

# PUMPED STORAGE HYDROPOWER

Chelan County PUD Clean Energy Expo

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*rPlus Energies, LLC | A Subsidiary of the  
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# RPLUS ENERGIES PORTFOLIO



FOUNDED IN 2018



BASED IN SALT LAKE CITY, UT



SUBSIDIARY OF RPLUS ENERGIES



DEVELOPS LARGE-SCALE PUMPED STORAGE  
HYDROPOWER



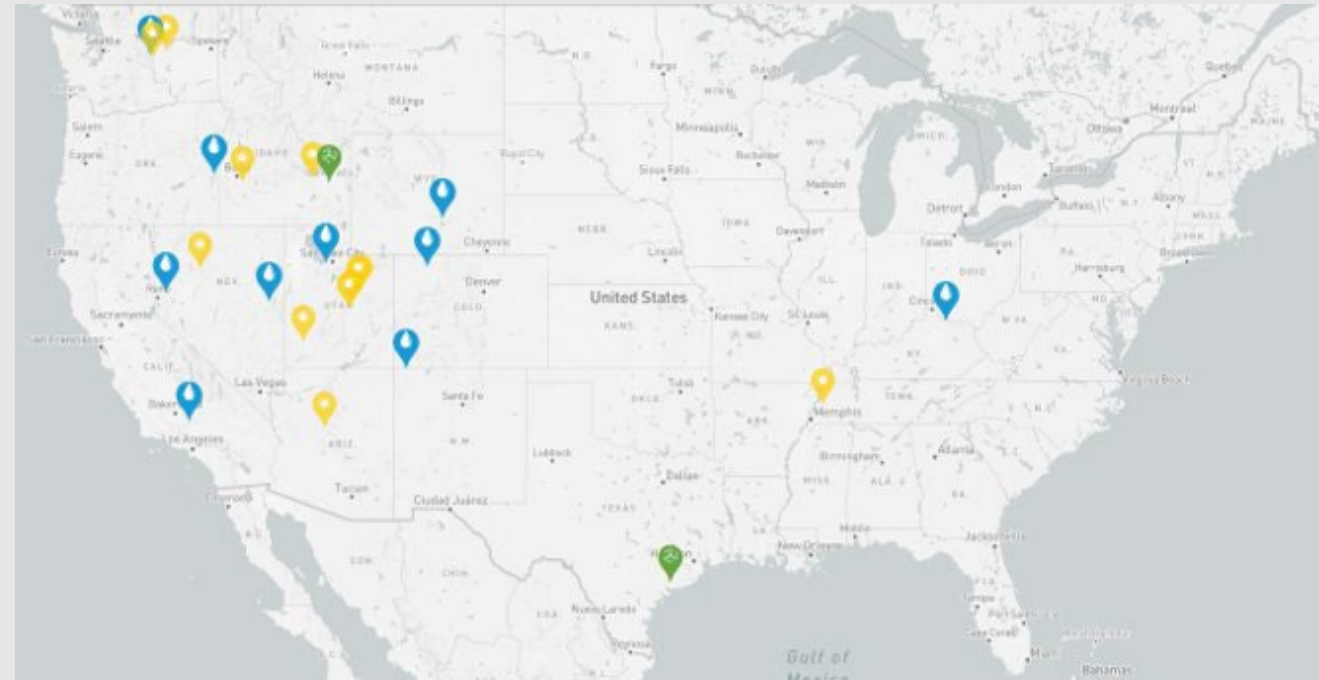
MORE THAN 12 PROJECTS ACROSS  
THE U.S.



