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MEMORANDUM

FROM: Jason M. Ryan, ADER Task Force Chair
Joel Yu, ADER Task Force Vice-Chair

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

DATE: November 20, 2024

Materials presented at the November 18, 2024 workshop of the ADER Task Force are attached, and a video replay from the November 18, 2024 workshop of the ADER Task Force is available at the following link: <https://youtu.be/RhGYtpFLEOE>

ADER Task Force Workshop

November 18, 2024

Agenda

- Opening Remarks (Chair)
- Update on MW Potential Mapping (Carmen Best)
- ERCOT Update (Ryan King)
- Cmsr Glotfelty Memo Item #2 Discussion (Monica Batra-Shrader)
- Cmsr Glotfelty Memo Item #4 Discussion (Manny Uy)
- Review issues inventory & begin discussing recommendations
- Scheduling for December meetings to finalize recommendations for EOY filing by TF



Aggregated Distributed Energy Resource (ADER) Task Force – ERCOT Update

Ryan King
Manager, Market Design

Mark Patterson
Manager, Demand Integration

ADER Task Force Meeting
November 18, 2024

Purpose

- Pilot Program Status Update
- Proposed changes for Phase 3 for discussion and feedback
 - Inclusion of ADER Aggregated NCLR (A-NCLR) participation framework to accommodate 'Blocky' Resources
 - Updates to participation limits
 - DOTA form process clarifications and updates
 - Telemetry validation clarifications and updates
- Next Steps

Pilot Participation as of November '24

- 2 ADERs fully participating in the wholesale electric market:

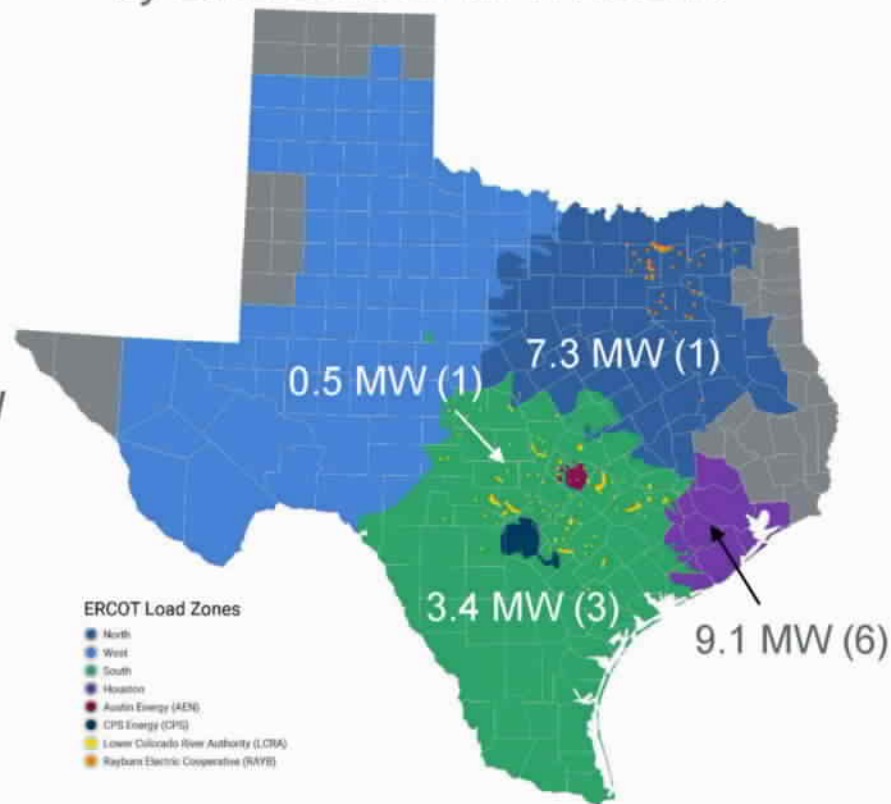
- 14.5 MW for energy
- 8.6 MW for Non-Spin
- 8.6 MW for ECRS

- 9 additional ADERs have ERCOT-accepted Details of the Aggregation (DOTA) forms in place:

- ERCOT-wide energy: 5.8 MW
- ERCOT-wide Non-Spin: 1.1 MW
- ERCOT-wide ECRS: 0.1 MW

- A few ADERs are in various stages of qualification, telemetry validation and cannot fully participate at this time.

