

“Industry” Panel

- Michael Manwaring – HDR Engineering (Engineering/Environmental Firm)
- Jeff Leahey, National Hydropower Association
- Kirby Gilbert, MHW (Engineering/Environmental Firm)
- Steve Lowe, Eagle Crest Energy (Project Developer)
- Jim Patterson, Andritz (Equipment Provider)
- Ginger Gillin, GEI (Engineering/Environmental Firm)
- Kelly Tilford, Mead and Hunt (Engineering Firm)

Industry Panel

The background of the slide is a faded, blue-tinted photograph of a large dam with multiple spillways. In the upper right corner, there is a smaller, more distinct image of a large industrial building with a grid-like facade, possibly a power plant or manufacturing facility. The overall scene is industrial and scenic.

- In the next 15 years, how do you envision the industry would be impacted IF the Production Tax Credit is NOT get re-installed?

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- Earlier it was mentioned a new license could be granted in approximately 5.5 years.
 - How often are new licenses granted in that timeframe?
 - Is it possible to streamline this and still cover all the environmental and regulatory needs?

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The background of the slide features a faded image of a large dam with water cascading over its spillways. In the upper right corner, there is a smaller, semi-transparent image of a large, multi-story building with a classical architectural style, possibly a government or institutional structure.

- What type of federal support does the hydropower and pumped storage industry get?
 - Similar to other renewable energy or storage technologies?
 - Examples of federal support

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- If the permitting time and expense for natural gas development (via fracking) was even shorter, assuming it leads to lower natural gas prices in the next 15 years, what would be the impact to pumped storage development?

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- FERC mentioned there were over 60 permits for new pumped storage projects in the U.S.
 - How many of these are really going to get built?
 - What needs to happen for development to occur?
 - Is there the work force if 20+ projects were to get built?
 - Engineers?
 - Construction?
 - Equipment providers?
 - Other?

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- From a developer's perspective, how do you decide how to best invest funds during early stages of the project?
 - Engineering
 - Environmental/ FERC/NEPA Studies
 - Power Marketing and Long-term Financing

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The background of the slide features a faded, semi-transparent image of a large dam with water cascading over its spillways. In the upper right corner, there is a smaller, more distinct image of a large industrial building with a grid-like facade, possibly a power plant or a manufacturing facility. The overall color palette is muted, with greys, blues, and browns.

- What is the typical lead time needed to deliver pumped storage equipment to a project?
 - (ex. 250 MW units)
 - When do you start the detailed design/planning?
 - Can you provide any cost information (generally)?

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- What are the typical environmental studies are conducted as part of a Pumped Storage Project licensing process?
 - What is collected during the PAD process?
 - How many study seasons of new studies?
 - Is this enough information to make a “go” decision?
 - Are there ways to go back and make you do more studies?

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- Can you describe how the design of your project evolves from “initial design” (PP) to “final design”?
 - Footprint of reservoirs or dam
 - Design of tunnels or penstocks
 - Location of transmission lines
 - Understanding power needs (pumping/generating)

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The background of the slide features a faded, high-angle photograph of a large dam with multiple spillways. In the foreground, a river flows through a valley, and a power plant building is visible on the right side. The overall image is semi-transparent, allowing the text to be clearly legible.

- Describe how the Transmission development process occurs during the Project Development process?
 - At what stages do you focus on T-lines & how much?

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- In the next 5-15 years, where do you see the greatest opportunity for pumped storage hydro?
 - Do you think on public or private lands?

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- What areas of the country are most actively developing pumped storage projects and Why?

