

West Newton/Banning Mine Reclamation Proposal

Pump Hydro Storage
January 17th, 2019



Presenter: Gregory McBee

Google Earth

The Banning Site



Seneca

An aerial photograph showing the Seneca Dam and its reservoirs. The dam is a long, narrow concrete structure crossing a river. To the left of the dam is a large, circular reservoir. To the right is a larger, more irregular reservoir. The surrounding landscape is densely forested with trees in various shades of green, yellow, and brown, suggesting an autumn setting. The sky is overcast and grey.

Rated at 451 MW capacity

Upper Reservoir covers 100 acres



Muddy Run

Rated at 1072 MW capacity

Upper Reservoir covers 1,000 acres

Why Change?

- Pumped Hydro -- long term tax revenue & jobs for the area
- Provide ancillary grid services
- Allow for greater penetration of renewables
- Dependable source of energy storage -- Hydro Plants built to last 100 years.



Site Advantages



The Youghiogheny River

Electrical Power Grid

Close to I70/76 and local Railway

Upper impoundments & elevation change created by huge refuse pile

Gas Pipeline

The #4 Deep Mine - if proven suitable for lower pond

Site Advantages

Site ideally situated
for connection to
power grid:

1. Existing Substation with transmission capacity suitable for a 50MW facility and will increase significantly over the next couple years.
2. Strong tie to the grid, one station away from the EHV network.

Overview of Site





Two ponds -- to be
reshaped into first
upper pond



2nd Upper Pond



Lower Pond
(needs
excavated)

For Discussion: possibility
of using deep mine for
lower pond instead

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Banning Pump Hydro Storage



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Potential

Black Start:

- Revenue stream outside of markets
- Become a component of area restoration plans

Wholesale Markets

- Energy Storage can participate in the following PJM markets: Spot Energy, Congestion, Regulation, Synchronized Reserves, Operating Reserves, Emergency Energy and Load Response.





Wind

Potential

Plus Storage

Solar



Research Facility at Banning

Possibilities

**50MW Fossil
component of Future
Banning Microgrid**



Future



*Grand O. Reservoir
at Newton Pa*

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