



SPECS

Solar-Plus for Electric Co-ops

Annotated Directory of Recent Requests for Information And Requests for Proposals

The following directory of recent requests for information (RFIs) and requests for proposals or offers (RFPs or RFOs) includes publicly available documents, mostly issued on behalf of electric co-ops or other consumer-owned utilities. The documents in this directory provide useful examples for comparison regarding the different approaches that utilities are using for storage or solar-plus-storage systems today. No endorsements or recommendations for best practices are offered here. Readers may reference the project Disclaimer on the project website [here](#). As noted below, a few of these documents illustrate lessons learned, and as such, they may not have resulted in completed projects. Readers must apply due diligence in deciding whether a given approach would be useful to their specific utility for a given project request.

Note that the absence of a listed consultant as a point of contact does not necessarily mean that consultant support was not used at some point in the RFP or procurement process. Further, any outcomes listed reflect a search for publicly available information; the status of some projects is still not known. Finally, regarding links provided, it is likely that the links downloaded in July 2021 will not be retained indefinitely by their sponsors. For this reason, the SPECS project has archived most of these documents on the Solar Value Project website on the [Solar-Plus/Procurement](#) page. SPECS wishes to recognize David Sarkisian of the North Carolina Clean Energy Technology Center (NCCETC) for research and support on this effort.

Solar Power Purchase Agreements (PPAs) with Storage Energy Service Agreements (ESAs) or Hybrid Procurements

AEPCO/Sierra Southwest Cooperative Services (Arizona) <https://aces-wpengine.netdna-ssl.com/wp-content/uploads/2021/04/Sierra-Southwest-2021-Battery-Energy-Storage-Systems-RFP.pdf>, more documents available at: <https://www.acespower.com/Sierra2021RFP/>

Issue Date: 4/21/2021

Technology: Standalone Storage and/or retrofit to existing 20 MW solar array

Grid Position: Front-of-the-meter (adjacent to coal and gas-fired generation facility)

Host: Distribution Cooperative

Utility Type: Cooperative (wholesale supplier)

Capacity: If standalone storage 25-75 MW, 2–4-hour duration; if solar retrofit 10-20 MW, 4 hour duration

Consultant: Alliance for Cooperative Energy Services Power Marketing (ACES) - <https://www.acespower.com/>

Contract Type: PPA/ESA

Use Case(s)/Value Stream(s): Black Start, Frequency Regulation, Peak Shaving, Energy Arbitrage, Contingency Reserves

Current Status: Aiming for COD between June 2022 and May 2023

Description: ACES issued this RFP in April 2021, with responses due by May 24, 2021. This RFP provides two possible proposal options; one is for a standalone storage system, and one is for a storage system retrofitted to an existing solar PV array. The use cases envisioned for the two systems are different; the use of the standalone storage system would include providing Black Start, Frequency Regulation, and Contingency Reserves as well as Peak Shaving and Energy Arbitrage, while the solar-coupled system would only be used for Peak Shaving and Energy Arbitrage. The difference in the use cases appears to be tied to the requirements needed to qualify for the federal Investment Tax Credit in the solar retrofit case. (To qualify for the tax credit, the system needs to be charged at least 75% from the solar array alone, possibly limiting its ability to provide some services.) Despite having clearly envisioned use cases, the RFP is quite flexible on other parameters. The RFP notably includes requirements for evaluation of the creditworthiness of the bidders. Supplemental documents include a solar generation profile for the existing PV system and soil chemical information for the nearby coal and gas-fired facility.

PowerSouth Energy Cooperative (Alabama) <https://www.powersouth.com/wp-content/uploads/2020/09/2020-PowerSouth-Solar-Optional-Battery-Storage-RFP.pdf>

Issue Date: 9/21/2020

Technology: Solar-Plus-Storage

Grid Position: Front-of-the-Meter

Host: Utility

Utility Type: Cooperative G&T

Capacity: 50 to 80 MW_{AC} Solar PV, 25 to 50 MW_{AC} battery storage (optional)

Consultant: No consultant

Contract Type: PPA/SSA

Use Case(s)/Value Stream(s): Energy, Ancillary Services, Environmental Attributes

Current Status: Desired completion by October 31, 2023

Description: PowerSouth Energy Cooperative issued this RFP in September 2020, with responses due by October 31, 2020. The battery storage component of the RFP is optional, with the primary portion of the RFP being for solar PV capacity. Specific use cases are not proposed by the RFP; it instead mentions that the purchase contract will include all energy, ancillary services, and environmental attributes from both the solar and battery systems.

