pings" to the vehicle when it is not connected to a charger or is outside the "geofence";

[8] Examples could include – dyslexia friendly fonts, multiple language translations for the site, promotional material, email listings and ongoing communication (Spanish is a preference), making the website compatible with most reading apps for those that are visually impaired, making the buttons obvious and easy to click, including instructions with the form, as well as an FAQ to help answer any questions, potentially helping clients through the call center if there are any unexpected issues.

- Determine and display in real time various details about an EV that is connected to an EVSE within the geofence. PacifiCorp expects to be able to view the details in aggregate by state and other possible groupings. These details may include the following:
    - Vehicle type
    - EVSE type
    - When the car is connected to EVSE
    - When the car is actively charging
    - What the charging load is (kW)
    - Amount of charge of the battery (kWh and/or percentage)
- Control the charging load via OEM telematics and EVSE equipment by either fully turning on and off the load or, optionally, "throttling" the load (i.e. reducing the flow) if possible. PacifiCorp expects to be able to push at least 75% of the total charging load to off-peak hours;
- Avoid creating a new peak by "stepping" the shift to differing off-peak hours. This could include rotating customers' schedules and/or putting them into a dispatch "pool";
- Provide an explanation or visualization of the resulting load shape anticipated as a result of the active management from the Pilot, including clarity about opt out expectations;
- Ensure that each EV maintains a minimum charge level at the time it is needed and that customers can easily override and opt out of the active management, within the confines of the program's terms and while also seeking ways to maximize load availability;
- Forecast available load allowing PacifiCorp to view how much load is estimated to be available at the hourly level and by various device groupings for the current and subsequent calendar month;[9]
- Provide a dashboard that shows details about the devices that are enrolled in the program, in real time and geographically. The dashboard should also allow PacifiCorp to interact with the platform. Specifically, the utility-facing dashboard should provide the ability to:
    - View connected devices by type (i.e. telematics or EVSE) and location, along with their charging status & estimated load at the individual and aggregate level (if possible)
    - View forecast (if available) of load availability at the hourly level by grouping and for the current and subsequent calendar month integrating the potential opt out load;
    - Update the charging schedule for individual devices and groups of devices, where feasible
    - Schedule DR events manually, in the case they are not automatically dispatched, depending on dispatch speed and the applicable DR use case(s) (see Appendix C for further detail)
    - View results of load shift scheduling
    - View results of DR events
- Identify opportunities for the utility-facing dashboard capable of supporting the Pilot's DEI goals and tracking needs;
- Integrate into PacifiCorp's existing and future energy management systems (EMS) and dashboards, including its DERMS as a parallel activity during the launch and implementation of the Pilot adhering to the technical requirements identified in Appendix C;

[9] Understanding the expected performance of load shift, given the nature of customer opt-outs and other factors, will be crucial for extracting grid value from the Pilot.

- Develop a feasibility plan of how to run future DR events and the use cases and grid value streams associated with running those events; and
- Explain an approach to how to develop a plan for EV detection modeling that also addresses stakeholder concerns by ensuring the modeling and communications with customers about the results of the modeling is done carefully, responsibly, and within the confines of state rules and regulations.

5. Monitoring & Evaluation, Reporting

In addition to hosting a utility-facing dashboard and integrating with PacifiCorp's existing EMS/DERMS, described in Task 4, the vendor will need to support additional monitoring and reporting for the Pilot. These requirements shall include the following:

- Conduct A/B testing on various program elements for learning purposes;
- Provide to PacifiCorp participant tracking data (enrollment status/dates, incentives etc.) on an ongoing basis;
- Provide reporting on the status of the Pilot's learning objectives and metrics, as well as on DEI outreach as needed, with ability to track based on state definitions;
    - Specifically monitor how improvements can be made in the program design to better achieve objectives of reaching underserved communities;
- Potentially collaborate with the Energy Trust of Oregon or other DSM program implementation partners, upon PacifICorp's request;
- Collaborate with the chosen third-party evaluator in support of their EM&V processes and share data as directed;
- Develop and submit an annual report in accordance with PacifiCorp performance metrics and guidelines for submission annually to the Public Utility Commissions and offer PacifiCorp related regulatory support; and
- Provide demand response event reporting, where applicable. This should include a clear understanding of opt out and override impacts on load shift performance.

6. Cyber Security

The vendor will be required to adhere to PacifiCorp's Information Security Policies which provide the guiding security principles that protect computing resources and information in all forms throughout their life cycle, in addition to key facilities and cyber assets subject to the various standards and regulations.[10] It is mandatory that all personnel, including contractors, adhere to this policy and work with management to identify and change practices that are not consistent with this policy. The vendor will have to:

- Complete the attached cybersecurity form (Appendix E) and submit as part of the proposal confirming adherence or non-compliance to specific requirements;
- Provide a network diagram of how the vendor's data systems will interact with PacifiCorp data systems (in the "User Experience Visualization" section), [11] including a brief summary;
- Describe your company's use of a secure file transfer protocol (sftp), if applicable; and

[10] This includes Washington's RCW 19.29A.100 subsection 5(a).

[11] At a high level, the network diagram is a visual description of assets such as datacenters and firewalls, and shows the flow of data between the vendor, PacifiCorp, and/or other parties.

- Provide any other relevant information that explain the cybersecurity policies and procedures in place within the company.

7. Program Management

The vendor shall provide ongoing project and program management throughout the life of the Pilot including status updates and other reporting on a monthly, quarterly, and annual basis. The vendor will ideally offer turn-key program management services. The vendor will be required to:

- Assign a dedicated customer success manager or staff member to the project to ensure pilot success, the primary point of contact and counterpart to the utility program manager;
- Clearly and proactively communicate with PacifiCorp program management staff;
- Update and manage the ongoing schedule of the Pilot;
- Host ongoing weekly or bi-weekly check-ins;
- Create monthly two-page dashboard reports for easy digestion and provide a more comprehensive quarterly report that covers the previous three months sharing KPIs and other key metrics; and
- Identify opportunities for innovation and growth potential, looking ahead to expansion.

RFP Details

Key Steps & Dates

Please refer to Table 1 for the anticipated timeline for the RFP. Note that dates are subject to change at PacifiCorp's discretion, however bidders shall have no less than six weeks to submit their proposals following the RFP release. Relevant changes to the schedule will be communicated to bidders.

PacifiCorp aims to provide notification to bidders at the end of the RFP process in two steps: the first notification will be to share the results of the RFP evaluation, indicating whether the bidder was the winner, did not qualify, or was put on the alternate list. If contract negotiations with the winning bidder were to fail, PacifiCorp would proceed to select the runner-up on the alternate list and begin contract negotiations, and so on, until a contract is fully executed. The second notification will be sent to all bidders once a contract is fully executed, indicating that the RFP process is complete.