*MW for energy and count of ADERs
by Load Zone for all 11 ADERs*



Pilot Participation as of November '24

		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	0.0	9.1	0.5	7.3	0.0	3.4	0.0	20.3
	Unused (MW)	2.8	5.3	11.2	2.6	21.4	1.2	6.9	8.2	59.7
	% Full	0%	0%	45%	16%	25%	0%	33%	0%	25%
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	0.0	4.7	0.0	4.6	0.0	0.4	0.0	9.7
	Unused (MW)	1.4	2.7	5.4	1.6	9.7	0.6	4.8	4.1	30.3
	% Full	0%	0%	46%	0%	32%	0%	8%	0%	24%
ECRS	Limit (MW)	1.4	2.7	10.1	1.6	14.3	0.6	5.2	4.1	40.0
	Approved (MW)	0.0	0.0	4.0	0.1	4.6	0.0	0.0	0.0	8.7
	Unused (MW)	1.4	2.7	6.1	1.4	9.7	0.6	5.2	4.1	31.3
	% Full	0%	0%	39%	8%	32%	0%	0%	0%	22%

A-NCLR Model

- Aggregations of devices/premises will be allowed to participate as Aggregated Non-Controllable Load Resources (A-NCLRs).
- Aggregations will be registered and modeled like other ADERs but using NCLR categories for Resource parameters in ERCOT's Resource Integration an Ongoing Operations (RIOO) system.
- Real-time 2-second telemetry will ~~would still~~ be required from the QSE to ERCOT using all NCLR attributes.
- These ADERs will be dispatched by the Ancillary Service Deployment Manager like other NCLRs. No Energy Bids or dispatch through Security-Constrained Economic Dispatch (SCED) in Real-Time.
- **Discussion item**
 - Since section 3.6.1.(4) applies only to a Load Resource participating in SCED it would not apply to Load Resources participating under the A-NCLRs participation model therefore the Qualified Scheduling Entity (QSE) representing the Resource **does not** have to be the QSE representing the premise/electric provider as the Load Serving Entity (LSE).
 - ERCOT is **requesting feedback** from the Task Force on whether to retain or modify this requirement in the Phase 3 Governing Document.

Participation Limits

- Phase 1 and 2 of the pilot limited the total registered MW capacity of all ADERs to 80 MWs and 40 MWs for each of Non-Spin and ECRS
- Under Phase 3 ERCOT is proposing to **increase** these limits to **160 MWs and 80 MWs** respectively to allow the pilot to continue to grow and evolve in Phase 3
- As we are now more than 2 years into the pilot, also proposing to eliminate the Load Zone-based limits

DOTA Form

Proposed Updates

- Once a DOTA has been approved by ERCOT, any conflicts with premises participating in *subsequent* Emergency Response Service (ERS) Standard Contract Terms will be resolved through the ERS procurement processes and will not require the DOTA to be edited for those conflicts.
 - i.e., the premise would not be allowed to participate in ERS for subsequent terms
- Transmission and Distribution Service Providers (TDSP) will continue to be required to review DOTA for any participation conflicts with TDSP Load Management Programs.

A-NCLR Telemetry Validation

- For A-NCLR ADERs:
 - For device-level telemetry validation, ERCOT will require 5-minute interval data from each device (1-minute data will still be required for SCED dispatchable ALR-ADERs)
 - Validation Metric change: Of these intervals being evaluated, the telemetered value must be within 50% of the aggregate premise-level data averaged over each 15-minute Settlement interval when the Total Expected Registered Capacity is less or equal to 1 MW, or within 10% of the aggregate device-level data averaged over each 15-minute Settlement interval when the Total Expected Registered Capacity is greater than 1 MW.
- Deployment performance will use the meter-before/meter-after baseline methodology, like other NCLRs
 - “Baseline” capacity calculated by measuring the average of the real power consumption for five minutes before the Dispatch Instruction if the Load level of a Load Resource had not been affected by a Dispatch Instruction from ERCOT

