

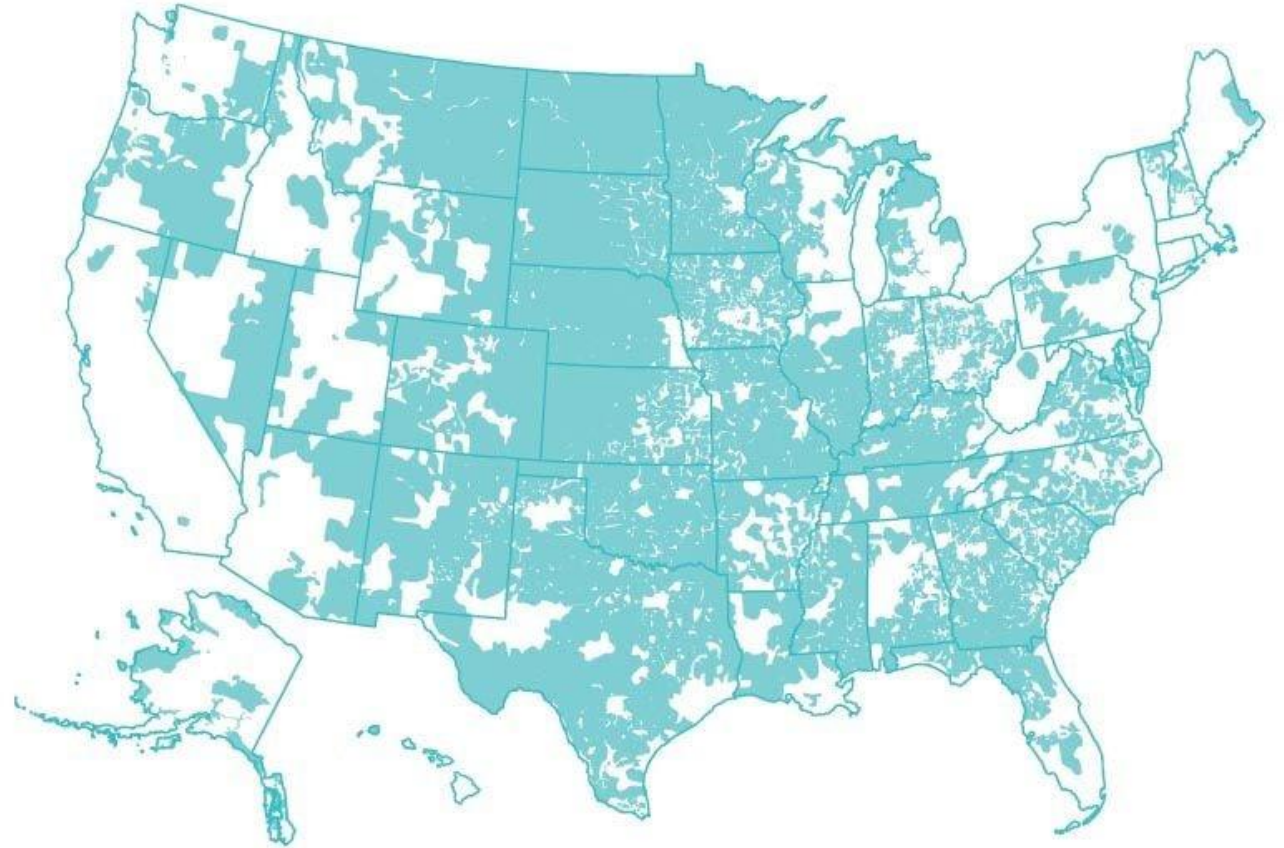
# UPIISC Workshop

Opportunities and Challenges in Sensor Communication and Data  
Collection

# NRECA Electric Cooperatives

## NRECA Represents

- 832 distribution cooperatives
- 63 generation & transmission cooperatives
- 21 million businesses, homes, schools, and farms in 48 states
- 92% of persistent poverty counties
- 56% of the US landmass