Table 1. RFP Key Steps & Dates

Step	Anticipated Timing
RFP announced on webpage	June 30, 2023
RFP released	Early-Mid August 2023
Clarifying questions about the RFP due	Mid August 2023 [+1 week after release]
Responses to clarifying questions about the RFP posted	Mid-Late Aug 2023 [+2 weeks after release]
Proposals due	Mid Sept 2023 [+6 weeks after release]
Winner chosen, contract negotiations begin	Late Sept / Early Oct 2023 [+3 weeks after submission]
Notification 1 (results) sent to all bidders	Late Sept / Early Oct 2023
Notification 2 (procurement end) sent to all bidders	Upon contract execution

Scoring Rubrik, Selection Criteria

Each proposal will be evaluated first using a pass/fail rubric, followed by a scoring matrix by PacifiCorp's RFP evaluation team.

The pass/fail criteria are:

1. Completion of all required proposal elements within requirements, per Table 3.
2. Ability to provide active management of EV load via telematics and EVSE.
3. Ability to successfully integrate with existing DERMS.
4. Submission of cyber security requirements document (Appendix E).[12]

The scoring matrix will use the following criteria and weighting:

Table 2. Selection Criteria

Criteria	Weight	Description
Cost	20%	How competitive is pricing
Diversity, Equity, and Inclusion	30%	How diverse is the bidding company; how comprehensive is the DEI outreach and implementation plan throughout proposal
Technical Requirements	30%	The degree to which the proposal addresses the tasks outlined above
Qualifications	20%	How much experience in Managed Charging does the bidder have

Proposal Requirements & Instructions

Proposals should be limited to the page limits in Table 3. Any additional information bidders would like to provide further clarification on how they can achieve the scope and objectives of this RFP may be included in the Proposed Alternative Approaches and Additional Information section, however review priority will be given to the information provided within the main body of the response. Bidders should provide one electronic version of all materials in a .zip file.

The following table shows everything a bidder is expected to submit, along with corresponding page limits and items that are optional. Incomplete submissions are grounds for a "fail" in the pass/fail scoring.

Table 3. Proposal Requirements and Page Limits

Proposal Section	Maximum Page Length
Proposal Overview	2 pages
Qualifications & Relevant Experience	4 pages
Technical Proposal	14 pages
Additional Questions	4 pages
Exhibit B Pricing Proposal	1 Excel file
Pricing Proposal Explanation (Optional)	2 pages
Proposed Timeline	1 page

[12] PacifiCorp's Cyber Security Team will evaluate the cyber security requirements document to determine if criteria are met.

User Experience Visualization	5 pages
References	2 pages
Org Chart & Team Member Bios	2 pages
Company Diversity Policies and Procedures	2 Pages
Proposed Alternative Approaches & Additional Information (Optional)	4 pages
Appendix D: Demand Response Characteristics Form	1 Form
Appendix E: Cyber Security Questionnaire	1 Form
Maximum Total	42 pages + 1 Excel file + 2 Forms

The following are suggestions for readability of your proposal:

- Please ensure all proposal section headers align with those listed in the Table 3 above and that the Technical Proposal section clearly maps back to the seven tasks.
- Please use the "Check Accessibility" in Word, or a similar tool, to help ensure the proposal is as accessible as possible.
- Please do not use font size smaller than 11 point in the body of the text.
- Please number pages and put your company's name and/or logo in the header of each page.

Proposal Overview

(2 page Limit)

The purpose of this overview section is to give PacifiCorp a summary of how the bidder will address the needs of this RFP. Bidders should provide a concise description of how they propose to bring maximum value to Pacific Power customers through their implementation of this Pilot. The summary should also aim to highlight bidders' differentiators and special strengths.

Qualifications and Relevant Experience

(4 page limit)

Bidders should use this section in no more than four pages to describe their qualifications and relevant experience. This should include a summary of similar programs they have implemented for other energy companies, with details such as objectives, participation rates, findings, results, successes, and challenges. Please highlight any managed charging programs, or similar/relevant customer-facing demand-side management (DSM) programs, in Washington or Oregon.

Additionally, bidders should provide a brief summary of their company with facts such as employee count, ownership, history, and solutions offered. This should include how DEI efforts are included in their company.

Technical Proposal

(14 page limit)

Bidders should use this section to respond to the seven tasks and program requirements described above. Please note any assumptions, suggestions, or exceptions where necessary.

Concision is appreciated and preferred. Verbose or vague language in this section should be avoided. Please limit responses to these questions to no more than 14 pages. We prefer visual information like infographics, screenshots, and other figures. There will also be a separate section dedicated to visualizing the user experience, with its own additional 5-page limit. Existing Pacific Power vendors should respond to this proposal as if your company is a new vendor to Pacific Power.

Additional Questions

(4 page limit)

Please respond succinctly to the list of additional questions below. If you have already directly answered the question in the technical proposal, you can simply refer to the location instead of copy/pasting it here. A "yes/no" answer can be an acceptable response in some instances.

1. Is your platform capable of managed charging load via both OEM telematics and EVSE?
2. Does your solution *require* in-vehicle plug-in devices, such as a "GeoTab" or other onboard diagnostic port? If it is not required, is it an *option*?
3. At a high level, how does your platform convert EVSE data into an estimate of the battery's state of charge?
4. At a high level, how does your platform analyze and interact with the telematics data it ingests whether through OEM APIs directly or through SmartCar or similar?
5. Which EV and EVSE OEMs does your platform work with?
6. How do you propose incorporating behavioral / passive management techniques into the Pilot, if at all?
7. What is your general approach for exploring the learning objectives of the Pilot?
8. Do you recommend establishing a form of experimental design for this pilot, such as a randomized control trial? Why or why not?
9. How would you establish an A/B test(s) in this Pilot and what would you prioritize testing?
10. How would you propose working with PacifiCorp's distribution system planning (DSP) team to explore managed charging at the distribution level?
11. Does your solution require AMI data?
12. Do you recommend any specific service level agreements (SLAs) either for the vendor or for the utility?
13. Is your firm amenable to pursuing a type of pay-for-performance structure? If so, how would you prefer structuring that for a pilot like this one?

Exhibit B: Pricing Proposal

(1 Excel file with one required and one optional tab)

Bidders must provide a budget outlining all fixed and variable costs associated with their proposals by completing the Pricing Template, provided as Exhibit B. White cells represent fields that can be edited by the bidder. Blue cells contain formulas and other content that are locked. The price totals will auto-populate based on bidders' inputs.

The following are additional instructions and tips for completing Exhibit B Pricing Template:

1. Please fill out prices for all five years, even though the Pilot term is for three years, with an optional 1-2 year extension.
2. If there are fixed or variable cost categories that are not shown in Tab 1 Pricing Input Sheet that you would like to include, please put them in Tab 2 Supplemental and then describe them in the Pricing Proposal Explanation.
3. The row for total participants should be cumulative for each year, expected by the end of that year. So, if 50 new participants enroll in the program from Jan 1 through Dec 31 each year, the total participants should be shown as 50, 100, 150, and so on. Bidders should take into account participant attrition.
4. Variable costs should be entered as a *per-participant* cost, as opposed to the *total* cost; the total costs in this section will be calculated by a formula in a blue cell by multiplying the per-participant

costs by the total participants (either cumulative or incremental) and will be shown in the final columns for 3- and 5-year amounts.