Sulphur Springs Valley Electric Cooperative (Arizona)

<https://www.gdsassociates.com/wp-content/uploads/2020/07/SSVEC-Solar-and-Storage-RFP-2020-07-16.pdf>; Bidder Q&A - <https://www.gdsassociates.com/wp-content/uploads/2020/08/SSVEC-Solar-and-Storage-Bidder-QA-UPDATED-8-18.pdf>

Issue Date: 7/16/2020

Technology: Solar-Plus-Storage

Grid Position: Front-of-the-Meter (to be located next to a new utility substation, with the bidder providing all interconnection equipment)

Host: Utility

Utility Type: Cooperative

Capacity: 20 MW_{AC} Solar PV, 5-20 MW_{AC}, 2-4 hours duration battery storage

Consultant: GDS Associates <https://www.gdsassociates.com/>

Contract Type: Fixed-rate PPA/ESSA (but interested in exploring buy-out options)

Use Case(s)/Value Stream(s): Peak Shifting, Capacity and System Regulation (intends battery to be 100% charged by solar), environmental attributes

Current Status: COD scheduled for June 2022 (news article from January 2021 mentioned that the project was in its “final stages”: <https://www.fitchratings.com/research/us-public-finance/fitch-upgrades-sulphur-springs-valley-electric-coop-az-idr-to-a-outlook-stable-27-01-2021>)

Description: GDS Associates issued this RFP for Sulphur Springs Valley Electric Cooperative in July 2020, with responses due by August 25, 2020. This RFP clearly intends for the installed battery storage to be charged 100% by the installed PV system, so as to achieve the full ITC value; the main contemplated use case appears to be shifting the solar generation profile into the evening hours. The RFP is relatively open-ended. It includes a thorough list of topics on which it wishes bidders to provide information but does not specify requirements for many of these topics, giving bidders flexibility while still indicating that these factors will be relevant for evaluation.

East Bay Community Energy, Peninsula Clean Energy, Silicon Valley Clean Energy & Silicon Valley Power (California) RFP on file (see [Solar-Plus/Procurement](#))

Issue Date: 11/5/2019

Technology: Standalone Storage or Solar-Plus-Storage

Grid Position: Behind-the-Meter (located on customer premises)

Host: Customers

Utility Type: Community Choice Energy Aggregators and Municipal Utility

Capacity: Minimum of 32.7 MW (10 MW each for all except Silicon Valley Power; 2.7 MW for Silicon Valley Power)

Consultant: No consultant

Contract Type: PPA/SSA

Use Case(s)/Value Stream(s): Resiliency

Current Status: Not specified (selection of preferred awards was to occur in February 2020). The status of East Bay Community Energy Projects is updated at <https://ebce.org/power-projects/>

Description: East Bay Community Energy, Peninsula Clean Energy, Silicon Valley Clean Energy, and Silicon Valley Power issued this RFP in November 2019, with responses due by December 23, 2019. The primary use case for the storage capacity to be provided is to provide backup power to be used during Public Safety Power Shutoff (PSPS) events. The capacity to be provided will be sited to serve utility/CCE customers directly.

Central Virginia Electric Cooperative, City of Danville, and City of Martinsville (Virginia) <https://www.gdsassociates.com/wp-content/uploads/2019/05/VA-Solar-and-Energy-Storage-RFP-2019-May-31-new.pdf>

Issue Date: 5/31/2019

Technology: Standalone Storage and/or Solar-Plus-Storage

Grid Position: Behind distribution meter at utility substations

Host: Utility

Utility Type: Cooperative and Municipal Utilities

Capacity: 20 total MW_{AC} solar PV, 6-9 total MW_{AC} MW storage (split among three projects)

Consultant: GDS Associates - <https://www.gdsassociates.com/>

Contract Type: PPA/SSA

Use Case(s)/Value Stream(s): Reduction of transmission and capacity demand, environmental attributes (specifically excludes participation in PJM ancillary services markets)

Current Status: COD scheduled for January 2021. As of spring 2021, Central Virginia Electric Cooperative has entered into a PPA for the output of an 8 MW solar and 4 MW battery storage facility being developed by Midway Solar, LLC in Albemarle County, Virginia.

Description: GDS Associates issued this RFP on behalf of three Virginia utilities (two municipal and one cooperative in May 2019, with responses due by July 1, 2019. As with the other GDS-managed RFPs, this RFP gives respondents substantial flexibility as to the specifics of the systems being proposed, although the system size ranges are more narrowly prescribed here than in the VMEA RFP. All of the involved utilities are located in the PJM market territory and intend to use their storage systems for demand peak management based on transmission provider and PJM market demand peaks.