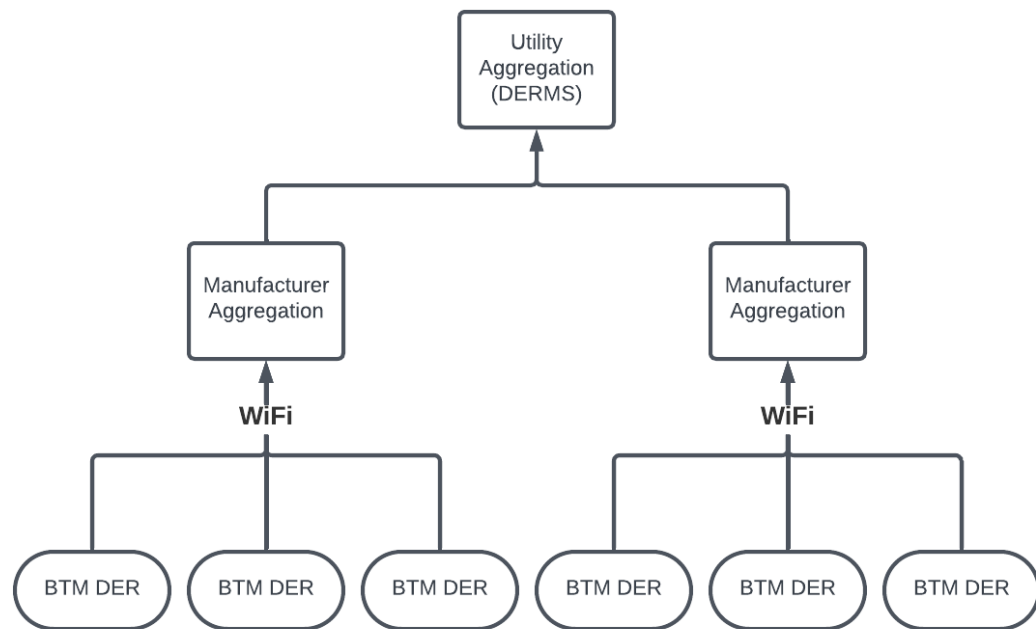
# DER deployment enablement

Sensor reporting required for basic curtailment all the way to Virtual Power Plant

DERMS & ADMS requires high-quality, multi-modal data:

- Standards must be mature and enforced (e.g. CA Rule 21)
- Vendor walled gardens / “ecosystems”
- Common issue: standard “dialects” or nuanced differences, e.g. power (W) measurements:
  - Dialect 1: Instantaneous power measurement
  - Dialect 2: Average energy over time horizon...5 minutes / 15 minutes / etc.
- Data quality: sensor self-reporting

# DSO-models & Cybersecurity Support



## JuiceBox Abruptly Shuts Down, Abandons EV Customers

A popular home charging hardware company pulls the plug on its US and Canadian businesses on Oct. 11 and puts its software up for auction.



By [Emily Dreibelbis Forlini](#) October 4, 2024



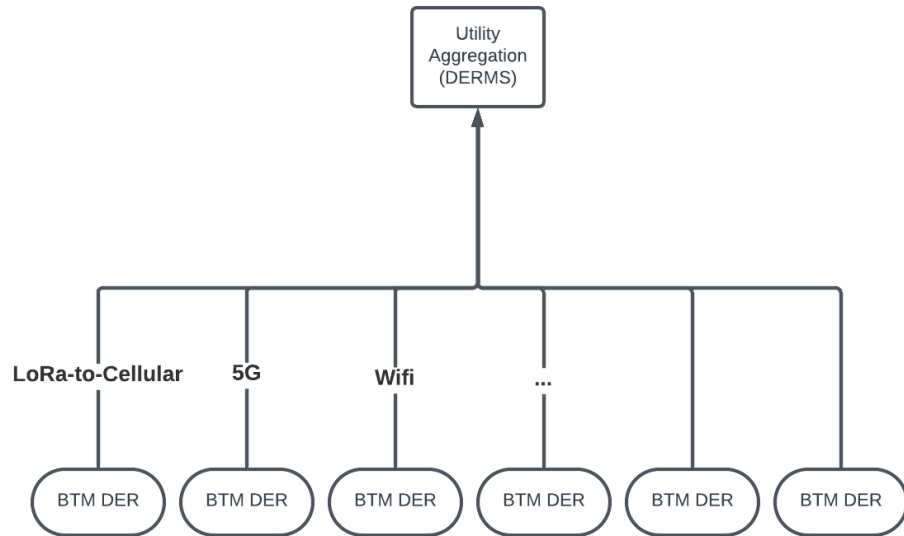
- Dependent on vendor for secure designs, patching, stability
- Dependent on customer / prosumer WiFi network and its security
- Fast / Reliable enough to support DSO?

## Dutch hackers report flaws in Enphase IQ Gateway devices

Two “ethical” hackers from the Dutch Institute of Vulnerability Disclosure (DIVD) have identified six vulnerabilities in Enphase IQ Gateway devices. The researchers are now working with the US inverter manufacturer to address the bugs in the next version of the product.

SEPTEMBER 5, 2024 **MARIE BEYER**

# DSO-models & Cybersecurity Support



- Built-in DER sensors report to redundant data destinations
- Utility sensors installed for monitoring, reporting, and possibly control

- Remove dependency on 3<sup>rd</sup> party aggregation
- Direct bidirectional communication & control (possibly even utility hardware ownership)
- Flexible communication protocol(s) based on utility territory

NEWS

Texas Co-op Makes History as Virtual Power Plant Enters Wholesale Power Market

Published  
October 8, 2024

Author  
Cathy Cash

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The system operates using a device-level meter and a hardware and software platform custom-built by BEC and dubbed Apolloware.

Last year, the co-op began exploring how this aggregated DER could respond in real-time with energy supplies. This summer, BEC