5. The up-front and ongoing incentives per participant are both labeled "if applicable" so bidders can customize the design of their proposed incentive structure, whether to use one or both of the incentive types and choosing to set them at the optimal levels needed to achieve the yearly participation goals. The total costs of each bid will be assessed both including and excluding total incentives.
6. Fixed costs should be entered as annual costs for each year; the total cost will be summed by a formula in a blue cell in the final columns for 3- and 5-year amounts.
7. Even though EV Detection Modeling is considered as an optional "learning objective" under Task 4, please enter the cost of that service; if there is no additional price for that work, you can keep it as zero.
8. Please clearly indicate the cost of DERMS integration as described under Task 4; if there is no additional price for that work, you can keep it as zero.

Pricing Proposal Explanation (Optional)

(2 page)

If desired, bidders can use up to two pages to describe any details about your response to the pricing template, including assumptions or exceptions. This is an optional section.

Things to add into this optional Pricing Proposal Explanation section may include the following:

1. If you added anything into Tab 2 Supplemental, then please describe that here.
2. A description of how you handled OEM API fees, if at all.
3. If EV detection modeling is a *variable* cost, please add it in the supplemental tab of Exhibit B Pricing Template and then provide an explanation in this section.
4. It may be helpful to identify where each of the seven tasks from the Tasks & Program Requirements section show up in the Exhibit B Pricing Template.

Proposed Timeline

(1 page limit)

In this section, please use up to one (1) page to list out the steps and amount of time required for each of the seven tasks from the Tasks & Program Requirements section, from launch through end of PY3. Some may be continuous and ongoing. This can be provided in table form, Gantt chart, or similar visualization, as desired, along with accompanying explanatory text if needed.

User Experience Visualization

(5 page limit)

Bidders should provide screenshots, visualizations, or other graphics to show their platform and user experience. Specifically, this should include:

- A maximum of two pages showing visuals of end-user experience of the microsite, app, or other elements of the enrollment flow (described in task 3).
- A maximum of two pages showing visuals of the utility-facing dashboard (described in task 4)
- A maximum of one page showing a network diagram of how data flows to and from PacifiCorp to the bidders' platform (described in task 6).

In addition to the visuals themselves, please provide image titles and brief captions that explain the image as needed.

References

(2 page limit)

Bidders should list up to four utility clients who serve as a reference for the work they have done (or are currently doing) on managed charging programs like the one being proposed here. If a bidder has never implemented a managed charging program, the utility client references can be for other customer-facing DSM programs, such as demand response, energy efficiency, or other transportation electrification programs. The references should include:

- Utility name
- Program name and brief description of program type
- Years active
- Total number of participants
- Primary point of utility contact: name and contact information (email, phone number)[13]

In addition to providing references, the bidder should provide up to three citations for and links to publicly-available, third-party EM&V reports of a managed charging programs they have implemented, along with a brief description of key findings.

Finally, bidders should state whether they have letters of support from any of the EV or EVSE OEMs their platform is integrated with. These EM&V reports and letters of support may be added as separate attachments within the RFP submittal zips and do not count towards page limits.

Organizational Chart & Team Member Bios

(2 pages)

Bidders must provide an organizational chart and structure of how the bidder plans to staff the Pilot. This should include any partners or subcontractors as part of the team. In addition, short bios should be provided for members of the core management team that will be interfacing with the PacifiCorp team.

Company Diversity Policies and Procedures

(2 Pages)

Bidders must provide a discussion on current internal diversity policies and diversity supplier initiatives within the Company and any relevant partners or subcontractors. If the bidder (or its subcontractor(s)) is a registered and certified diversity enterprise, identify which diversity classifications apply and which agency or organization issued the certification.[14]

[13] Please indicate whether the references need prior notice by you before PacifiCorp contacts them.

[14] For further details, see PacifiCorp's supplier diversity page: https://www.pacificorp.com/suppliers/supplier-diversity.html

Proposed Alternative Approaches & Additional Information (Optional)

(4 pages)

PacifiCorp will prioritize reviewing content in the main body of the proposals. However, this section is optional and is dedicated "open space" that bidders can use to describe parts of their proposal that may not fit into other sections or that require additional space. This could include a description of proposed alternative approach(es) to the program design, certain exceptions or assumptions, additional visuals or data, or simply other topics PacifiCorp should consider for the Pilot. It should be limited to no more than four pages.

Appendix A: Pacific Power's Service Area Details

Figure 1. Pacific Power Service Area Map[15]

[15] See online version: https://www.pacificpower.net/content/dam/pacific_power/doc/Business/PPonly-Big-ServiceAreaMap-2015-NoFacilities.pdf

Table 4. Washington Zip Codes Served by Pacific Power

98908	98930	98951	99350	99363
98938	98903	98944	98935	98923
99362	98902	99347	99329	98920
99324	98901	98921	99348	99323
99361	98937	99328	99360	98939
98948	98942	98947	98952	98603
98932	98953	98936	98933	

Table 5. Oregon Zip Codes Served by Pacific Power

97211	97526	97205	97862	97336
97212	97537	97443	97826	97065
97217	97504	97875	97447	97810
97213	97479	97812	97462	97331
97218	97530	97818	97868	97250
97220	97535	97760	97622	97029
97103	97502	97121	97544	97050
97138	97524	97039	97484	97429
97388	97501	97364	97368	97329
97367	97470	97525	97627	97534
97420	97471	97624	97543	97377
97459	97457	97327	97317	97361
97414	97603	97432	97230	97531
97321	97322	97882	97360	97634
97355	97325	97828	97442	97335
97383	97146	97469	97411	97405
97385	97227	97523	97392	97842
97386	97857	97539	97838	97626
97330	97630	97408	97632	97635
97232	97541	97496	97358	97625
97370	97352	97040	97633	97371
97338	97209	97446	97639	97486
97448	97110	97846	97215	97145
97424	97333	97520	97344	97016
97703	97532	97304	97102	97204
97601	97458	97761	97466	97494
97701	97503	97345	97374	97306
97702	97201	97417	97522	97058
97754	97753	97538	97497	97041
97756	97216	97410	97813	97347

97741	97623	97346	97621	97731
97031	97389	97540	97886	97302
97801	97351	97456	97348	97604
97885	97734	97495	97536	97033
97527	97426	97423	97835	97384
97254				

Table 6 summarizes the *approximate* number of existing Pacific Power customers by state and customer class, as of March 2023 year-to-date. These approximate estimates are for informational purposes only and do not supersede information presented in formal filing(s) relating to customer counts.