Premise-Level Telemetry Validation

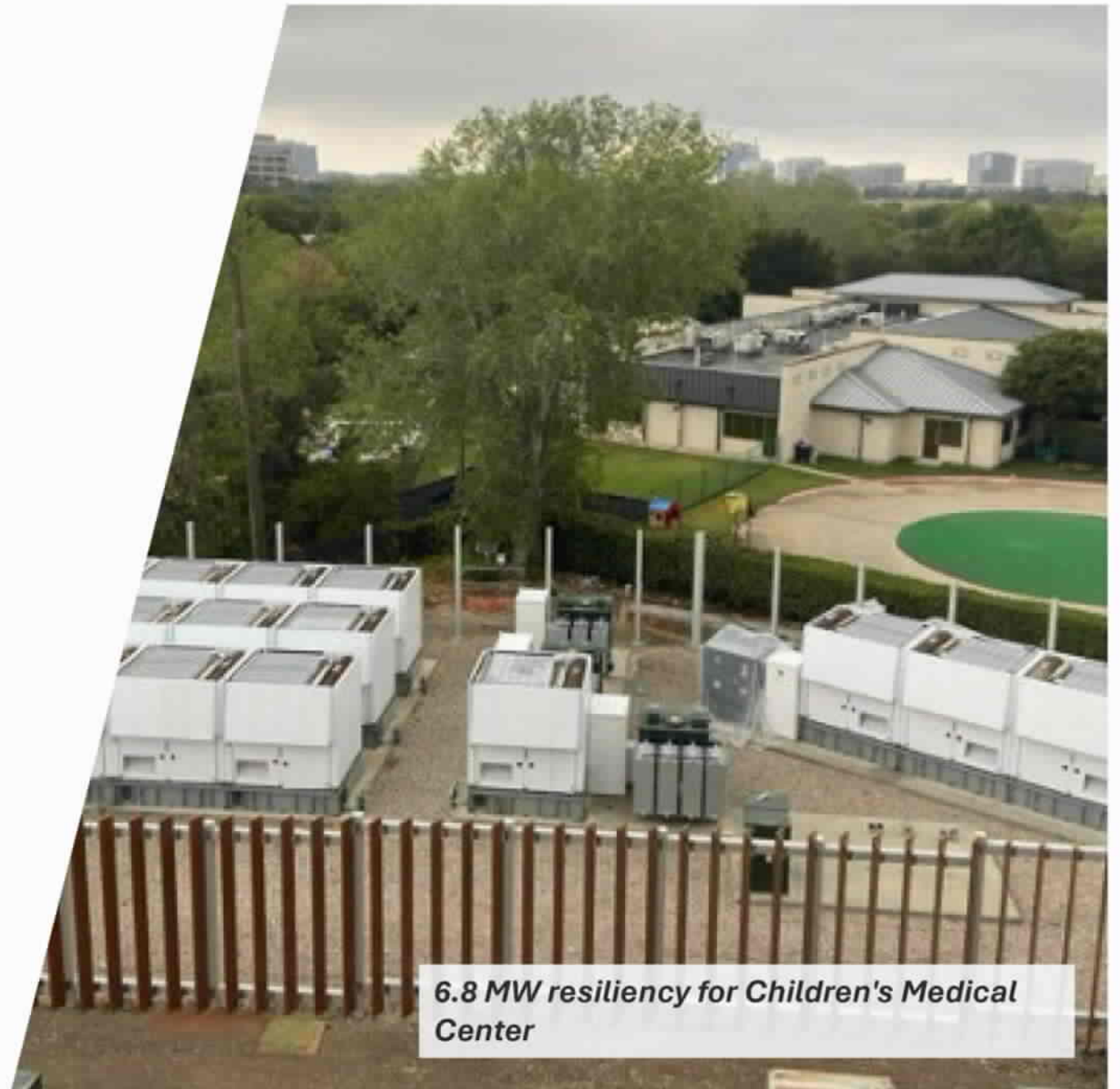
- Clarifications to Premise-Level Validation: revised to reflect that premise-level telemetry includes the requested capability of the Resource plus all consumption behind the premises.
 - Condition 1: Only intervals where the aggregate Premise-level 15-minute Settlement interval meter data meets one of the following will be evaluated:
 - When the aggregate Premise-level 15-minute interval Settlement meter data shows as net withdrawing, the Resource's metered withdrawals must equal or exceed 0.1 MW
 - When the aggregate Premise-level 15-minute interval Settlement meter data shows as net injecting (negative value in the meter data), the Resource's metered injections must equal or exceed -0.1 MW
 - Condition 2: Of these intervals being evaluated, the telemetered NPC value minus the Resource specific assigned offset must be within 10% of the aggregate Premise-level 15-minute interval Settlement meter data
 - Condition 3: During the 8-hour evaluation period, at least 50% of the intervals must meet condition 1 above.

