Powering the Carbon-Free Electric Future

Modular Geomechanical Pumped Storage (GPS)

3rd TMCES
-Storage Deployment Panel
August 11, 2021

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VP Business Development | Quidnet Energy
low-cost, long-duration geomechanical pumped storage

Quidnet stores energy as high-pressure water underground

Modular, long-duration storage
Smaller scale, terrain independent and minimal surface footprint compared to traditional pumped hydro

Structural cost position
Less than half the cost of battery storage & pumped hydro

Broad geological footprint
Large resource available in low-perm, non-hydrocarbon bearing rocks. 100+ TWh across multiple US basins

Mature execution supply chain
Uses equipment and drilling methods proven in other industries; supported by established manufacturing and labor resources

1 Charge. Water pumped down the well into high-pressure storage lens
2 Discharge. High-pressure water flows up the well to drive a turbine
Development ramp up across major power grids, funded by leading investors and government agencies

**New York State (NYISO)**
~5 TWh estimated Gen-1 resource
NYSERDA-DOE funded development to characterize long storage resource upstate

**Texas (ERCOT)**
~5 TWh estimated Gen-1 resource
DOE funded development to provide firming capacity for retiring GW-scale coal & gas

**Ohio (PJM)**
10+ TWh estimated Gen-1 resource
DOE funded development for transitioning power supply mix across Appalachia

**Alberta (AESO)**
10+ TWh estimated Gen-1 resource
Emissions Reduction Alberta funded development co-located with renewables

**California (CAISO)**
~2 TWh estimated Gen-1 resource
Development planning for resource adequacy and firming for high solar penetration
Quidnet secures low-cost position, with minimal operations and supply chain complexity

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<th>Extremely low cost</th>
<th>Multi-decade asset life</th>
<th>Infrastructure-scale supply chain</th>
<th>Site flexibility</th>
<th>Safety and environmental impact</th>
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<td>Lithium-ion</td>
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<td>Flow battery</td>
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<td>Traditional pumped hydro</td>
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Commercial design
100MW Solar Project with 20MW/10hrs Quidnet Storage
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