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CenterPoint Energy

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July 05, 2023

Filing Clerk
Public Utility Commission of Texas
1701 N. Congress Ave.
Austin, Texas 78711

RE: PUCT Project No. 53911, *Aggregate Distributed Energy Resource (ADER) ERCOT Pilot Project*

Enclosed for filing in the above-referenced project are notes of the ADER Task Force meeting that took place on June 28, 2023.

Regards,

Jason M. Ryan
Chair, ADER Task Force

Enclosure

CHAIR'S NOTES FROM THE
MEETING OF THE
AGGREGATED DISTRIBUTED ENERGY RESOURCE (ADER) TASK FORCE

WEDNESDAY, JUNE 28, 2023, 1:00 PM
COMMISSIONERS' HEARING ROOM
7TH FLOOR, WILLIAM B. TRAVIS BUILDING

1. Welcome, Antitrust Compliance Reminder and Logistics

The meeting was called to order by the Chair at approximately 1 p.m. and participants were reminded of the following antitrust admonition:

Section 4 of the Charter provides:

"The Commission strictly prohibits members of the Task Force and their employees and other entities or persons that may participate in Task Force activities from using their participation in Task Force activities as a forum for engaging in practices or communications that violate applicable antitrust laws."

The Task Force representatives and their member organizations are committed to full compliance with federal and state antitrust laws and to maintaining the highest ethical standards in the way we conduct our activities.

2. Introductions and Roll Call

Attendance of the Task Force members is reflected in the chart below:

Member	Company	Proxy	Present / Absent
Jason Ryan	CenterPoint Energy		P
Alejandro Ramirez	AEP		P
Andrew Higgins	CPS Energy		P
John Padalino	Bandera Electric Co-op		A
Martha Henson	Oncor		P
Arushi Sharma Frank	Tesla	Greg Thurnher	P
James McGinnis	David Energy	Jaden Crawford	P
Michael Lee	Octopus Energy	Rajiv Shah	P
Ned Bonskowski	Vistra		P
Resmi Surendran	Shell		A
Amy Heart	SunRun		P
J.T. Thompson	Generac		P

Member	Company	Proxy	Present / Absent
Joel Yu	Enchanted Rock	Monica Batra-Shrader	P
John Bonnin	AutoGrid		P
Suzanne Bertin	Texas Advanced Energy Business Alliance (TAEBA)		A
Carmen Best	Recurve		P
Erik Ela	Electric Power Research Institute (EPRI)		P
Margo Weisz	Texas Energy Poverty Research Institute (TEPRI)		A
Miroslav Begovic	Texas A&M University		A
Scott Hinson	Pecan Street		P

3. Update from ERCOT on Status of Phase 1 of Pilot Program

ERCOT provided an update on the status of the Phase 1 pilot program, and presented the attached report. As reflected in that report, 7 ADERs have been submitted to ERCOT, reflecting 10.1MW of energy and 3.3MW of non-spin ancillary services. The first 6 ADERs are now in the ERCOT network model, and the focus of those ADERs is setting up real-time telemetry. Two ADERs recently completed activating their telemetry and have started the validation process.

Of the 80MW of energy available in Phase 1, the 10.1MW submitted so far represents just 13% of the limit. Of the 40MW of available non-spin available in Phase 1, the 3.3MW submitted represents just 8% of the limit. Of the 3 load zones with ADERs submitted, the Houston zone is the highest subscribed zone, being 26% full on energy and 18% full on non-spin.

4. Identification of Next Steps for a Successful Phase 1

The Task Force discussed the status of Phase 1, as presented by ERCOT, and whether the market is on track for a successful Phase 1 or whether any changes to the pilot program needed to be considered now to ensure a successful Phase 1. Tesla's attached presentation was discussed. In relation to that presentation, the Task Force discussed the challenging economics of ADERs with the current 20% cap per QSE (which caps each QSE at 16MW of energy, out of the available 80MW), including data showing that ADERs need to be in the 15-20MW range to be economically feasible. Options for further

consideration included raising the 20% cap, or raising the 80MW cap so that a 20% per QSE cap was closer to 20MW, and consideration of whether certainty is needed around what Phase 2 would look like and the timing of Phase 2, to ensure a successful Phase 1. The Chair proposed that a workshop be convened in July for Task Force members to achieve consensus on those issues.