HOLDS MORE THAN HALF OF THE PROPOSED  
PSH PROJECTS WITH INTERCONNECTION  
QUEUE POSITIONS



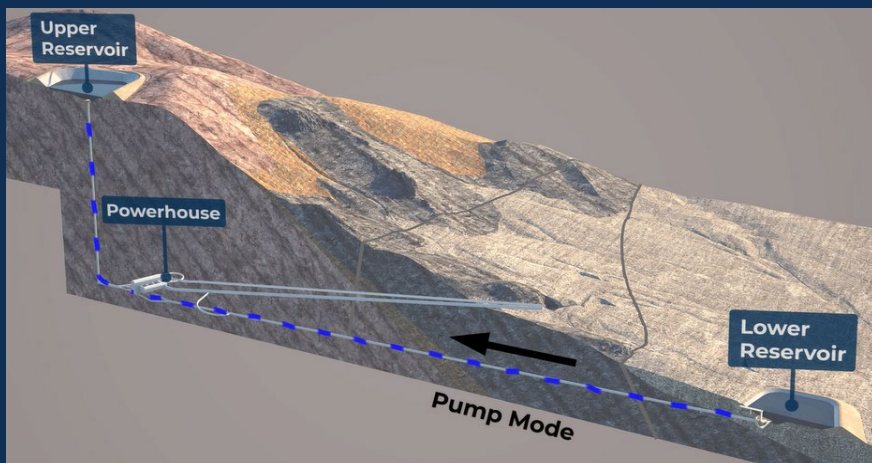
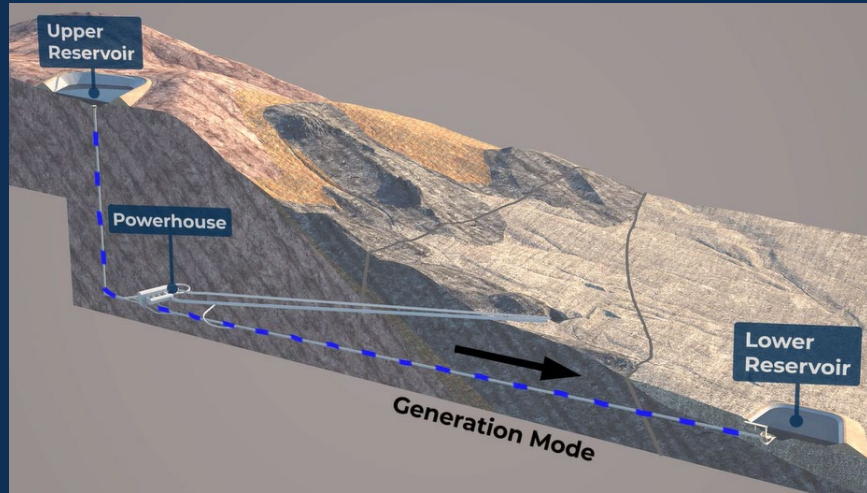
TWO PROJECTS WITH FERC FINAL LICENSE  
APPLICATIONS SUBMITTED IN Q1 2023





# Energy Storage

Vital for grid stability & reliability



Growth in electricity demand  
+  
Increase in transmission & distribution constraints  
+  
Aging grid  
+  
Increase in intermittent renewables  
=  
Massive need for energy storage



