Day of Conversation

GMP’s Future Grid Vision

June 2, 2015
Current GMP Challenges/Opportunities

- Increasing capacity costs from ISO
- Regional energy supply tightening
- Growing regional reliance on NatGas
- Increasing weather disturbances
- Load growth flat or declining
- Increasing supply/load complexity

Cost/Risk Pressure

Technology creates an opportunity for us to embrace progress and transition to another business model

So what do we do?

Three Strategic Imperatives:
1) Change the distribution grid model
2) Engage customer value
3) Increase reliance on local resources
Today:

- Supply goes from one direction over long distances, leading to losses and immense infrastructure requirements
- Supply built to accommodate demand => Inefficient asset utilization

*When a customer turns on a kW of load, the bulk grid must supply that additional kW – which could result in nearly 2 kW being turned up to meet the need due to inefficiencies and losses*
Guiding Philosophy: Shift the locus of control from the bulk power grid to the near customer distribution grid and subject as much as possible to market forces.

- Exploit and create value from energy supply and demand assets behind customer meter
- Leverage advanced software and controls to automate grid observation and response functions for greater resilience and efficiency
- Complete re-focus on grid investments to maximize local values and resiliency
Pilot Circuit – East Rutland

- ~4 MW peak load
- 2.5 MW solar
- 1 MW solar
- 150 kW solar
- 3.4 MWH battery storage
- 150 controllable water heaters
- Home energy storage
Key Building Block: Solar+Battery

Stafford Hill Solar+Battery
- 2.5MW Fixed Solar on Landfill Cap
- 2MW/1MWH Lithium Ion Batteries
- 2MW/2.4MWH Lead Acid Batteries
- 4 – 500KW Multiport Inverters

GMP System Expansion Strategy
- Modularize storage solution for cost reduction
- Installation on most susceptible feeders to provide outage ride through during major storms
- Assets can produce other value streams during non-storm time (voltage regulation, on-off peak arbitrage, asset investment delay)