5. Initial Discussion of Phase 2 Pilot Program

   The Task Force had a high-level discussion of requirements for a successful Phase 2 of the pilot program, including the opportunity to gather operational data from multiple ancillary services. Tesla's attached presentation was discussed. And ERCOT advised that the Governing Document addresses the path toward Phase 2 once there are at least 3 months of successful demonstration of the dispatch of energy and non-spin by ADERs in Phase 1.

6. Discussion of Q2 2023 Report

   The Chair advised that the draft report would be circulated in the coming days and requested Task Force member feedback by the end of the first full week of July to enable a mid-July filing.

7. Discussion of Relevant Texas Legislation

   The Chair advised of the passage of SB 1699, which reflected the Task Force legislative recommendations from the December 2022 quarterly report.

8. Task Force Member Announcements

   Among the member announcements was the likelihood that ADERs would be the subject of discussion at the upcoming Gulf Coast Power Association and NARUC conferences in Austin.

9. Public Comment

   There were no formal public comments.

10. Date and Topics for Next Meeting

    The Chair noted that the next official Task Force meeting date is to be determined, but will likely be in late September 2023 to allow for data from the pilot project to be available in advance of that meeting.

The Chair reported that the Task Force would continue to meet over the next quarter as needed, with a specific intent to meet in July regarding the matters discussed in item 4 of the agenda.

All workshop and official meeting dates and times will be posted in this project.

11. Adjourn

The meeting adjourned at approximately 2:45 p.m. A recording of the meeting can be viewed from the "Broadcasts" section of the PUC's website.

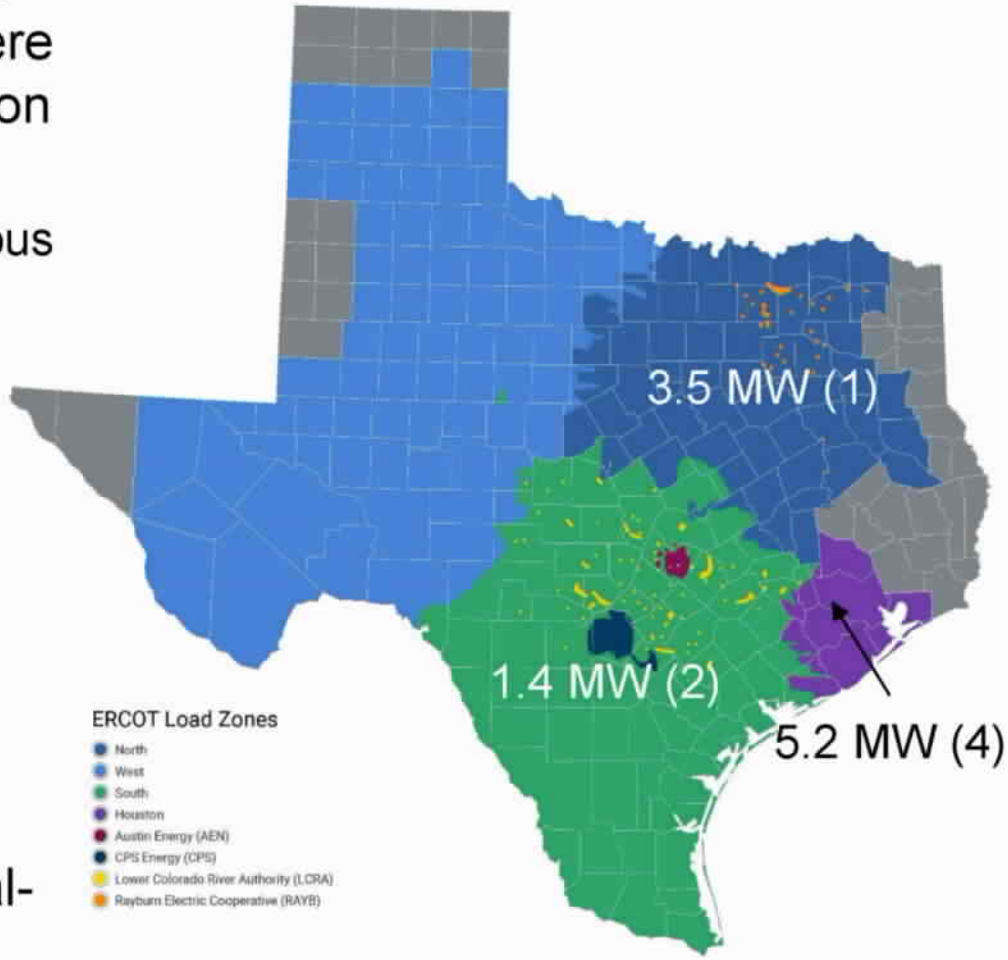
Update from ERCOT on Status of Phase 1 of Pilot Program

