

2024 Local Utility-side Interconnections Request for Information

I. Introduction and Purpose

Salt River Agricultural Improvement and Power District (SRP) is issuing this Request for Information (RFI) to solicit information regarding the installation of distributed solar and/or energy storage systems interconnected directly on SRP's distribution system. SRP is seeking responses from solar and/or storage installers, financing entities, and any other interested parties. Two or more entities may submit a combined response if desired.

The purpose of this RFI is to determine what viable installation, aggregation, communication, and financing models exist for distribution connected solar and/or storage systems that could help SRP meet its 2035 goals while minimizing cost impacts to its customers. With this RFI, SRP is seeking to understand the interest in, and potential for, such systems. Depending on information gathered through this RFI, SRP may issue a Request for Proposal (RFP) at a later date.

II. Background

SRP is a community-based, not-for-profit organization providing affordable water and power to more than 2 million people in central Arizona. SRP has been serving the Valley for more than a century to meet customers' needs and help the Phoenix area develop into one of the nation's most vibrant regions. As a community-based not-for-profit water and energy utility company, SRP acts in the best interest of the people it serves and strives to help build a better future for Arizona.

SRP Facts

- Electric service territory: Phoenix metropolitan area primarily located in Maricopa County and Northern Pinal County
- Number of electric customers: 1.1M+
- Summer peaking system: 8,000+ MW

SRP's service territory is experiencing explosive growth. Maricopa County is one of the fastest-growing counties in the nation. This significant growth, increasing interest from customers in serving their energy needs with carbon-free resources, and SRP's commitment to reducing carbon emissions are driving a need to add significant carbon-free resources to our generation portfolio. Over the next decade, SRP anticipates needing to add thousands of megawatts (MWs) of solar and over a thousand MWs of battery storage. SRP has experience with large, utility scale solar and storage systems connected to the transmission system, as well as customer sited rooftop and/or battery installations that are primarily focused on offsetting behind-the-meter customer load. SRP is interested in exploring projects, connected directly to its 12kV distribution system that SRP can control to potentially improve flexibility, reliability and resilience.

III. Project Requirements

- Potential projects can be solar, storage, or combined solar and storage.
- Potential projects would interconnect to SRP's distribution system which is 3-phase alternating current (AC) at 60 hertz (HZ). Projects could connect at either the 12kV primary or secondary or customer side of the transformer.
- Potential projects may be located on undeveloped sites or developed private property (e.g., rooftops, parking structures, or dedicated structures) as long as the project is connected in front of the meter. SRP does not have specific locations or customer sites identified and does not intend to contact customers or share customer information. **SRP requests that no customer outreach be performed as part of identifying potential locations for this RFI.** Should SRP proceed with an RFP, SRP would coordinate with project partners and customers to discuss potential projects.
- Potential projects can be single, stand-alone projects, or multiple projects aggregated together:
 - For single, stand-alone projects:
 - Projects must be a minimum of 1MW at the point of interconnection. For projects connected to a shared distribution feeder, current SRP Standards limit projects to 3MW. If connected to a dedicated 12kV distribution feeder, SRP may consider projects up to 10MW.
 - Projects must be able to interface with SRP's Supervisory Control and Data Acquisition (SCADA) system using Distributed Network Protocol 3 (DNP3) Application Note AN2018-001 or Institute of Electrical and Electronics Engineers (IEEE) 2030.5 to allow for SRP visibility and control.
 - Projects would be managed by SRP's Distributed Energy Resources Management System (DERMS) made by Open Systems International (OSI).
 - Consistent with SRP's existing interconnection requirements of 1MW and above, an ethernet TCP/IP connection into the inverter or plant system controller device (at minimum) is required.
 - For aggregated projects:
 - Each individual project at point of interconnection must be no greater than 999 kW.
 - The combined size of aggregated projects must be at least 1 MW.
 - Potential aggregation solution would be integrated with SRP's DERMS made by OSI.
 - Potential aggregation solution must be able to either interface over SRP's SCADA and be compliant with the DNP3 Application Note AN2018-001 or interface over open standard protocols: IEEE 2030.5 or OpenADR.
- All projects must support IEEE 1547 DER functions.
- For projects that include battery systems, SRP preference is to have a minimum

duration of 4-hours at full capacity and to allow for one full cycle per day. SRP's intended use of the battery would be to shift solar generation to later in the evening to support system net-peak and/or ease local congestion.

IV. Information Requested

Responses should be submitted as a PDF or Word document. All responses should include the following information on the first page:

- Name(s) of Firm(s)
- City and State of Firm(s)
- Firm Website(s)
- Contact Person Name & Title
- Contact Person Email
- Contact Person Phone

In your submittal, please provide responses to each item separately and indicate the item number you are responding. Respondents do not need to respond to all RFI items below. Respondents are welcome to limit their response to only those items that they believe their experience and expertise can best inform.

