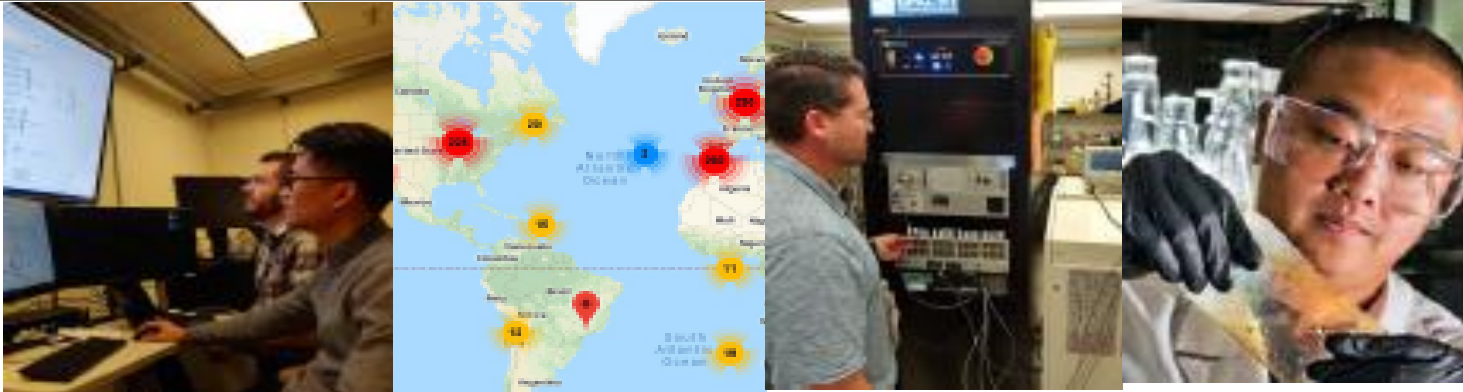




DOE ENERGY STORAGE PROGRAM DEMONSTRATION PROJECTS – UPDATES & INITIATIVES

10/26/21



PRESENTED BY

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SAND2021-12713 PE

AGENDA



- Remaining DOE ESS Project Updates
- Project Data Collection
- Expression Of Interest (EOI)
- DOE OE Energy Storage for Social Equity Initiative

EPB – CHATTANOOGA, TENNESSEE

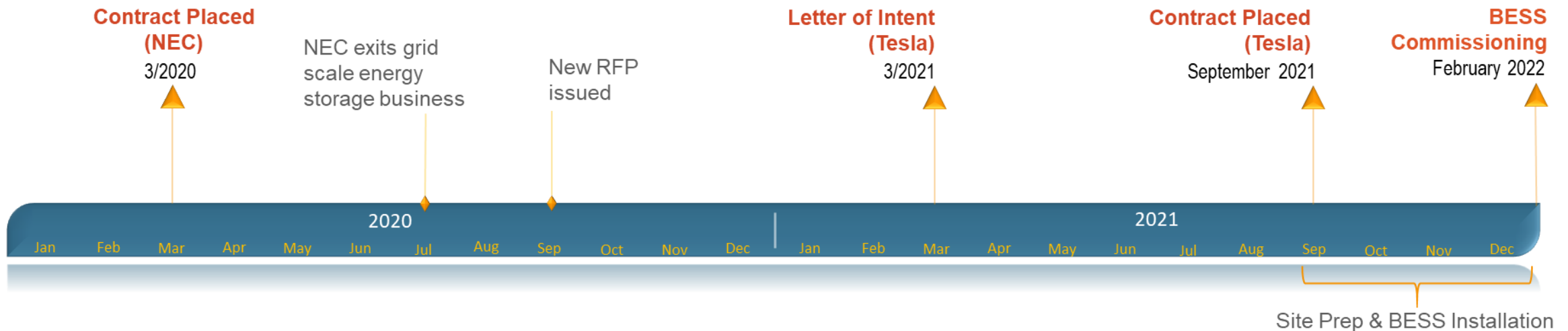


- **Project Information:**

- 1.25MW, 2.5MWh Tesla Megapak BESS coupled with a 1MW solar array and diesel generators
- Project is being installed as a utility asset to provide services such as peak shaving and resilience during a power outage by forming a variable sized islanded microgrid

- **Updates:**

- Site prep underway
- BESS equipment delivery and installation set to start late October 2021
- Tentative commissioning February 2022



GREEN MOUNTAIN POWER – NORTH TROY BESS PROJECT



Project Information:

- Install 5MW/12MWh BESS system within the Sheffield-Highgate Export Interface (SHEI) in Vermont.
- Congestion on the SHEI results in renewable resources being curtailed (most notably from the 63MW Kingdom Community Wind Plant) during periods of high generation.
- BESS will store energy when the SHEI export limit is reached and discharge when curtailments are lifted.