Table 6: *Approximate* Number of Customers – Pacific Power

State	Residential	Commercial & Industrial	Irrigation
California	36,000	7,000	2,000
Oregon	539,000	72,000	9,000
Washington	114,000	17,000	5,000
Total	**689,000**	**96,000**	**16,000**

Appendix B: Planning Assumptions

This appendix provides the planning assumptions that PacifiCorp used in its program applications. Bidders are expected to use these assumptions in their bid when possible and may need to explain how and why they deviated from them.

EV Adoption

The next two tables below show how EV adoption has grown since 2010 and is forecast to continue to grow through 2028. Table 9 then shows the EV and plug-in hybrid EV (PHEV) OEMs that have historically made up that adoption, through 2022.

Table 7. Historic EV Adoption by State, as End-of-Year Estimates

State	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
OR	32	111	231	424	683	970	1,512	2,247	3,421	4,903	7,687	9,859	13,818
WA	0	7	35	71	110	139	196	272	351	406	348	605	865
Total	32	118	266	495	793	1,109	1,708	2,519	3,772	5,309	8,035	10,464	14,683

Table 8. Forecast of EV Adoption by State, as End-of-Year Estimates

State	2023	2024	2025	2026	2027	2028
OR	18,311	23,973	31,044	40,501	53,299	70,279
WA	1,127	1,455	1,887	2,455	3,209	4,198
Total	19,438	25,428	32,931	42,956	56,508	74,477

Table 9. Electric Vehicle Manufacturers' Market Share of EVs and PHEVs in PacifiCorp's Oregon Service Area, 2022[16]

Manufacturer	Market Share (%)
Tesla	30.9%
Chevrolet	12.1%
Toyota	11.3%
Nissan	9.1%
Ford	7.4%
BMW	4.1%
Kia	3.9%
Hyundai	3.7%
Volkswagen	2.5%
Volvo	2.4%
Others*	12.6%

[16] Oregon Department of Motor Vehicles. Data not available for Washington. This can be reasonably applied to Washington *The remaining 67 EV and PHEV carmakers each represent less than 2% of the market share, at an average of 0.2%.

Discussion about EV load

PacifiCorp recognizes that, absent intervention via price signals, TOU rates, or a managed charging program, EV owners are likely to charge their vehicles during peak hours. The daily weekday load shape for residential EV charging from the Northwest Power and Conservation Council (NWPCC) Regional Technical Forum (RTF) (Figure 2)[17] and the home charging load shape from the Smart Electric Power Alliance (SEPA) (Figure 3, grey line)[18] provide two examples of typical residential customers' EV charging load shapes. Both of these load shapes coincide with PacifiCorp's system peak hours, which occur from 5:00 p.m. to 10:00 p.m. on weekdays in July, August, and September and from 6:00 a.m. to 9:00 a.m. on weekdays in January and February.

Figure 2. Daily Weekday Load Shape for Residential EV Charging, NWPCC RTF

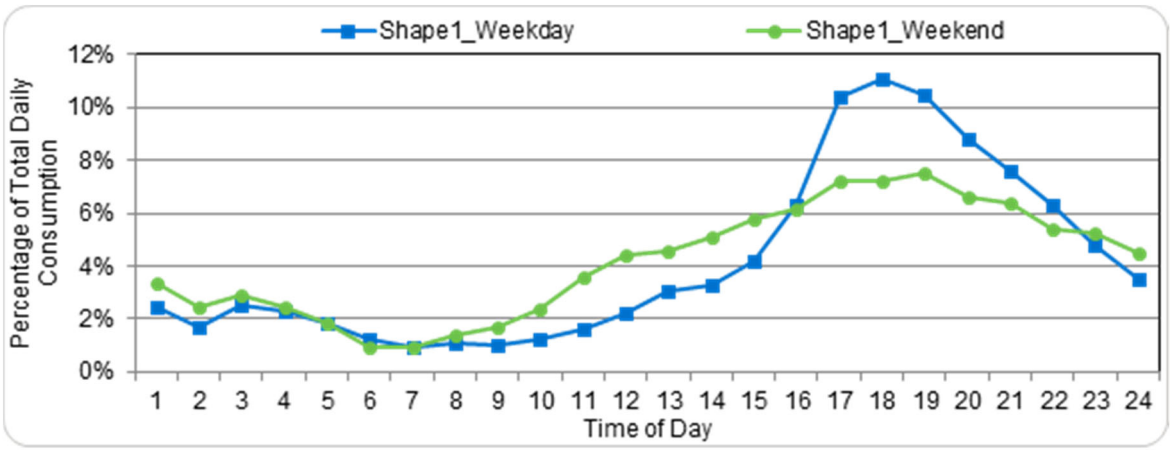
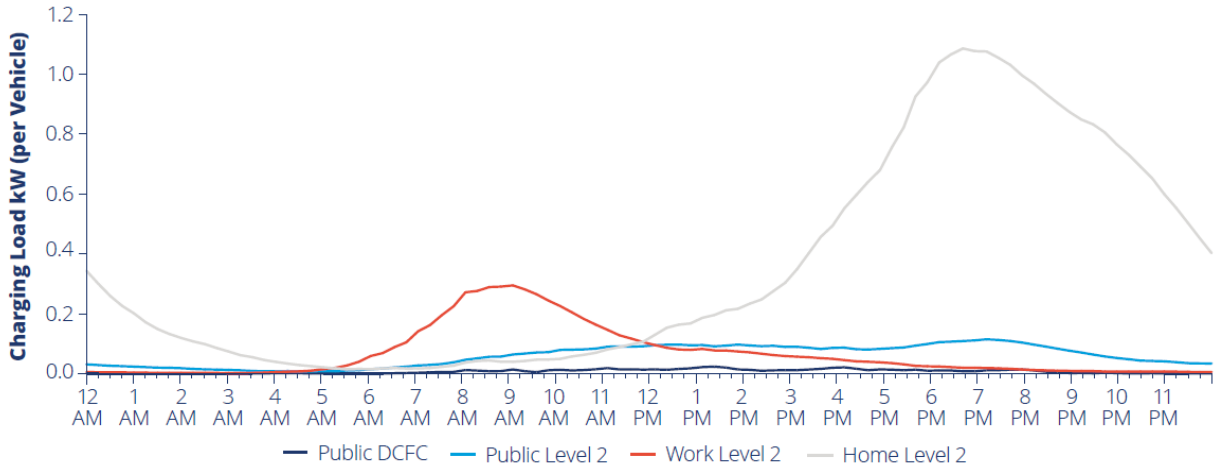


Figure 3. Load Shapes of EV Charging, SEPA



[17] Northwest Power and Conservation Council. Regional Technical Forum. RTF Load and Savings Shape v5.05, Residential Charging generalized load shape, R-All-Plug-EVSEChargeSave-All-All-U. Available online at https://rtf.nwcouncil.org/work-products/supporting-documents/procost/