ERCOT Staff

ADER Task Force Meeting
June 28, 2023

Aggregate Distribution Energy Resource (ADER) pilot participation as of June 27, 2023

- Prospective participants continue to engage with end-use customers, Distribution Service Providers (DSPs), and ERCOT staff to set up ADERs.
- ERCOT has accepted seven Details of the Aggregation (DOTA) forms and there have been some updates to aggregation populations:
  - Aggregated devices include synchronous generators, stationary batteries, and HVAC systems.
  - All ADERs intend to provide some amount of Non-Spin, based on DOTA submissions.
  - ERCOT-Wide Energy: 10.1 MW
  - ERCOT-Wide Non-Spin: 3.3 MW
- The first 6 ADERs are now in the ERCOT Network Model, with participants focused on setting up Real-Time telemetry.



Participation limits tracking as of June 27, 2023

		LZ_AEN	LZ_CPS	LZ_HOUSTON	LZ_LCRA	LZ_NORTH	LZ_RAYBN	LZ_SOUTH	LZ_WEST	ERCOT-WIDE
Energy	Limit (MW)	2.8	5.3	20.3	3.1	28.7	1.2	10.3	8.2	80.0
	Approved (MW)	0	0	5.2	0	3.5	0	1.4	0	10.1
	Unused (MW)	2.8	5.3	15.1	3.1	25.2	1.2	8.9	8.2	69.9
	% Full	0%	0%	26%	0%	12%	0%	14%	0%	13%
Non-Spin	Limit (MW)	1.4	2.7	10.1	1.6	14.3	0.6	5.2	4.1	40.0
	Approved (MW)	0	0	1.8	0	1	0	0.5	0	3.3
	Unused (MW)	1.4	2.7	8.3	1.6	13.3	0.6	4.7	4.1	36.7
	% Full	0%	0%	18%	0%	7%	0%	10%	0%	8%

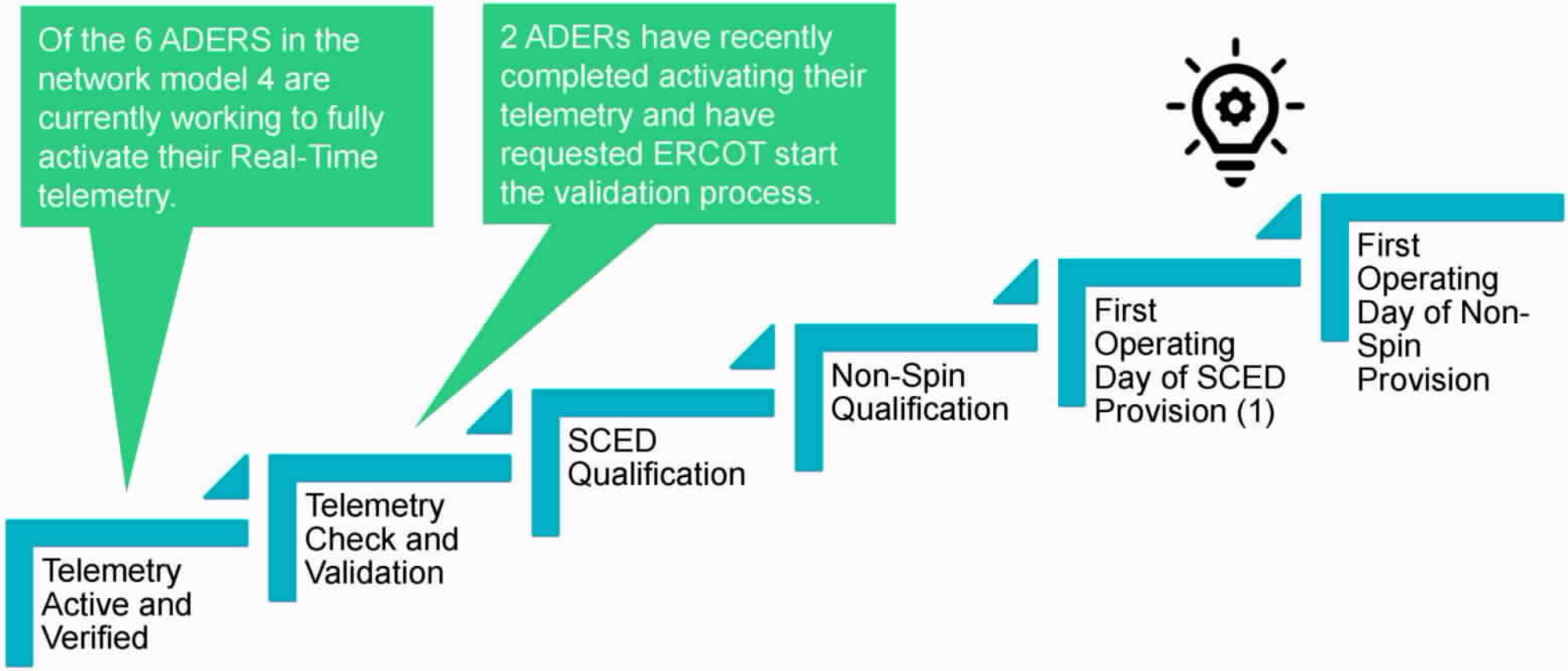
A single Qualified Scheduling Entity (QSE) is not allowed to register more than 20% of a system-wide limit.