Next Steps

- ERCOT is currently working on incorporating these proposals into a red-lined Phase 3 Governing Document and will plan to share with the Task Force in the coming weeks to provide comments
- Task Force members who wish to submit questions/feedback on the proposals –in particular input on participation requirements for A-NCLRs –can send via Pilotprojects@ercot.com



Enabling Non-REP Participation



6.8 MW resiliency for Children's Medical Center

Criticality of a Non-REP Participation Pathway

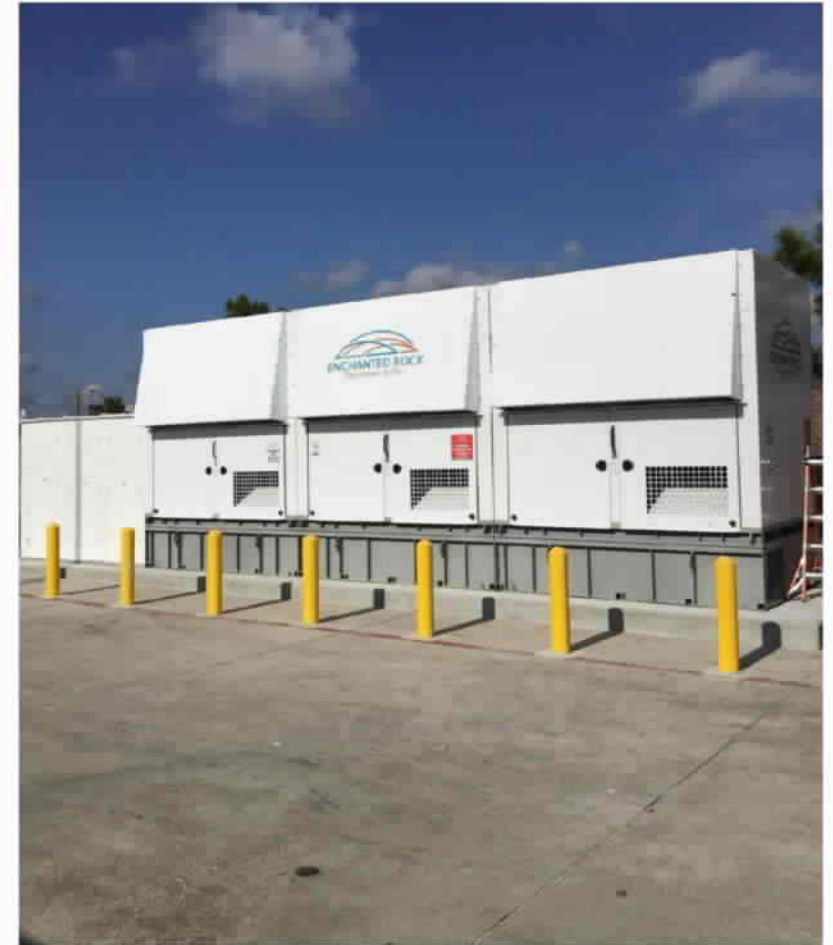


Enchanted Rock Model & ADER Opportunity

- Co-locate behind the customer load
- Provide backup power during grid outages
- Grid parallel operations to provide market services during peak or emergency conditions
- Erock as QSE for the asset, but not REP for the customer
- At least 34 MW of capacity that is ready to participate in ADER

ERCOT “Blocky Load” Model Will Support Scale (80MW and beyond)

- Erock supports ERCOT’s new model, as proposed, with the delinking of the QSE and LSE for participation of the ADER as an NCLR
- Interest from GRIT members and other DER/DR providers who only have QSE entities