[18] Smart Electric Power Alliance. *Managed Charging Incentive Design: Guide to Utility Program Development.* October 2021. See page 6. Available online: https://sepapower.org/resource/managed-charging-incentive-design/

For each participant, the Company assumed the Pilot shifts 100% of the charging expected to occur during peak periods to off-peak periods. Participants were assumed to have one EV, and each EV was assumed to consume 3,563 kilowatt-hours (kWh) per year. This consumption value is the average of the annual value published by Oregon DEQ Clean Fuels Forecast from 2017 through 2022.[19] PacifiCorp assumes the consumption in the state of Washington to be materially similar. Participants were assumed to be on a standard residential rate. Hourly charging impacts were determined via the residential charging load shapes shown above. Absent managed charging, residential EV charging predominantly occurs during the late afternoon hours, and largely coincides with summer peak hours. The RTF load shape provides a more conservative estimate of load shift potential per participant than SEPA estimates, which estimate the lower range to be approximately 1.4 kW of peak load shift, on average.[20] Determining the extent of load shift potential is a core learning objective of the Pilot.

Table 10 estimates total energy load enrolled in the pilot, and the expected impact to summer and winter peak capacity. Bidders should specify how many participants they expect to recruit by year in Exhibit B Pricing Template. Bidders should also specify the range of load under management they expect in 3-, 5-, and 10-year increments when filling out the form in Appendix D.

Table 10*:* Residential Managed Charging Pilot Annual Energy and Demand Impacts

State	Example Number of Participants	Total Energy Consumption at Site (MWh)	Reduction to Coincident MW (Summer)	Reduction to Coincident MW (Winter)
OR	1,500	5,345	1.18	0.13
WA	283	1,008	0.22	0.02
Total	1,783	6,353	1.4	0.15

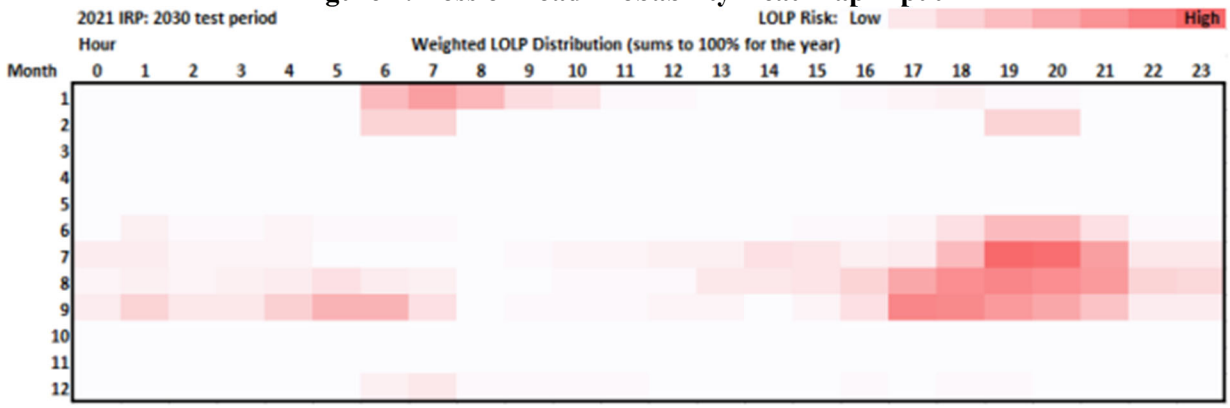
Appendix C discusses demand response background. Additionally, a loss of load probability (LOLP) study is expected to reasonably reflect the relationship between periods of high demand, and periods with low resources, as these are most likely to lead to loss of load conditions.[21] The hours with higher LOLP are shown shaded in red in Figure 4; DR events may be more likely to be called during these hours, though they may also be called because of grid events or emergencies occurring outside of these hours.

[19] "2022 Oregon Clean Fuels Forecast," Oregon Dept of Environmental Quality. Available online: https://www.oregon.gov/deq/ghgp/Documents/CleanFuelsForecast2022.pdf

[20] Smart Electric Power Alliance. *Utilities and Electric Vehicles: The Case for Managed Charging.* 2017. See pg 7. Available online: https://sepapower.org/resource/ev-managed-charging/

[21] PacifiCorp. On-Site Generation Study. June 2023. See section 4.4.1, starting on pg 20. Available online: https://puc.idaho.gov/Fileroom/PublicFiles/ELEC/PAC/PACE2317/CaseFiles/20230629Attachment%20No%201%20-%20On-Site%20Generation%20Study.pdf

Figure 4: Loss of Load Probability Heat Map Input



Assumed at-Home Charging

As discussed above, much of customers' EV charging is understood to occur at home:

- EV owners in PacifiCorp's Oregon service area charge their vehicles at home (as opposed to public- or work-place charging) an average of 89.5% of the time during a typical week, according to the Company's 2021 residential customer survey (n=1,155).[22]
- EV owners in PacifiCorp's Washington service area charge their vehicles at home (as opposed to public- or work-place charging) an average of 79.4% of the time during a typical week, according to the Company's 2021 residential customer survey (n= 68). [23]
- To-date, there have been more than 200 participants in PacifiCorp's Oregon EVSE Rebate program, for which there are currently nine qualifying OEMs. See Table 11 and also refer to the QPL.[24]

Table 11. Oregon EVSE Rebate Program – EVSE OEM Uptake

EVSE Manufacturer
Autel
BTCPower
ChargePoint
ClipperCreek
Electrify America LLC
Enel X Way North America
EnelXWay
EvoCharge
FLO

[22] PacifiCorp. *2021 Residential Survey. Q4 2021*. "Q19. During a typical week, what percentage of your plug-in electric vehicle charging occurs at the following locations?"
[23] Ibid.
[24] QPL documentation. Available online: https://www.pacificpower.net/content/dam/pcorp/documents/en/pacificpower/savings-energy-choices/electric-vehicles/Level_2_Home_Charger_Qualified_Products_List.pdf

Appendix C: Technical Background Information

The Pilot aims to shift at-home EV charging load to off PacifiCorp's peak via active load management, while also exploring the feasibility of layering in demand response capabilities and integrating with PacifiCorp's DERMS. The following summarizes the system and technical requirements the selected vendor is expected to meet or at a minimum explore during the Pilot, specifically related to Task 4.

a. "Geofence"

The selected vendor should be able to ensure that charging is actively managed only when the customer's EV is plugged in at a home within PacifiCorp's service area. There should also be protections in place that ensure the 12-volt battery is not drained due to too frequent "pings" to the vehicle when it is not connected to a charger or is outside the geofence.

b. Active Management: Remotely monitor, control, optimize, and forecast charging load

PacifiCorp anticipates including in the Pilot as many vehicle and charger types as possible. Bidders should clearly explain which vehicle and EVSE OEMs are supported in their platform and describe the nature of their relationships with those OEMs.