# Pumped Storage

The foundation of U.S. energy storage



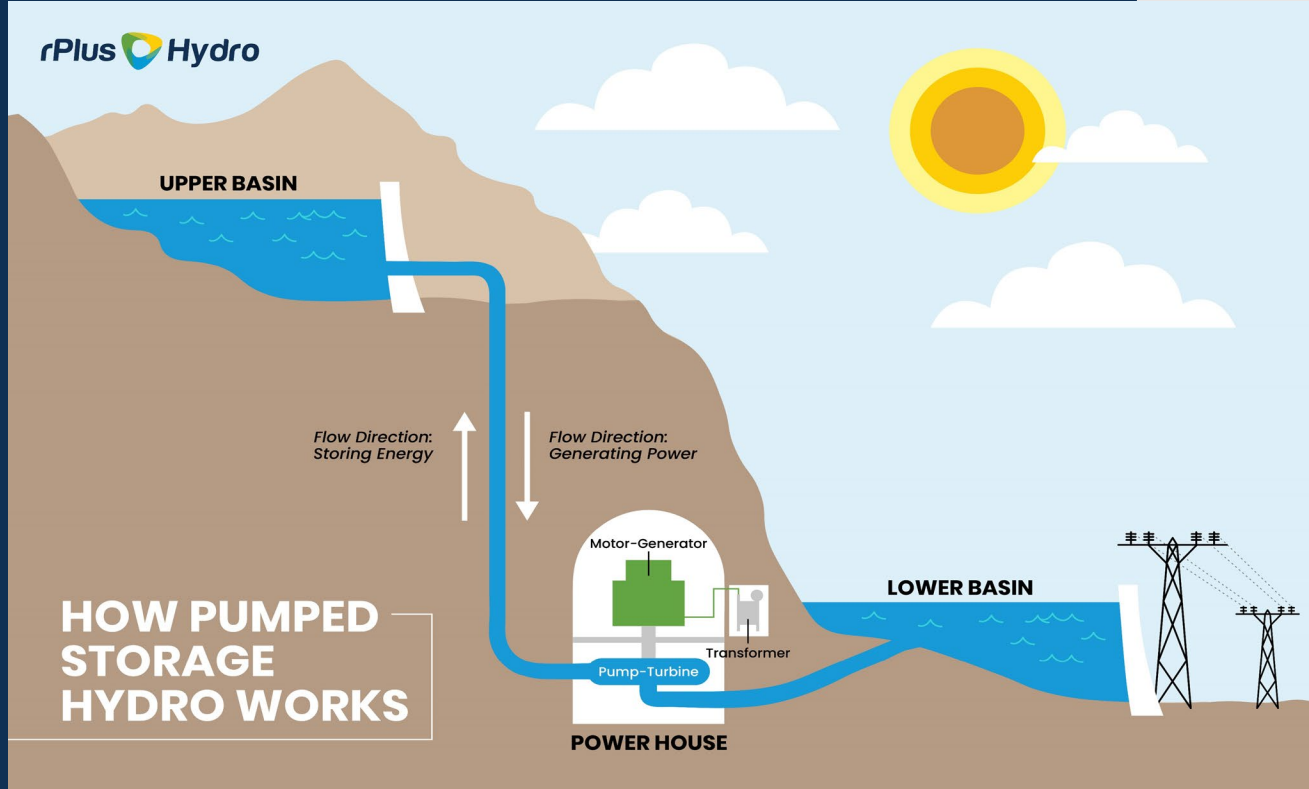
PSH is a technology that provides one solution for grid reliability and security & one of the few large-scale, affordable means of storing energy.

As of 2021, PSH represents over 90% of all utility-scale storage capacity in the U.S.

# How Pumped Storage Works

Think of pumped storage as a **giant water battery**

- Pumped storage converts electricity into potential energy by pumping water from a lower to an upper reservoir during off-peak periods
- When power is needed, stored water in the upper reservoir is released to flow downhill through a turbine.
- The gravity-driven force of the water flowing back down is then harnessed to produce electricity.
- From there, the electricity is put back into the electric transmission system.



## Key Site Requirements

- High head + low length-to-head ratio
- Proximity to transmission
- Available water source