8

Overview of recent discussions with interested parties

- ERCOT staff have had regular meetings with active participants to answer questions, clarify issues and help guide through processes (e.g., registration requirements, telemetry set-up).
- ERCOT has also had preliminary discussions with potential future participants around Ancillary Service requirements and participation in Security-Constrained Economic Dispatch (SCED).

Immediate next steps for ADER participation



Note (1): Participation in SCED is not dependent on Non-Spin qualification and this step may occur before Non-Spin qualification is complete

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ADER/VPP Next Steps

Requirements for a Successful Phase 1 and Phase 2 VPP Pilot in Texas

Filed in PUCT Control No. 53911

Aggregated Distributed Energy Resource Task Force Quarterly Meeting Update
Greg Thurnher, Tesla, Inc.

Filing Contact Information: Arushi Sharma Frank, Texas Public Utility Commission ADER Task Force Vice Chair, asharmafrank@tesla.com

Phase 1 Update

1. Review of progress thus far
   - Operational experience
   - Customer experience
   - Economies of scale
   - Enabling 3rd party participation

2. Next Steps for a successful Phase 1
   - MW limits should be appropriate for reliability risk and ADER provider economies of scale
   - Continued ERCOT support to expand into other ancillary services

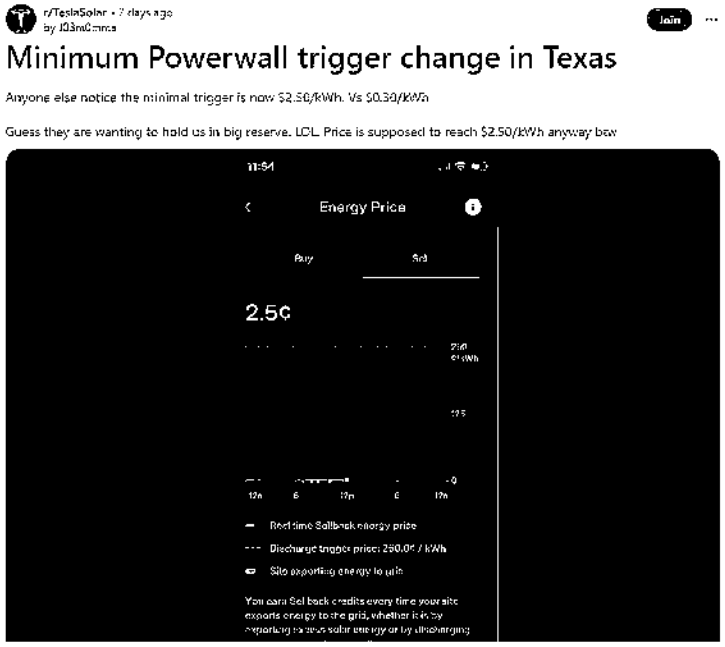
Progress thus far

Multiple ADERs commissioned (internally), scheduling ERCOT qualification tests

- Preserving the customer experience while performing like a power plant increased customer engagement with transparency
- Customers may adjust their participation, Tesla control systems reflect their preference in our availability in real-time, and reported to ERCOT without delay
- Some customers expressed desire for more active participation (self-updates of bid-to-buy / offer to sell)
- Program management costs are challenged at small scale; provider break-even point is between 15-20 MW
- Enabling 3rd parties to participate is a priority, second only to resource constraints and customer experience and precise performance.

Progress thus far

Tesla Electric Customer Experience



- “Make the discharge price adjustable”
- “We should have the option to set the sell bar so we could maximize credits”
- “Make the cap price adjustable by the user so we can maximize our profit (I would set my cap to 5 cents per kWh).”
- “It would also be great to be able to manually set the trigger rate to sell back from my battery.”
- “Please give us the ability to adjust the trigger price for selling energy back to the grid. I would like to use a lower trigger price.”
- “Let us set different export triggers”

Next steps for a successful Phase 1