Monitor. The vendor should first be able to determine and display in real time various details about an EV that is connected to an EVSE within the geofence. PacifiCorp expects to be able to view the details in aggregate by state and other possible groupings. These details may include the following:

- Vehicle type
- EVSE type
- When the car is connected to EVSE
- When the car is actively charging
- What the charging load is (kW)
- State of charge of the battery (kWh)

The selected vendor will need to monitor and identify the opt out performance of the curtailable load, providing the Energy Supply Management (ESM) team a clear indication for how much load shift they can expect at any time. This will be something that will need to be tracked over the course of the pilot.

Control. The vendor should then be able to control the charging load via OEM telematics and EVSE. This should mean turning on and off the load and, optionally, "throttling" the load (i.e. reducing the flow) if possible. PacifiCorp expects to be able to push at least 75% of the charging load to off-peak hours.

As mentioned in the introduction, PacifiCorp is aware that other strategies exist for actively managing charging load, including use of third-party apps, like SmartCar, smart connectors / plugs, or onboard plug-in ports. Additionally, some managed charging programs layer in

"passive" or "behavioral" intervention techniques.[25] Bidders should clearly describe which technologies and approaches they will use for the Pilot. Understanding how results differ by strategy will be a learning objective of the Pilot.

PacifiCorp should have the ability to define the charging schedule at the individual EV-level and ultimately by groupings of EVs: either geographically and/or by characteristics. The charging load should be available to controlled 24 hours a day for all 365 days of the year. The selected vendor should have the capability to spread the redistributed load over several hours on an optimized schedule determined by the Company, so as to avoid creating a new peak(s) when pushing out the charging load. If possible, please provide an explanation or visualization of the resulting load shape you anticipate creating as a result of the active management from the Pilot.

The vendor should be able to ensure that each EV maintains a minimum charge level at the time it is needed and that customers can easily override and opt out of the active management.

Optimize. PacifiCorp is interested in exploring whether the vendor's technology can optimize EV charging in response to a dynamic, real-time "signal," such as a price signal, market condition, or the amount of renewable generation on the system.[26] Bidders should describe how the managed charging can be optimized and automated in response to various signals, if at all.

Forecast. This capability would allow PacifiCorp to view how much load is estimated to be available at the hourly level and by various device groupings for the current and subsequent calendar month.

c. Explore linking managed charging to distribution system operations

One learning objective of the Pilot is to investigate the impact of EV load on distribution system planning and expenses. Bidders can refer to the Oregon DSP Part Two study for details about how EV adoption is forecast to impact PacifiCorp's distribution system in the near term.[27] Bidders should explain the degree to which their platform can manage EV charging at the distribution system level, if at all, from the substation level down to the service transformer level and respond to localized grid events.

d. Explore incorporating demand response capabilities into the Pilot

In recent years, PacifiCorp has expanded the manner in which demand response programs are dispatched *(i.e.,* use cases) beyond day ahead notice for shifting load from peak to off peak or interrupting peak load for 1-4 hours to include shorter notice events, including one-hour duration contingency reserve interruptions and fifteen-minute duration frequency response events.

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[25] Examples of a behavioral interface include peer comparisons (eg comparing a household's energy usage those in their neighborhood), near real time feedback, tips, a score, positive reinforcement (eg sending congratulations for a high score), insightful and enticing visualizations, etc.

[26] PacifiCorp references the CAISO Business Practices Manuals for delivering DR Events. Bidders should review this manual when responding to the DR requests. BPM: Direct Telemetry, Metering, and Demand Response and Conformed CAISO Tariff.

[27] PacifiCorp. Oregon Distribution System Planning, Part Two. 2022. See pages 44-48. Available online: https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/dsp/2022_PacifiCorp_Oregon_Distribution_System_Plan_Report_Part2.pdf

As described in the General Program Overview section, one of the Pilot's learning objectives is to explore how managed charging could be integrated within the Company's existing DR portfolio. This would mean adding capabilities beyond daily load shift to off-peak hours. PacifiCorp acknowledges that if the daily load shift is done correctly and fully, there may be little to no load to curtail during a DR event if it occurs during peak hours. However, DR events, especially those triggered by grid emergencies, can occur during off-peak hours and there is still value in having contingency reserves.

As PacifiCorp's generation portfolio becomes increasingly renewable with inherently greater variability, the speed, seasonality and firm characteristic of the control that some DR resources can provide are anticipated to become more valuable to the system depending on how closely those characteristics align with need. The grid services a resource can fulfill are described below in Table 12. Each of these services is essential to balancing grid needs but due to the dynamic nature of the grid, services can be more or less valuable from day to day and hour to hour. The value of these services will also vary year to year as the mix of resources changes, impacting the amount and type of services needs to integrate those resources with load. As a result, PacifiCorp will determine which services a demand response resource will be used for in any given period, within that resource's capability.[28]

Table 12: Balancing Area Grid Service Requirements

Grid Service		Definition	Sub-Group	Performance Specifics for Demand Response
Operating Reserves	Contingency Reserve	Used for compliance with NERC regional reliability Standard BAL-002-WECC-2a. Deployed immediately following unexpected outages of generation or transmission. Requirement is 3% of load and 3% of generation.	Non-Spinning Reserve	Deploy with less than 7.5-minute notice for 60 minutes. Not deployed in EIM.
			Spinning Reserve	Must begin responding in seconds, with full response in ten minutes, sustained for 60 minutes. Not deployed in EIM.
	Regulation Reserve	Used for compliance with NERC Control Performance Criteria in BAL-001-2. Deployed in response to variations in load and generation to manage Area Control Error.	Regulating Reserve	Deploy in no more than 30 minutes. Not deployed in EIM.
			EIM – RTPD	EIM 15-minute market. Deploy when called by EIM with 22-minute notice.
			EIM – RTD	EIM 5-minute market. Deploy when called by EIM with 5-minute notice.
	Frequency Response Reserve	Used for compliance with NERC standard BAL-003-1. Deployed during interconnection underfrequency events.		Must respond within seconds, for five minutes, with restoration within 15 minutes. Can be provided simultaneously with spinning or regulation reserve.
Capacity and Energy		Capacity and Energy Resources can help serve expected loads. Load and resources must be balanced. This may include modeling the resource as average ELAP LMP.		Deployed on day-ahead or hour-ahead basis. Duration of one or more hours.

- NERC – North American Electric Reliability Corporation
- EIM – Energy Imbalance Market
- RTPD – Real-Time Pre-Dispatch
- RTD – Real-Time Dispatch
- ELAP – EIC Load Aggregation Point
- LMP – Locational Marginal Prices

[28] As referenced above, please refer to CAISO Business Practices Manuals. Bidders should review this manual when responding to the DR requests. BPM: Direct Telemetry, Metering, and Demand Response and Conformed CAISO Tariff.