# Comparative Advantages of PSH vs. Other LDES

PSH Global  
Recognition

Lower Cost per kWh  
than Li-Ion

Longer Useful Life  
Leads to Low LCOS

Contributes to Real  
System Inertia

Likely to Qualify for  
ITC  
Domestic Content  
Bonus

PSH Presents no  
Degradation of Life,  
Capacity or  
Efficiency



# Community Benefits

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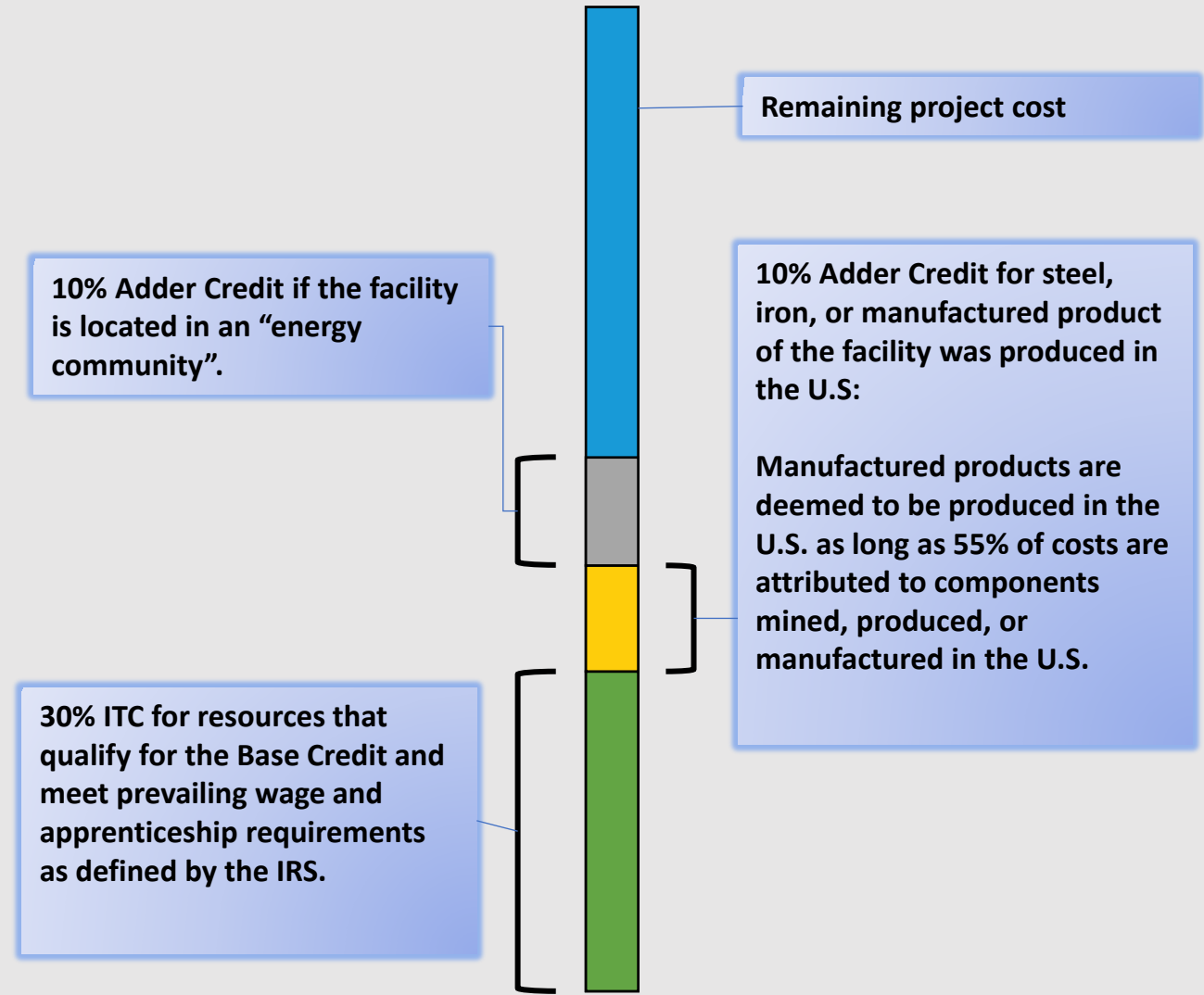


1. Increased property taxes & community bonding capacity
2. Job creation during construction and operation
3. Economic diversity & job security

# Economics of PSH

- Lowest levelized cost of storage
- Investment Tax Credit qualification
- \$/kWh basis are favorable when compared to other forms of energy storage, particularly for larger, longer-duration storage

## Full Project Cost





# THANK YOU!



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