Bluebonnet Electric Cooperative, CoServ Electric, and University of North Texas - RFP on file, see [Solar-Plus/Procurement](#)

Issue Date: 1/5/2018

Technology: Solar-Plus-Storage

Grid Position: Front-of-the-Meter or Behind-the-Meter

Host: Customer or Utility

Utility Type: Cooperatives and University

Capacity: 9-13.5 MW solar PV, storage capacity not specified (only CoServ requested storage bids, to accompany 2-4.5 MW of solar PV)

Consultant: RMI and Texas Energy Aggregation

Contract Type: PPA/SSA preferred

Use Case(s)/Value Stream(s): Energy Arbitrage, Transmission Demand Charge Reduction, Generation Demand Charge Reduction, ERCOT Emergency Response Services

Current Status: Not specified.

Description: RMI and Texas Energy Aggregation released this RFP in January 2018, with responses due by February 9, 2018. This RFP documents a relatively early approach to crafting a solar-plus-storage RFP. Some parts of the RFP provided an innovative degree of clarity, e.g., requesting projections of the economic value of solar-plus-storage to the involved utilities. However, the required use of a specific financial model was viewed as unworkable by some bidders. The lesson learned was to allow bidders to use their own proprietary models, but to subsequently compare approaches and results in the latter stages of the procurement. In addition, the RFP predated a Texas law enacted in 2019, which confirmed that electric co-ops in Texas can install, own, and operate battery energy storage systems.

Asset Purchase and Engineering, Procurement, and Construction (EPC) Agreements

City of Wilson (North Carolina)

<https://vrapp.vendorregistry.com/Bids/View/Bid/2dcf5516-2d3b-44f2-8a3e-5b8b6b013530>

Issue Date: 3/12/2021

Technology: Standalone Storage

Grid Position: Distribution system

Host: Utility

Utility Type: Municipal

Capacity: up to 100 MW (split up into 14 separate systems with capacity ranging from 1-16 MW)

Consultant: Booth & Associates

Contract Type: EPC

Use Case(s)/Value Stream(s): Not discussed

Current Status: Unknown

Description: The City of Wilson issued this RFP in March 2021, with responses due by April 29, 2021. The RFP contains 14 separate bid schedules for different battery storage systems with individual capacities ranging from 1-16 MW and 3-48 MWh. The technical specifications provided are quite specific, but use cases are not outlined, presumably because the utility intends to operate the storage systems directly. Based on project context, demand charge reduction is likely the primary use case for these systems.

North Carolina Eastern Municipal Power Agency RFP on file see [Solar-Plus/Procurement](#)

Issue Date: 1/14/2021

Technology: Broad options

Grid Position: Behind the meter at a member (distribution) utility substation

Host: Distribution utility

Utility Type: Municipal (wholesale supplier)

Capacity: 5-10 MW, 10-40 MWh

Consultant: GDS Associates

Contract Type: EPC with long-term service agreement

Use Case(s)/Value Stream(s): Coincident Peak Demand Reduction (12 monthly peaks)

Current Status: Unknown

Description: The North Carolina Eastern Municipal Power Agency issued this RFP in January 2021, with responses due by March 11, 2021. The RFP includes a range of possible proposed project sizes. In contrast with the City of Wilson RFP, this RFP is not detailed regarding the required technical specifications. The RFP instructs bidders to provide proposed terms for a 15-year service agreement for maintenance of the system.

Virginia Municipal Electric Association https://www.gdsassociates.com/wp-content/uploads/2018/12/FINAL-VMEA-Energy-Storage-RFP-2018.Dec_05-1.pdf

Issue Date: 12/5/2018

Technology: Standalone Storage

Grid Position: To be interconnected behind the meter at a substation on the distribution system of a distribution-level cooperative.

Host: Utility

Utility Type: Municipal G&T

Capacity: 2-12 MW, 1-2 hour duration

Consultant: GDS Associates - <https://www.gdsassociates.com/>

Contract Type: Engineering, Procurement, and Construction (EPC)

Use Case(s)/Value Stream(s): Coincident peak demand reduction

Current Status: Unknown status (RFP schedule called for COD in January 2020)

Description: GDS Associates issued this RFP on behalf of the Virginia Municipal Electric Association (VMEA) in December 2018, with responses due by February 1, 2019. The battery system would be sited at a substation owned and operated by Harrisonburg Electric Commission (HEC), a VMEA member, and the battery would be controlled by HEC on behalf of all VMEA members. The RFP gave responders a wide degree of flexibility in proposal size, accepting proposals for systems with capacity between 2 and 12 MW, and did not specify many technical requirements, instead instructing respondents to provide much of this information as part of their proposals.