The relative value of demand response programs to the system is dependent on their performance characteristics, with more value when the Company has greater flexibility. Table 13 identifies the minimum requirements for this RFP and the program performance characteristics which are likely to provide greater value. Program performance characteristics that are expected to have the greatest impact on valuation are listed first.

Table 13: DR Capability Relative Value by Performance Characteristic

Program Performance Characteristic	Minimum Characteristic for RFP	Greater Value
Notice	Day Ahead	60 min, 22.5 min, 7.5 min, <2 sec
Cancellation notice	Day Ahead	Hour Ahead to no restriction
Ramp to Available Demand Reduction*	1 hour	60 min, 22.5 min, 7.5 min, < 2 sec
Duration of Curtailment	1 hour / event	Shorter or longer duration as specified by PacifiCorp
Total Number of Events	10 events per season/year	More events per season/year
Event Frequency	1 per week	More events per day/week
Total Load Shed Capability	0.5 MW	25 MW or larger
Targeted Curtailment Capability	All participants / full load shed only (on/off)	Ability to follow changing targeted curtailment amount
Time for Program Growth to Total Load Shed Capability	3 years	Faster growth

*Ramp time means the total time from when the event is called or triggered to when the load is fully curtailed, including telemetry and customer notice, if applicable. For the faster ramp times, DR dispatch would need to be automatically triggered, as opposed to manually scheduled by a human operator. Note that PacifiCorp may decide to group use cases and dispatch times into a single DR use case.

Variations in program designs for the same customer end use demand can achieve different levels of controllability, leading to greater or lesser system value at differing costs. As a result, programs that achieve a subset of the capabilities identified above and do not require significant setup costs may be more cost effective than programs which can meet every use case. For this RFP, PacifiCorp expects that bidders will consider their cost to deliver the performance characteristics identified in Table 12 in designing their offerings. For this RFP, bidders are asked to describe how their proposed program complies with the requirements for the use cases identified in Table 11 they expect to be able to provide, if at all. To answer this question, bidders are required to fill out the program characteristics listed in the table in Appendix D, with one column of responses for telematics and a second column for EVSE.

Note that PacifiCorp may need to also pursue the availability of "System Emergency Dispatch" from this Pilot. This means that, in the event of a system emergency, PacifiCorp may, at its discretion, expand the dispatch parameters of this resource. Emergency events may be used to satisfy requirements of the North American Electric Reliability Corporation standard BAL-002-WECC-2 for Contingency Reserve Obligation and may be deployed when the utility is experiencing a qualifying event as defined by the Western Power Pool.

e. Explore EV detection modeling

As stated in the Objectives & Expected Outcomes section above, PacifiCorp plans to develop a strategy for EV detection modeling. This implies leveraging customer and energy data to detect (within a reasonable margin of error) which PacifiCorp customers own and regularly charge EVs at home. The

benefits of this modeling would be to more effectively target marketing and outreach to the right customers and with the right messaging. To determine EV owners in the past, PacifiCorp has used Department of Motor Vehicle (DMV) data, which has information about the address of the vehicle registrant. However, there can be a time lag in that data and it may not always reflect at-home charging. Additionally, PacifiCorp has AMI meters deployed in homes in the Company's Oregon service area, though not yet in Washington.[29]

Some stakeholders have expressed data privacy concerns about leveraging EV detection modeling. The vendor should have a plan to address those and ensure that handling this modeling and communications with customers about the results of the modeling is done carefully, responsibly, and within the confines of state rules and regulations.

The vendor should explain their approach to how they would develop a plan for EV detection modeling. Note that there is a line item in Exhibit B Pricing Template to document if this will cost extra. Please also include the development timing considerations in the Proposed Timeline section.

f. Explore integrating program data into PacifiCorp's DERMS

PacifiCorp uses OSI Monarch for its DERMS to model distributed energy resources (DERs), aggregate resources, model parameters, schedule and trigger dispatch, and calculate balancing authority bias, along with other use cases. Eventually all DERs will be connected to the DERMS to provide a "single pane of glass" through which to view PacifiCorp's grid operations in real time.

An expected outcome of the Pilot is to complete a feasibility plan to transfer Pilot data to the Company's existing and future energy management systems and dashboards, including its DERMS. The vendor should be prepared to explore the requirements defined by PacifiCorp's Grid Operations team, an effort which is expected to be front-loaded during the Pilot implementation period. These requirements may include a clearly articulated telemetry reporting interval on par with the use case and dispatch speed and with details about opt out and performance, as described above.

Depending on how the DER is classified and the speed with which the resource can be dispatched, the integration may require using OpenADR and/or a signal from a remote terminal unit(s) (RTU). The integration into DERMS will allow for both feedback telemetry and the ability to dispatch the DER automatically. This would be especially important if the expected use case of the resource were classified as one of the operating reserves (see Table 12).[30] Bidders should clearly articulate their approach for integration, the extent to which they are familiar with the OADR and RTU methods, and if they have done a similar integration in the past.

Note that there is a line item in Exhibit B Pricing Template to document if this will cost extra. Please also include the development timing considerations in the Proposed Timeline section.

[29] PacifiCorp accounts may be limited to one hour sampling for the vast majority of accounts.
[30] As referenced above, please refer to CAISO Business Practices Manuals for delivering DR Events. The vendor should review this manual when responding to the DR requests. BPM: Direct Telemetry, Metering, and Demand Response and Conformed CAISO Tariff.

Appendix D: Demand Response Characteristics Form

Bidders shall fill out the two blank columns on the right in the form below to describe how the Pilot would be able to respond to DR for EV load controlled using both the telematics and EVSE channels. The column for Description Options indicates the choices available to select for each characteristic. Please reference Table 12 and Table 13 for background about DR definitions and use cases.

Program characteristics	Description Options	Vendor Response: Telematics Control	Vendor Response: EVSE Control
kW Availability in Year	Timing of demand availability, seasonal or year-round		
Metering requirement	AMI, other option, none		
Notice	Day ahead, 60 min, 22.5 min, 7.5 min, <2 sec		
Cancellation notice	[if applicable]		
Ramp time*	1 hour or less		
Max Duration of Curtailment	1 hour or more		
Min Duration of Curtailment	[if applicable]		
Number of Events	10 or more, and any daily, weekly, or seasonal restrictions		
Event Frequency	1 or more per week of availability		
Range of kW Capability in 3, 5 10 years**	Min & max kW capability in 3 years (ie by end of 2026), 5 years (end of 2028), and 10 years (end of 2033)		
Proposed Use Cases	☒ Capacity and Energy (applicable to all programs) ☐Non-Spinning Reserve ☐ Spinning Reserve ☐ Regulating Reserve ☐ EIM – RTPD ☐ EIM – RTD ☐ Frequency Response Reserve		

* Ramp time means the total time from when the event is called or triggered to when the load is fully curtailed, including telemetry and customer notice, if applicable. For the faster ramp times, DR dispatch would need to be automatically triggered, as opposed to manually scheduled by a human operator.

