Moultonborough Storage
Energy Storage Services Agreement

BIA NH Energy Symposium
December 15, 2021 10:00 AM – 11:00 AM
Webinar

New Hampshire Electric Co-op

Agenda

- Project Overview
- Energy Storage Services Agreement (ESSA) Overview
- Operations
- Lessons Learned

Congressman Pappas & NHEC's Gary Lemay

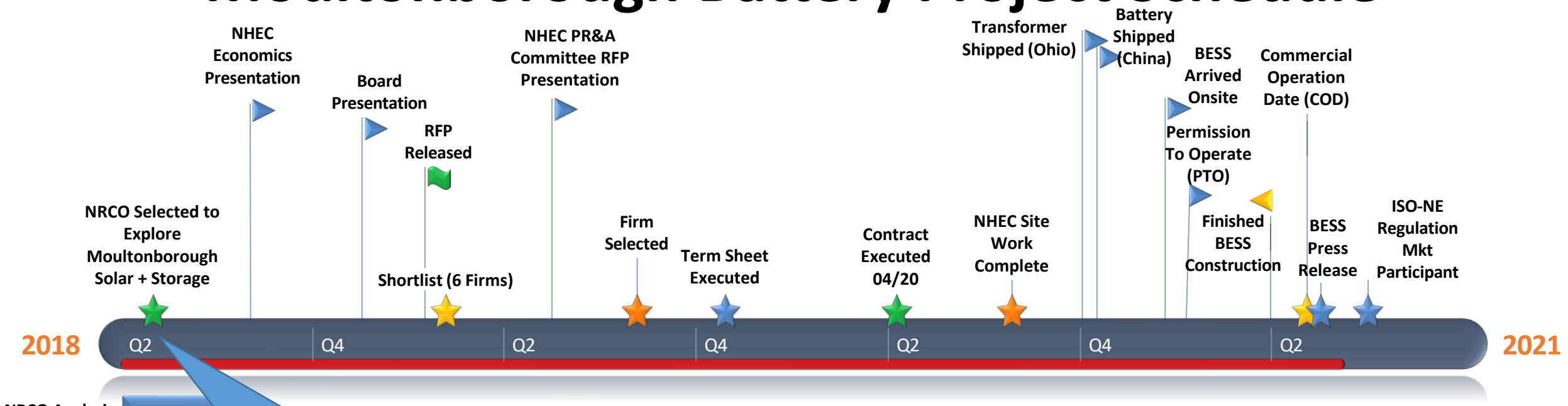
Moultonborough Battery Project Overview

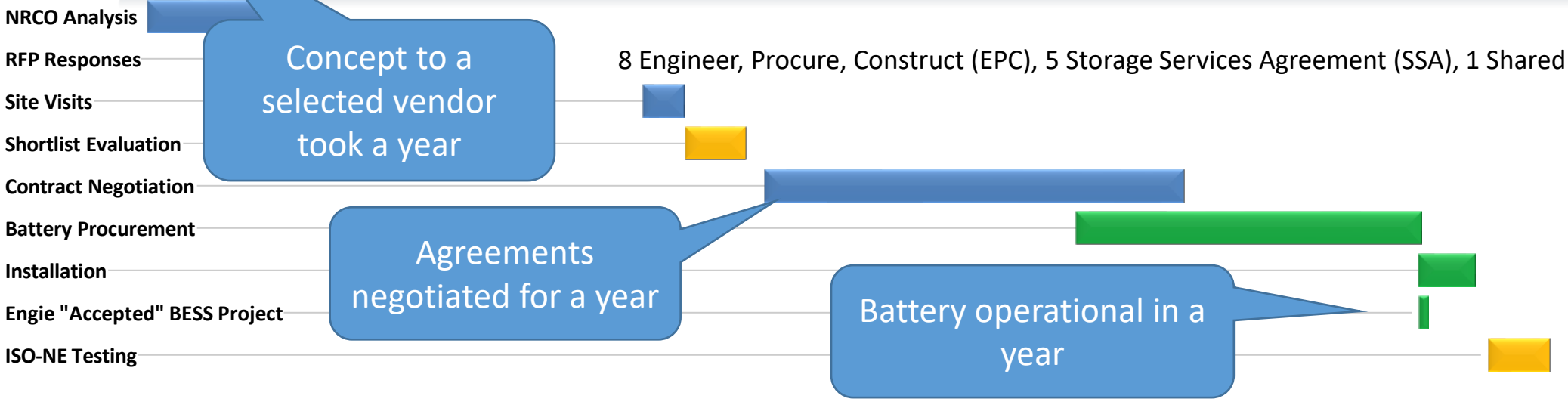
Moultonborough Battery Project Overview

- 2.45MW (AC)/ 2 HR Sungrow lithium ion battery (594 batteries)
- Located at the 2 MW (AC) Moultonborough solar array - operated independently
- Battery footprint is less than 500 ft^2
- Controlled remotely by Engie North America from California

