



National Hydropower Association

Presentation to the Northwest Hydropower Association

Repositioning Hydropower in a New Era of Clean Energy

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U.S. Energy Policy Drivers

New Frenzy on Energy Policy

- Growing Demand for
New Energy Supply
Clean Energy Solutions
Domestic Sources
- Increase Pressure to Address Climate Change



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Opportunity to Reconsider Hydropower

Hydro's Role in A Climate Friendly
World Offers New Opportunity

But It Must be Seen
As A Solution
To Meet New Energy Demand
As Sustainable

The logo for the National Hydropower Association (NHA) features a stylized, curved shape in shades of teal and blue, resembling a drop or a wave, positioned above the acronym 'NHA'.

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Hydropower is the Power of Moving Water

- Rebrand Hydropower as much broader than conventional hydro
 - tidal
 - ocean and wave
 - hydrokinetic
 - conduit
- Show that it has tremendous growth potential

New Hydropower Technologies: Expanding the Possibilities

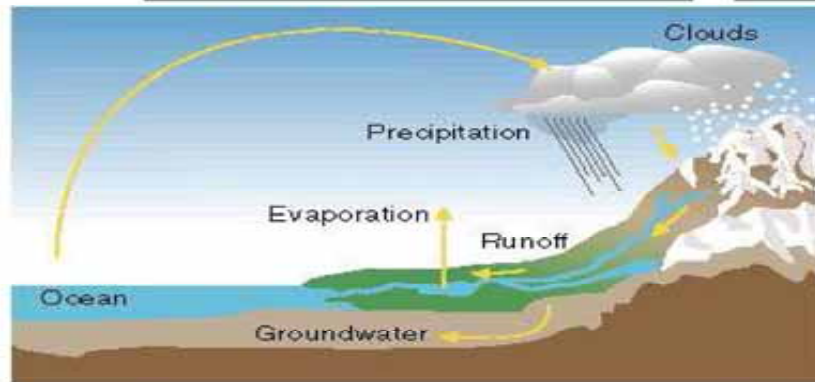
Wave Energy: Wave energy conversion devices capture mechanical power from the waves and use it to directly or indirectly power a turbine and a generator

Hydrokinetic Energy: Captures moving energy from the flow of water across or through blades to power a generator, similar to how a wind turbine captures the wind.

Tidal Energy: The flow from the tides of an ocean or stream is captured to make power.

Constructed Waterways: Conduits that use vast amount of flowing water, like irrigation canals, aqueducts and water supply or effluent streams generate flow that can be captured for power generation.

Any moving water has the potential to make power.



Water used for power is returned to the water cycle.

Conventional Hydropower: Harnessing Rivers' Waterpower

Impoundments: River water is stored in a reservoir behind an impounding structure, typically a dam, prior to use. The water may be released for generation either to meet changing electricity needs on a daily, weekly or seasonal basis or to maintain a reservoir level for other purposes such as flood control, irrigation, water supply or recreation.

Run-of-River: Flowing river water is diverted by a canal or penstock through the hydropower turbine and generator, then returned to the river. Generally, a run-of-river plant is one where water inflows equals water outflow.

Pumped Storage: River water is pumped using reversible pumps/generating units from a lower reservoir to an upper reservoir when demand for electricity is low (the power for pumping is generally supplied from the grid). During periods of high electricity demand, the water from the upper reservoir is released back to the lower reservoir through the reversible units to generate power.



NHA's Strategy in Rebranding

- Creation of Ocean, Tidal and New Technologies Council
- Building Coalitions with Traditional and Non Traditional Partners
- Education Campaign to Press, Public and Policy Makers
- Developing Road Map to Show Growth Potential
- Expanding our Resources

Why Road Map? Busting the Myth

- Growth Potential is Real
- Road Map Will Show Growth Potential by Technology
- Stresses Growth without Impoundments
- Ties Growth to US Investment Policies

Investment Strategy is the Wave of the Future

Includes reinvestment in policy support for new, next generation technologies, conventional and small hydropower.

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Policy Investments Critical To Success

Hydropower Growth is Tied to:

Tax Incentives

Clean Energy Incentives

RD&D Support

Reinvention of Regulatory Scheme

Reinvestment Policy Must Include R&D

- Requires reinvestment at federal government level in hydropower research, demonstration, and development
- R&D must include support of both conventional and non-conventional technologies
- Must include support of demonstration projects
- Must include revenue streams

Reinvestment Policy Must Include A New Look at Regulatory Structure

NHA is working to educate and position the issue of a new, smarter regulatory permitting process for new technologies and small hydropower

Building a New Industry – A New Future

Much like the wind industry was 10-15 years ago, we are creating a new hydropower industry;

- Industry includes both conventional and non conventional technologies
- Will supply clean, climate friendly energy for the next generation
- Will have new alliances and a renewed public support

A New Vision

“Hydropower is cool again”

Key is to continue to communicate, to continue to educate, to continue to be involved and aggressively promote what we bring to the table.

What Hydro Industry Needs To Do

- Actively engage on climate change
- Lay out a plan of how we can promote the benefits and find a role for hydropower
- Be aggressive in our outreach and education of a positive role

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Pathway to the Future

Hydro industry has a lot at stake in the climate debate.

What role will hydro play and how will it be impacted?

The policy “frenzy” is happening. Now is the time to get involved.

HydroPOWER

*The power of
moving water*

- CONVENTIONAL HYDROPOWER
- INSTREAM GENERATION
- OCEAN AND TIDAL ENERGY
- PUMPED STORAGE
- CONDUIT POWER



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*Clean Power for a
Secure Energy Future*

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