**Please indicate the key factor(s) that influence the range of kW you assume at each time interval.

Appendix E: Cyber Security Questionnaire

Bidders shall complete the questionnaire, per instructions.

BERKSHIRE HATHAWAY ENERGY®

CYBER SECURITY REQUIREMENTS

Form version 9.1, as of January 27, 2023

Please complete 1) the Vendor Identification Field, immediately below, and 2) the Questionnaire, with confirmations and answers to questions in-line to text. Questionnaire should be completed by a vendor security professional.

Vendor Identification
Vendor Company Name: Click here to enter text.
Vendor Professional Name: Click here to enter text.
Vendor Professional Title: Click here to enter text.
Vendor Professional **email address**: Click here to enter text.
Date of Response: Click here to enter text.

Proposals must meet the following security-related criteria in order to be considered:

General Security Criteria

1. Please confirm you have and maintain security controls no less rigorous than those set forth in the latest published versions of recognized cybersecurity frameworks such as:

    a. ISO/IEC 27001 – Information Security Management Systems–Requirements, and ISO/IEC 27002 – Code of Practice for International Security Management (collectively, ISO 27001)

    b. National Institute of Standards and Technologies Cybersecurity Framework (NIST-CSF)

    c. Cybersecurity Maturity Model Certification (CMMC) at Level 2 or higher

    d. HiTRUST

    e. The Federal Risk and Authorization Management Program (FedRAMP)

2. Please confirm that all your employees are required to utilize multi-factor authentication for remote access to your company networks, all externally accessible resources such as SaaS services, and company email that complies with National Institute of Standards and Technologies Authentication Assurance Level 2 or higher.

3. Describe your supported authentication mechanisms. Note that multi-factor authentication by SMS text message or email will not be accepted.

4. Please confirm you encrypt Company data while at rest by disk encryption, as well as encrypted when in transit over any network, e.g. by secure file transfer protocol (sFTP) or applicability statement 2 (AS2).

5. If files will be transferred to or from the Company, please confirm you support the encrypting and signing of transfer files via Gnu Privacy Guard (GPG), Pretty Good Privacy (PGP), or similar.

6. For questions 2 through 4 above, please confirm all encryption uses NIST-approved algorithms, key lengths and cryptoperiods, e.g. AES-256 or RSA at 2048 bit key strength with a two-year key lifetime.

7. If the service requires the Company to authenticate via web interface or mobile application, please confirm you support federated single-sign-on (SSO) authentication from Azure Active Directory.

8. Please confirm that your Outbound Email ("Outbound Email" defined as email from the Supplier and any Services provided under the Contract to the Company): Originates from a domain(s) with a published and functional Domain-based Message Authentication, Reporting and Conformance (DMARC) policy of "reject" and with a published Sender Policy Framework (SPF) policy consisting of valid senders and a "fail" directive (-all). If the optional DMARC "pct" directive is used, "pct" must be set to "100". Note that these protections for Outbound Email are required regardless of your scope of service to the Company.

9. Please confirm, by provision of supporting documentation, that you sign Outbound Email by a DomainKeys Identified Mail (DKIM) 2048 bit key. Note that these protections for Outbound Email are required regardless of your scope of service to the Company.

10. If you cannot currently meet requirements for Outbound Email, please confirm you will meet requirements #7-9 for Outbound Email within twelve (12) months of the date of this review. Note that confirmation of this compliance will be validated by public-facing tools.

11. Please describe your process to disclose known vulnerabilities to the Company related to products or services provided as they pertain to the proposed service.

12. Please describe how you verify software integrity and authenticity to the Company for any software or patches provided by you as they pertain to the proposed service.

13. Please describe your process for security event monitoring and notification/alert/response plans, including response to security incidents affecting the Company.

14. Please confirm you will notify the Company of a security incident as soon as practicable, but no later than 48 hours after discovery.

15. Please confirm you will coordinate responses to security incidents with the Company that pose a security risk to the Company.

16. Please confirm that all rights to any data provided by the Company shall remain exclusive property of the Company.

17. Please confirm you will not share data with third parties for unrelated commercial purposes, such as advertising or advertising-related purposes.

18. If you require network access of any type into Company systems or networks as part of the service, please fully describe your requirements for network access or data flows.

19. If you require network access of any type into Company systems or networks as part of the service, and if a virtual private network is required, please confirm your ability to terminate in a demilitarized zone network (DMZ). Note that direct virtual private network connectivity to Company corporate networks is always prohibited.

20. If you require remote access of any type into Company systems or networks as part of the service, confirm your ability to conform to Company requirements for intermediate host methods for remote access, such as Citrix or Virtual Desktop,

21. If you require remote access of any type into Company systems or networks as part of the service, confirm that you will notify the Company when remote or on-site access is no longer needed by your representatives, where applicable.

22. Please list facilities proposed in bid located outside the continental United States.

23. Please list any support staff used during the term of this contract located outside the continental United States.

24. If you provide a software product or service, please confirm that you can provide a Software Bill of Materials (SBOM) upon Company request.

25. Please describe your methods to securely ship and deliver products to the Company as they pertain to the proposed service.

For Software as a Service (SaaS), Hosted / Cloud Services, Web Portal or Other Supplier-Hosted Services:

26. If your service is comprised in whole or in part of a cloud-based or hosted services solution, please confirm you currently undergo, or are willing to undergo, annual Statement on Standards for Attestation Engagements (SSAE) Service Organization Control (SOC) 2 Type 2 audits ("Audit") for your enterprise or covering the scope of services for the term of the contract with the Company, as appropriate. Note that a datacenter audit alone will not satisfy this obligation. You may include an audit for datacenter/colocation provider for informational purposes.

27. If your service is comprised in whole or in part of a cloud-based or hosted services solution, please confirm that your administrative access complies with NIST SP 800 63-3 Digital Identity at Authentication Assurance Level 2 or higher, where compromise of one factor does not contribute to compromise of the other factor. Provide compliance documentation and describe supported authentication mechanisms.

28. If you provide a web portal or web service, please confirm that web services use HTTPS/TLS version 1.2 or later for all content.

29. If you provide a web portal or web service, please confirm you develop and test controls according to the Open Web Application Security Project (OWASP) Application Security Verification Standard.

30. Does your solution require supplier-hosted accounts?

31. If your solution requires supplier-hosted accounts, do you have provisions to check passwords against values known to be commonly used, expected or compromised?

32. If your solution requires supplier-hosted accounts, do you offer multi-factor authentication?

33. If you solution requires supplier-hosted accounts, and offers multi-factor authentication, what forms of multi-factor authentication do you offer?

34. If your solution requires supplier-hosted accounts, and offers multi-factor authentication, is multi-factor authentication required?