NHEC.com

Moultonborough Battery Project Schedule





8 Engineer, Procure, Construct (EPC), 5 Storage Services Agreement (SSA), 1 Shared Revenue (SRA)

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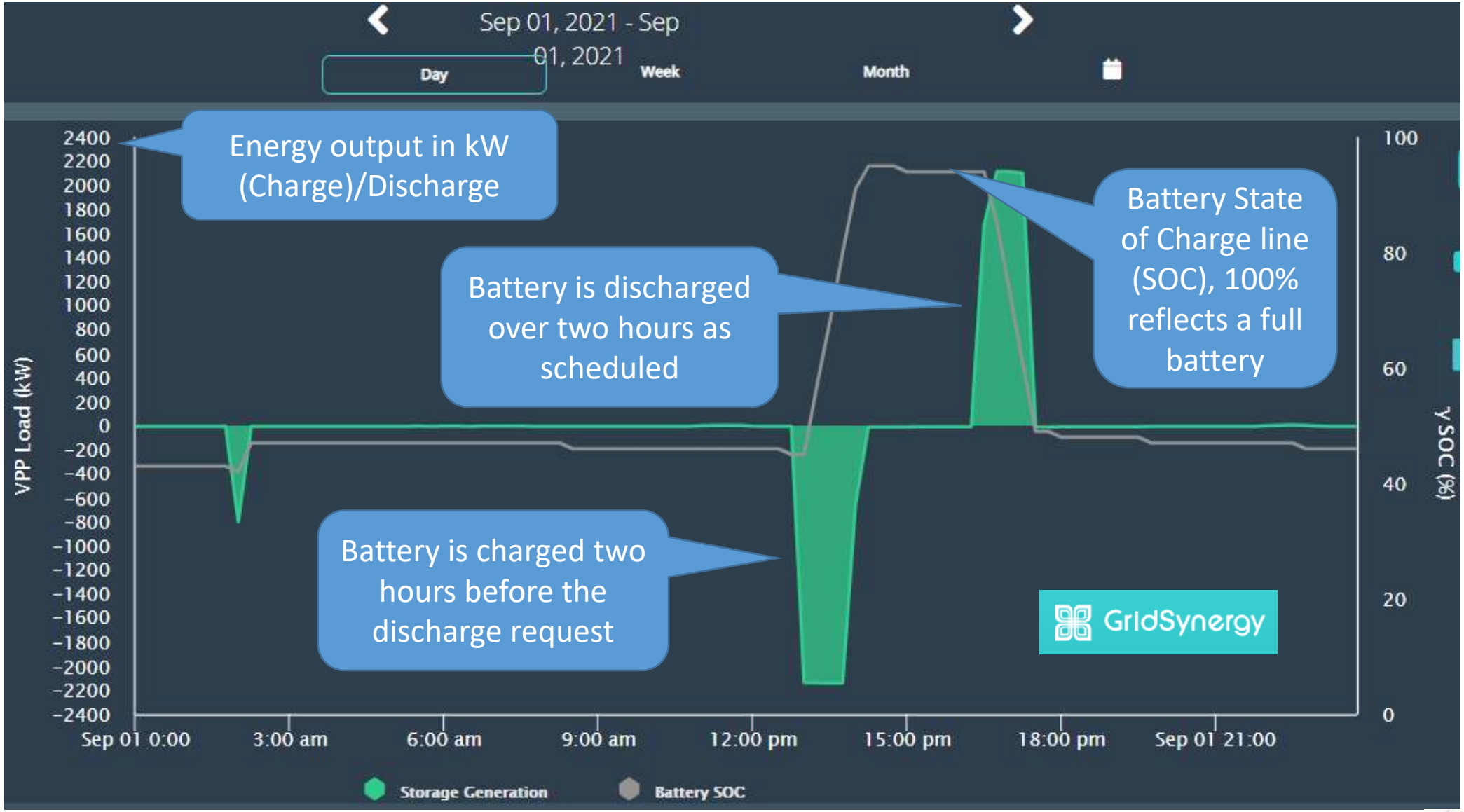
Moultonborough Battery Project
Energy Storage Services Agreement (ESSA)