Updates:

- Contract with Green Mountain Power has been placed.
- Pre-design activities are in progress

Timeline and Key dates:



**Kingdom
Community
Wind Plant**



NAVAJO TRIBAL UTILITY AUTHORITY – UEP BATTERY SYSTEM



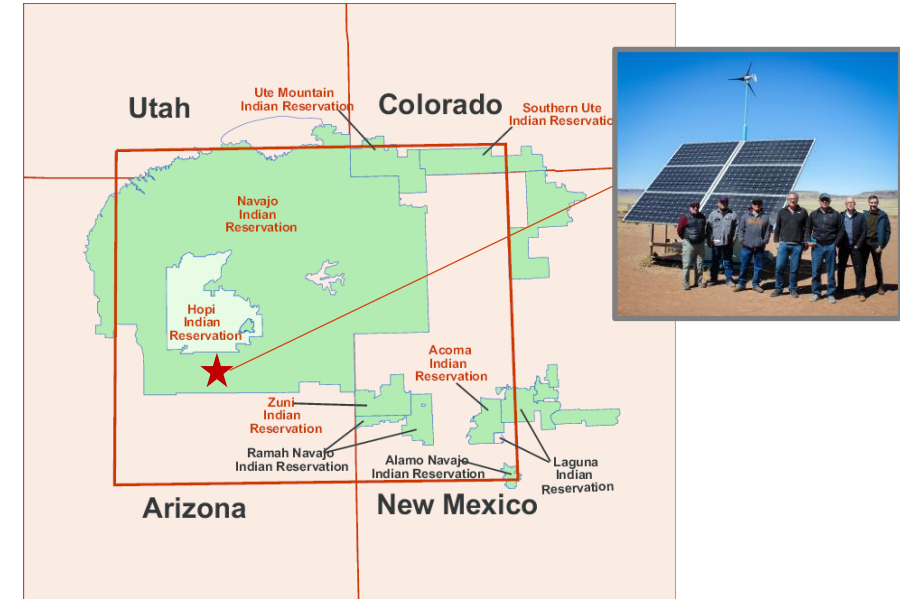
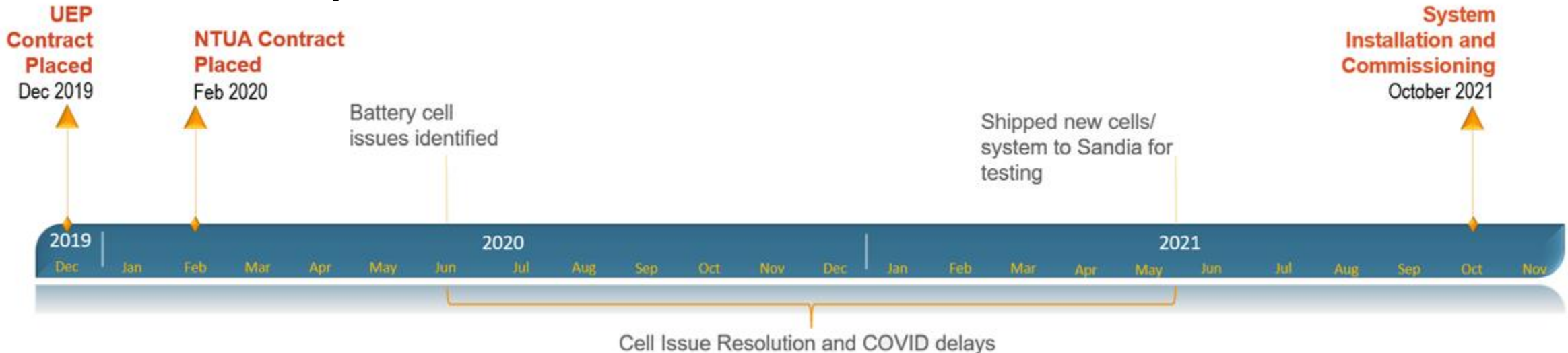
Project Information:

- Many residents (~18,000) are off-grid due to expense of installing electrical infrastructure to their homes
- Traditional lead acid batteries have proven to work but come at a cost with replacing every 3-5 years
- Procured an Urban Electric Power (UEP) ZnMnO₂ system rated at 3kW/13kWh
- Install and monitor performance over the next few years
- Evaluate UEP technology compared to traditional lead acid

Updates:

- System scheduled for deployment in October 2021

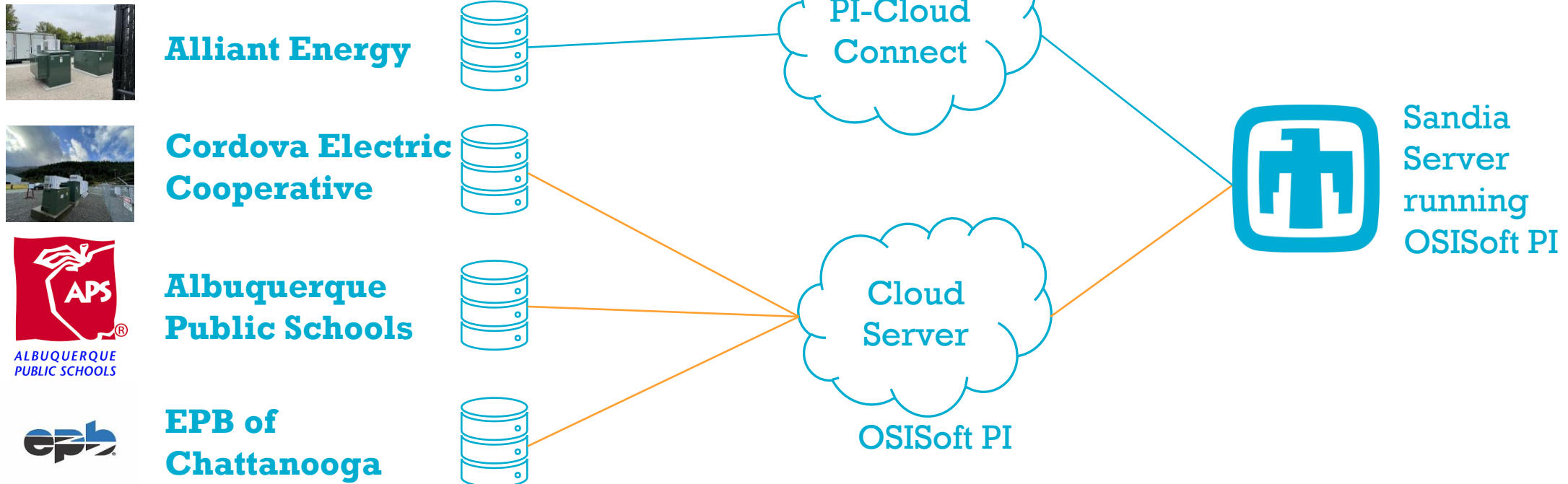
Timeline and Key dates:



PROJECT DATA COLLECTION



- Data collection and analysis from operating BESS is important to Sandia researchers to validate lab-level test data, technical, and economic analysis
- Demonstrations Project Team is working with several projects to bring in BESS data



EXPRESSION OF INTEREST (EOI)



- Clean Energy States Alliance (CESA) issued an Expression of Interest to gauge interest in project ideas for the Implementation of Innovative Energy Storage Pilot Projects. Topics of interest included:
 - Provide **resiliency and reliability** to rural electric grids
 - Advance **social equity**
 - Support installation of electric vehicle **fast charging stations**

- Total of **23** responses were returned of which:
 - **3** were **rural grid** related
 - **9** were **social equity** related
 - **6** were **fast charging** related
 - **5** were **other**

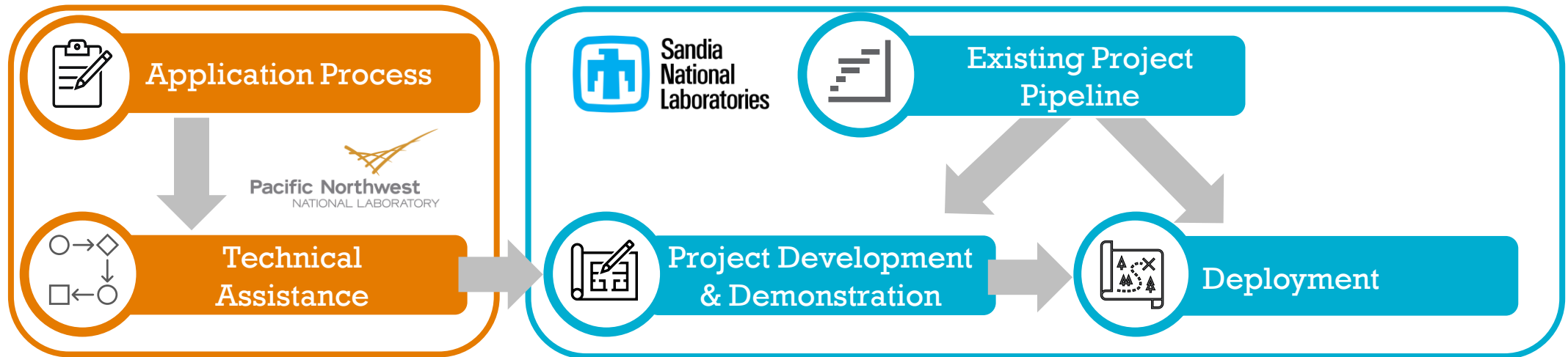
- The responses received under the category of “Advance Social Equity” formed the basis for initial project pipeline for the DOE OE Energy Storage for Social Equity Initiative

ENERGY STORAGE FOR SOCIAL EQUITY INITIATIVE



GOAL: Support disadvantaged communities affected by unreliable and expensive energy systems and supplies by offering assessments on energy storage feasibility, design, and application to enhance community benefit outcomes

PLAN:



OUTCOMES:

Connect disadvantaged communities with energy solutions that support equitable outcomes

Demonstrate the role of energy storage in energy equity

Develop methods and metrics to analyze impact of investment on equity

Report on lessons learned and best practices to support future work across DOE

Grow and strengthen DOE project pipeline

THANK YOU



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This work was Directed by Dr. Imre Gyuk through the Department of Energy Office of Electricity Delivery and Energy Reliability (DOE-OE) Stationary Energy Storage Program.