Company Background

1. Provide company description.
2. Provide relevant experience with similar solar and/or storage projects of this scale, preferably connected directly to a utility's distribution system:
 - a. Project details: Solar and/or storage technology, size, installation date, method of communication and control
 - b. Project operational performance: Any unplanned outages and how they were tracked and reported, capacity degradation, guarantee of project performance over time.
 - c. Project data collection: What plant data was collected and delivered to the utility and for what purpose did the utility request and use this data?
 - d. Project installation: Were you able to complete installation within the committed timeline? Have you experienced any delays with receiving materials or equipment that impacted project schedule and, if so, how was it mitigated?
 - e. For battery storage projects, details on any coordination with first responders.
 - f. Plan for end of life of the project.

Technology Information

3. Solar: Provide description of the technology you would use including reasoning behind doing so.
 - a. Fixed tilt, single axis tracking, or combination of both
 - b. Monofacial or bifacial
 - c. Installation: rooftop, parking structure, greenfield, other?

- d. Size: MW DC, MW AC and projected MWh generated (specific number or range acceptable)
 - e. Land space/rooftop space required (specific or square footage per kW).
- 4. Storage: Provide description of the technology you would use including reasoning behind doing so.
 - a. Battery technology including battery chemistry and manufacturer if known
 - b. Battery size: MW and MWh (specific number or range acceptable)
 - c. Round-trip efficiency
 - d. Any limitations to how the battery operates (cycles/day, cycles/year, state of charge, etc.)?
 - e. Land space/rooftop space required.
- 5. Combined solar plus storage installations: In addition to items above for stand alone solar or storage, provide details on the following:
 - a. DC or AC coupled system
 - b. Solar size to battery size ratio
 - c. Max system output: MW
 - d. Projected combined system output: MWh.
- 6. Aggregator: If recommending to install multiple solar and/or storage projects, provide a description of the aggregation solution you would use to allow for visibility and control of the multiple installations. How would SRP initiate control call of the resources? Measurement and verification would be expected, SRP would want to know current state and the capacity available of individual resources and total aggregated resource at any given time. SRP expects 24/7 support to maintain control over the resource(s).
- 7. Communication: If recommending to install and aggregate multiple solar and/or storage projects, outline the communication approach that would be used from the DER to SRP. Details for communication shall include what type of network would be used, who would own the connection to the DER device (example: gateway connected to inverter based resource), what protocol would be used (SRP prefers DNP3 Application Note AN2018-001). How would SRP interact with the projects?
- 8. Estimated project lifetime. For storage, if this varies based on operation, please specify.

Installation Information

- 9. What would the interconnection of the project(s) look like? Would you interconnect the project(s) to SRP's primary distribution or transformer secondary? Provide a general schematic of the system installation including solar and/or storage configuration, interconnection, communication and controls
- 10. How would you recommend going about identifying potential/ideal sites? Provide a representation of what the potential site(s) may look like in SRP's service territory for the technology specified in responses to questions 3 through 7.
- 11. For sites on an SRP customer's property, describe the process you recommend for engaging with customers to identify if they are interested in participating.
- 12. For sites on an SRP customer's property, how would you work with the owner to use their property?

13. Provide a rough timeline of project installation from site identification to commercial operation.
14. For projects installed on an SRP customer's property, describe any concerns or challenges with installation, access, operations, etc.

Ownership and Financing Information

15. SRP is open to multiple ownership and financing models (e.g., direct ownership, third-party ownership with power purchase agreement). Please specify the ownership model you would recommend, reasoning behind why, and what it would look like.
16. If located on a third party's property, what payment or incentive model would you recommend for compensating the owner?

Cost Information

17. While SRP is open to different ownership and financing structures, please provide all-in cost estimate on a \$/kW basis broken out by component (specific value or range acceptable here):
 - a. Solar
 - b. Storage
 - c. Balance of system (specify what this includes)
 - d. Customer acquisition and payment for use of land or rooftop
 - e. Other (specify what this includes)
18. If proposing aggregating multiple systems, please provide any details around the cost reduction due to the economies of scale for multiple similar systems for your proposed aggregation scale versus a single system.
19. Describe any potential tax credits the project(s) would qualify for that are incorporated into the costs above.
20. Detail any other assumptions made in developing the cost estimates.

Safety and Decommissioning

21. Describe any environmental impacts and/or permitting risks associated with the project and the associated mitigation plans.
22. Describe the end-of-life/decommissioning plan for the system and any associated disposal related issues, including hazardous materials and estimated fraction of the system that could be recycled.
23. What are the safety issues and associated safety measures provided/recommended for the technology?

Other

24. Are there any additional considerations you would like to share that were not covered in the previous questions? SRP may use this information to support design of a potential future RFP.

V. Schedule

The RFI process will proceed according to the following schedule:

- 1) RFI Issue Date
- 2) RFI Due Date

May 31, 2024
August 5, 2024

SRP reserves the right to adjust this schedule as deemed necessary.

VI. Submissions

The RFI process will be administered through Ariba, a web-based platform for hosting solicitations. All communications from Respondents to SRP, including questions regarding the RFI, must be submitted via the Ariba messaging system. Registered participants will receive an email with Ariba access instructions.