Moultonborough Battery Project: ESSA

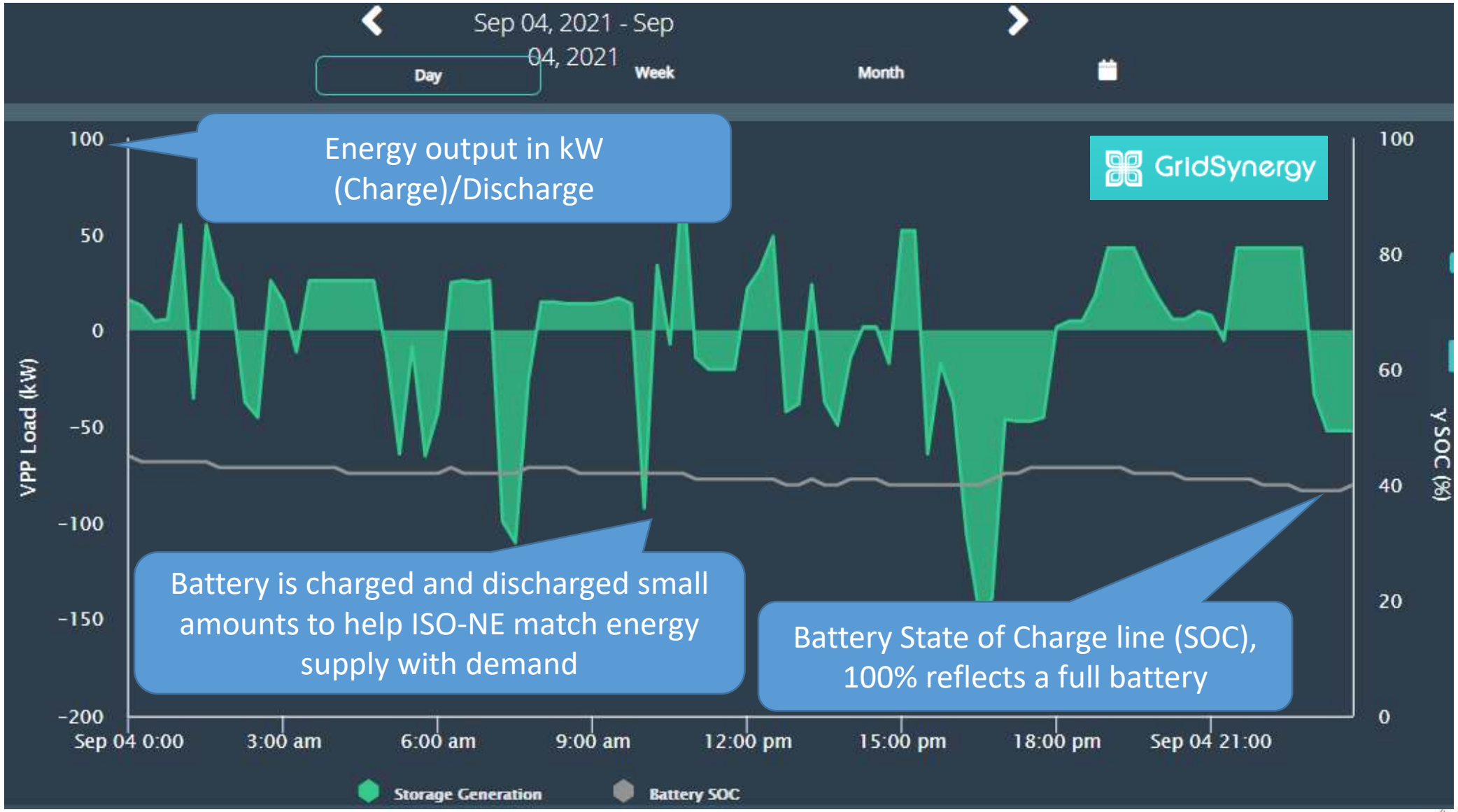
- "Between" the meter Energy Storage Services Agreement (ESSA)
- NHEC purchasess the ability to schedule up to 70 dispatches (energy discharges of two hours) of the battery for ten years for a fixed monthly payment (~140 hrs/yr, <2%/yr)
  - Additional dispatches can be purchased for a fee
  - Engie and NHEC produce daily forecasts to help choose dispatch hours
- NHEC shares in the revenue received from Engie North America's participation in ISO-NE wholesale markets (~8,620 hrs/yr)
  - Project provides regulation services as an Alternative Technology Regulation Resource (ATRR) helping ISO-NE meet supply and demand on a four second interval
- All parties are aligned to create maximum value from the battery investment

Moultonborough Battery Project Operations

Moultonborough Battery: NHEC Dispatch



Moultonborough Battery: Frequency Regulation



Moultonborough Battery Project
Lessons Learned

Moultonborough Battery Project: Lessons Learned

- Non-Standard Transformer Voltage
  - Utilities like to have redundancy wherever possible (550 Delta on the low side)
- Not a push button operation
  - Maximum output sustained over two hours is not as easy as it sounds with variances in output between hours
- Partial performance is an option
  - Battery operates as 22 independent battery control modules with 27 batteries each (594 total) allowing for partial operation even when there are issues

New Hampshire Electric Cooperative

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