Hunt Energy Network

HEN Distributed Energy Platform: Storage, Generation, and Load

Battery Energy Storage



- 32 - 9.9 MW sites distributed throughout ERCOT
- Online and operating daily in wholesale and AS markets
- Future distributed transmission interconnections

Network Optimization Center



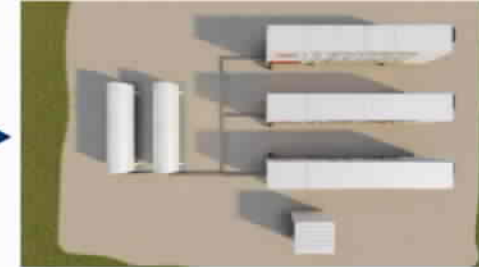
Remote 24/7 management of distributed resources

Energy-as-a-Service (EaaS)



- 7MW Load Resource connected at distribution voltage
- Optimizing commercially-owned back-up generation in commercial buildings and managing building energy management systems

Thermal Generation



- 3 - 9.9 MW peaker sites in construction and distributed throughout ERCOT
- HEN resource in TEF diligence phase
- Reserved when electric grid is stressed and PRC is tight

Benefits of Commercial Distributed Assets

- HEN has received significant interest from various commercial customers requesting resilient and reliable back-up generation and or management of energy and sustainability. Industries include
 - Warehousing
 - Real-Estate Development
 - Property Management Firm(s)
 - Health Care Facilities
 - Distributed Data Centers
 - Oil & Gas, Manufacturing
- Enabling commercial ADERs would provide
 - Quicker access to program scale
 - Greater visibility and more granularity of dispatchable loads for ERCOT
 - Access to a broader swath of resources for ERCOT
 - Access to a segment with greater access to capital to implement change more rapidly
- Ask: Capacity Allocation Allowing Commercial to Participate in the Pilot

Roadmap to 80 MWs and Beyond

- Issues Inventory

1. PFR/RRS enablement for ADERs, while relaxing SCED performance requirements – distributed batteries/smart thermostats ****pending ERCOT prioritization/scheduling – sub-pilot concept****
2. Program caps? Ability to accommodate larger <1MW sites without cannibalizing caps for resi sites ****Presented 11/18****
3. Smart thermostats – premise-level validation – Smart Meter Texas challenges (limit on meter reads – **Octopus Energy – early 2025**)
 1. Potential parallel effort in SB1699 implementation (was this a Q from staff? – **possibly NRG 2025, if not urgent from staff**)
4. Telemetry requirements can be a challenge ****Base Power/Leap early 2025****
5. EV opportunity – TBD - None operational in the program today ****To be presented for December ADER Mtg****
 1. Long duration response from EVs is challenging due to need to preserve charge
 2. EVs are generally larger assets and may drive us to the cap faster
6. Accuracy of response can be challenging – option to validate similar to ERS? Virtual telemetry of a modeled/forecasted response with runway for improvement over time
7. Removing requirement that ADERs bring injecting MWs for blocky load pathway? ****Clarification received****
 1. Support a broader set of technologies within heterogeneous ADERs
8. ECRS/NSR duration requirements
 1. ****AS Docket intending to address this post-RTC implementation****
9. Do we need some education/data on potential MWs available with the recommended changes/additional resources? ****In progress with the Technical Expertise/Academics segment****
 1. “How many resi systems are connected today?” as a data point to help judge program success and progress
 2. TDU reporting data and frequency (annual) – March 2024 PUCT Project No. 56002
10. Federal funding/incentive programs – survey of participants on participating/expected MWs and aligning technical requirements across ADER and RFPs
11. Multi-family properties – access to devices by 3rd parties and non-REP aggregations are an enabler
12. ****New Item 11/18 – save for 2025**** - Exploration of distribution level value for ADERs – Kevala CEO/team interest in presenting to the TF

Action Items and Next Steps

- Recap action items
- Jason/Joel – initial drafting on Cmsr. Glotfelty Items based on discussions to date
 - Consensus is the goal
- Scheduling for final TF meetings ahead of EOY filing deadline in response to Commissioner Glotfelty Memo
 - Via Doodle Poll
 - ERCOT Markup Review for Governing Document Phase 3