Energy Storage Deployment and Evaluation with the Electric Power Board (EPB)

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Introduction

- Project goal is to deploy and economically evaluate a 100kW/400kWh UET flow battery energy storage system with the Electric Power Board (EPB) of Chattanooga
- EPB is a municipally-owned distribution utility serving 175,000 homes and businesses in Chattanooga, TN
- EPB has installed 1.3MW of PV, which was commissioned in summer 2017

Approach

- The objective is to demonstrate economically viability via data collection and evaluation.
- Use cases must be defined and tested under common protocol.
- Methods to implement the use cases through EPB system must be identified and developed.
- Data is needed to demonstrate use cases.

Methodology

Results

- EPB System examined for use cases and several were found:
  - Demand Charge Reduction
  - Energy Arbitrage
  - Reactive Power and Voltage Support
  - Microgrid Field Services Building
- Others still being investigated:
  - TVA transmission services and Demand Response Program

Future Work

- Finish integrating protocols into EPB SCADA application.
- Test protocols functionality on EPB SCADA test harness
- Run Energy storage using test protocols and collect data
- Run Energy storage on optimized use cases
- Evaluate the data and examine Final Economic Potential of System

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