1. Expand scale

Sustainable participation requires meaningful scale. Managing a demand response resource like an ADER is no different than managing a traditional resource, and the cost structure associated with managing a traditional resource is comparable for ADERs. Provider break-even point, while providing a meaningful incentive to each ADER customer, is around 15-20MW.

2. Continued ERCOT support

ERCOT's support has been crucial and has created opportunities to test the capabilities of distributed resources to participate as an ADER.

Growth to a sustainable scale requires continued ERCOT support and rapid enablement of participation in multiple ancillary services.

Initial discussion of Phase 2

Requirements for a successful Phase 2

- Opportunity to gather operational data from multiple Ancillary Services to inform an independent, unbiased evaluation identifying the risks of providing ancillary services from the distribution system, by type of ancillary service
- Allowance for ADERs to provide any ancillary service where performance meets or exceeds that of a traditional provider of ancillary services
- Immediate allowance to provide RRS and ECRS to gather performance, inform ERCOT, build confidence in device types
- Engineering certification of device types, comparable to that of Non-controllable Load Resources (eliminate the need for costly, redundant metering)

Sustainable growth is impossible without dependable market opportunities

*The ADER Pilot **must have** consistent revenue streams and opportunities to succeed*

Control Continuum

Figure 1.7 demonstrates that Balancing and frequency control occur over a continuum of time using different resources that have some overlap in timeframes of occurrence.

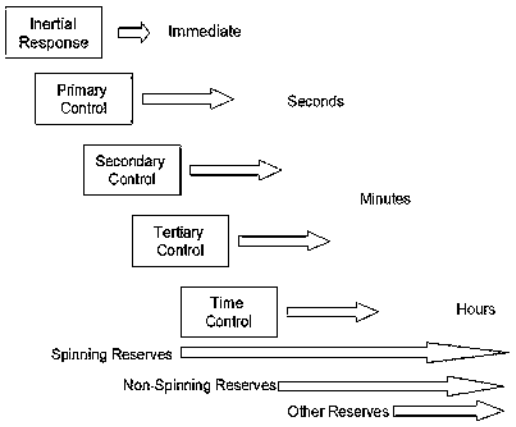


Figure 1.7: Control Continuum

Source:
https://www.nerc.com/comm/OC/ReferenceDocumentsDL/Reference_Document_NERC_Balancing_and_Frequency_Control.pdf (last accessed 6/27/2023)

- Establishing DRRS as the 'new non-spin' will be an inferior product relative to ADER capabilities, and risks stifling new entry into the ADER pilot. **
- The ERCOT marketplace has delivered capacity to meet the balancing needs and product definitions for decades
- While Ancillary Services may have regional definitions and (re)designs, their successful, efficient procurement is dependent upon market design that matches up product requirements with resource capabilities
- Success in the next decade is predicated on a market design which allows capable resources to compete on their merits to provide critical balancing services

** Note: new entrants also need a stable market value proposition to create successful commercial partnerships with DER developers, installers, OEMs etc. and enhance customer choice.