Cobb EMC (Georgia) RFP on file. See [Solar-Plus/Procurement](#)

Issue Date: 11/26/2018

Technology: Solar-Plus-Storage (option is given for proposals to only address one portion of system)

Grid Position: Behind-the-Meter (located at utility campus)

Host: Utility

Utility Type: Cooperative

Capacity: 1.5 MW_{AC} Solar PV, 1 MW_{AC}/4MWh battery storage

Consultant: No consultant (NC Clean Energy Technology Center assisted)

Contract Type: EPC

Use Case(s)/Value Stream(s): Peak Shaving, Resilience (emergency building power supply)

Current Status: Desired completion by end of 2019 (actual completion in October 2020; additional microgrid portion of the project is under development as of mid-2021)

Description: Cobb EMC issued this RFP in November 2018, with responses due by January 14, 2019. This RFP is considerably more detailed and provides more technical specifications than many of the RFPs prepared by private consultants, perhaps because the utility had a more specific envisioned project here.

Contract Type Not Specified

Southern California Public Power Authority

<http://scppa.org/file.axd?file=/2020/02/2020%20SCPPA%20Renewable%20Energy%20Resources%20and%20Energy%20Storage%20Solutions%20RFP.pdf> and

<http://www.scppa.org/file.axd?file=%2f2020%2fo8%2fSCPPA+RFP+for+Stand-Alone+ESS+revised.pdf>

Issue Date: 2/21/2020

Technology: Standalone Storage

Grid Position: Front-of-the-Meter

Host: Utility

Utility Type: Municipal G&T

Capacity: Capacity not specified (members have a total target of 147 MW of storage capacity by 2021)

Consultant: No consultant

Contract Type: Option given to respondents on whether to propose EPC or SSA arrangement

Use Case(s)/Value Stream(s): Renewable integration, legislative target compliance

Current Status: Desired completion in late 2020

Description: The Southern California Public Power Authority (SCPPA) issued this RFP in February 2020, with responses due on December 31, 2020. SCPPA is a public agency that conducts the business of an electric G&T utility for its member organizations, which include 11 municipalities and one irrigation district. Unlike many of the other RFPs discussed here, this RFP is open-ended as to the amount of battery storage capacity to be supplied; it mentions that the member agencies of SCPPA have a target of 147 MW of storage capacity, but also mentions that members may be interested in exceeding that target (147 MW is the target established under California A.B. 2514 of 2010).

Burlington Electric Department (Vermont) RFP on file

Issue Date: 5/9/2017

Technology: Storage + microgrid (tied to pre-existing solar installation)

Grid Position: Distribution grid

Host: Customer (airport)

Utility Type: Municipal

Capacity: At least 1 MW/4 MWh

Consultants: Sandia National Labs, U.S. Department of Energy

Contract Type: EPC expected, but allowed option to propose ESS contract

Use Case(s)/Value Stream(s): Resilience (backup power), peak shaving, energy arbitrage, frequency regulation, other wholesale market actions

Current Status: Moved forward

Description: Burlington Electric Department issued this RFP in May 2017, with responses due by July 11, 2017. This RFP is an early example for a local project, which would be sited on the customer side of the meter, in partnership with the local utility. The proposed site at the airport

presented challenges, which delayed development of the project. The RFP development process helped to inform Sandia National Labs' development of guidance on storage RFP design.

Utility-Issued Request for Information (RFI)

Brazos Electric Cooperative (Texas) - <https://aces-wpengine.netdna-ssl.com/wp-content/uploads/2020/09/Brazos-Electric-Cooperative-2020-RFI-for-ERCOT-Energy-Resources-.pdf>

Issue Date: 9/3/2020

Technology: Solar-Plus-Storage (one option for responses; others include thermal generation and coastal wind generation)

Grid Position: Front-of-the-Meter (intended for bid into ERCOT market)

Host: Utility

Utility Type: Cooperative

Capacity: Not Specified

Consultant: Alliance for Cooperative Energy Services Power Marketing (ACES) - <https://www.acespower.com/>

Contract Type: PPA/SSA

Use Case(s)/Value Stream(s): Energy supply for ERCOT market

Current Status: Contract Start Date by January 2023; Brazos Electric Cooperative filed for bankruptcy in March 2021 due to impacts of the February 2021 winter storm event.

Description: Brazos Electric Cooperative issued this RFP in September 2020, with responses due by October 9, 2020. Solar-plus-storage is only one possible technology option sought through the RFI; thermal generation and coastal wind are also options. Brazos has intended to use the results of the RFI to inform a future formal solicitation.