SPECs aims to increase the size and impact of battery energy storage in the local electric co-op market.

Federal and state policies, as well as regional market rules and relationships between co-ops and their G&T suppliers set the context for co-op storage development and procurement.
The Electric Co-op Sector

- 800+ Distribution Co-ops
- 60+ G&Ts
- 12% of US Retail Electricity

Source: NRECA
Co-op Sector Energy Transition

- From 2010 to 2020, co-ops nearly tripled their renewable capacity, to more than 11.4 GW.
- In 2020, co-ops added more than 1.6 GW—a record year, with more than 6.4 GW more expected by 2024.
- Yet co-ops are largely fueled by fossil energy resources.
- Energy storage will play a big role in a successful renewable-energy transition.

![Graph showing energy sources comparison between 2018 and 2019.](source: NRECA research)
Understanding storage project flexibility can help co-ops to shape better relationships and adapt to change

SPECs created an Early-Stage Decision Model to help co-ops:

• Explore value streams for a potential project
• Educate co-op decision-makers about storage operations and project benefits/costs
• Provide output regarding data, assumptions and use-case descriptions that should be included in a storage RFP
• Support for discussions with procurement partners.
Agenda

- Wholesale Power Contracts
- Business Models
- State Policies
- Federal Policies
- ISO/RTO Rules
G&T Utilities and Wholesale Power Contracts

https://weown.it/resource-gnt-all-requirements-overview
All-Requirements Provisions

- Electric cooperatives typically purchase electricity from generation and transmission (G&T) utilities, which can be investor-owned utilities or cooperative agencies.
- Some contracts are “fixed”; in these, the distribution cooperative purchases a defined amount of electricity from the G&T utility.
- Many contracts are “all-requirements”; in these, the G&T utility is obligated to supply all of the electricity needs of the distribution utility, and the distribution utility is obligated to purchase electricity to meet its entire load from the G&T.
Exceptions to All-Requirements Provisions

- All-requirements provisions are usually not absolute; they typically have some exceptions allowing for self-supply by distribution utilities and/or their customers.

- Some exceptions are general; they allow the distribution utility to self-supply some set amount of capacity or percentage of its load.

- Other exceptions serve specific purposes, like economic development, PURPA obligations, or state policy requirements.
Wholesale Contract Rate Design

- Even when self-supply is allowed under a wholesale power contract, the usefulness of the self-owned capacity can be limited due to rate design provisions.

- Contract provisions may prevent self-generation from being used to reduce local demand, instead crediting it based on G&T avoided cost or wholesale market prices.

- Alternatively, self-generation may incur charges from the G&T for backup, transmission, and other ancillary services.

Does Storage Count as Generation?

- Technically, energy storage is not energy generation, but how is storage capacity treated for wholesale contract purposes?
- Some all-requirements contracts do not prevent distribution utilities from using it to reduce demand.
- With stand-alone storage, the same amount of electricity is purchased from the G&T, but, due to demand charges and time-of-use rates, the amount of money paid to the G&T can decline.
- The status of storage under wholesale contracts may be different if paired with generation.
Contract Renegotiations

- Wholesale power contracts are often renegotiated and updated
- This presents risks for distribution utilities who pursue projects that rely on certain contract terms
- A project may appear economically beneficial using current contract rates and provisions, but changes in future contracts may reduce the benefits
- Renegotiations are a two (or more)-way street; they can also allow distribution utilities to make contracts more favorable for storage projects, particularly if multiple member utilities can benefit and the G&T is not harmed
- Issues like this make communication and cooperation between distribution and G&T utilities very important when considering energy storage projects
Business Models and Examples

- Independent for use on own system – Kit Carson Electric Cooperative, NM
- Own system w/G&T Support – Oglethorpe Power Corporation and Green Power EMC, GA
- G&T-owned – North Carolina Electric Membership Corporation, NC
- Wholesale Market participation – Old Dominion Electric Cooperative, VA
- Customer-sited – Dairyland Power Cooperative, WI
Government Policies

- One reason why local co-ops may choose to work with their G&Ts on solar-plus projects is that there are myriad state and federal policies that can impact solar-plus-storage value.
- Any co-op that is planning a project—and any developer that wants to work in co-op territory—should familiarize themselves with these policies and market rules.
State Policies

- Deployment Mandates
  - Renewable Portfolio Standards/Clean Energy Standards
  - Some states are adopting storage targets as well
  - Requirements for co-ops can be different than for investor-owned utilities
- Storage Compensation
  - Value Stack development in New York
- Clean Peak Policies
- Integrated Resource Planning
  - Several states have resource planning requirements for co-ops
  - Typically apply to G&Ts rather than distribution co-ops
- Distribution System Planning
Federal Policies

- Tax Credit
  - Solar Investment Tax Credit was extended by December 2020 legislation
  - Storage investment is eligible for tax credit if paired with solar generation

- FERC Policies
  - Order 841 - Storage Integration
  - Order 872 - PURPA Reform
  - Order 2222 - DER Aggregation in Wholesale Markets
  - Storage as Generation Capacity
## Policies, G&T Relationships and Regional Market Rules Affecting Local Co-op Solar-Plus Project Value Streams

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See resources available at:

- NCCETC website: [https://nccleantech.ncsu.edu/our-work/](https://nccleantech.ncsu.edu/our-work/)
- Community Solar Value Project: [https://www.communitysolarvalueproject.com/](https://www.communitysolarvalueproject.com/)

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