

National Hydro Association Speech

- 1. Nevada Hydro – Double Meaning**
 - a. Little Hydro in Nevada- INEL Study**
 - b. Nevada Hydro Unique FERC Case**
 - c. You Will Hear & Have Heard a lot about technology and about FERC- I want to speak in broader terms**
- 2. Hydro is the great uncle of the renewables family.**
 - a. And as a family- hydro, wind, geothermal, solar, biomass- it is important that Hydro work with its family members to promote common interests-**
 - i. PTC, Renewable Portfolio Standards, Open access to competitive markets, expeditious interconnection studies, adequate R&D funding.**
 - ii. Must continue to work together- WIREC, ACORE other collaborative efforts**
- 3. But all renewable sources including Hydro must do more-**

- a. **Last Year EPRI's Doug Dixon provided you at this conference details of an EPRI report that estimated 23,000 MW of additional hydro capacity could be realized by 2025.**

The potential increase in generation capacity was conservatively estimated at 23,000 MW by 2025, including 10,000 MW from conventional hydropower, 3000 MW from new hydrokinetic technologies, and 10,000 MW from ocean wave energy devices. I think this is very conservative. The EPRI report itself indicates the total potential may be as high as 95,000 MW. Recent data shows even this to be potentially conservative. FERC has 3,000 MW of hydrokinetic permit applications from one company alone in the Mississippi River. So the estimate from hydrokinetic sources could easily be ten times the EPRI estimate low estimate and as indicated in the report that hydrokinetic projects including Ocean wave projects could account for as much as 33,000 MW of new capacity.

Other studies indicate from Idaho National Lab Water Energy Program: 130,000 streams suitable for projects between 10 kW and 30 MW. 100,000 MW new capacity. 30,000 MW when considering technological and environmental limitations.

Achievement of new potential capacity could be accomplished through the following endeavors:

- i. Establishing a public-private sector AWEI program, which would provide RDD&D guidance and funding support of \$212 million (short-term)) and \$377 million through 2020. The AWEI would be designed to achieve near-term conventional hydropower gains, while fostering the development and commercialization of waterpower technologies that produce energy from hydrokinetics and ocean wave resources.**
- ii. Extending the Production Tax Credit**

(PTC) and Clean Renewable Energy Bond (CREB) programs to 2015. These economic incentives would foster 1) investment in modernizing the infrastructure at existing hydropower facilities, and 2) installation of new facilities at existing dams.

iii. In addition to these endeavors, although not evaluated in detail in the EPRI assessment, regulatory process enhancements that expedite project licensing could also contribute to realizing the potential of domestic hydropower energy resources. The recent technological accomplishments of the waterpower industry, as reviewed in the EPRI report, demonstrate likely achievement of this potential.

b. But I submit the 23,000 MW lower conservative figure of the EPRI report by 2025 is not now good enough. Hydro is currently 9% of U.S. total summer capacity (78 GW of 884). I think we can at least double that by 2030. This

means another 90 GW from hydro by 2030. That includes upgrades to existing facilities, new small hydro on existing streams and rivers, and hydro kinetic and ocean wave energy projects.

c. This goal fits with the goals that I established for myself when I came to FERC. First I pledged to do everything in my power to improve the efficiency of the energy infrastructure in this country. Supporting the efficiency improvements to existing hydro facilities that in some cases have increase capacity by as much as 100% helps to fulfill that mission. Second I promised to increase the diversity of resources available to the grid, especially renewable resources that are now under utilized and underdeveloped. And to increase the access of renewable energy to the grid. So advancing this goal of 90 GW of new hydro capacity by 2030 will also serve to achieve my renewable objectives.

d. But why is all this so urgent- April 7, 2008, James Hansen, director of NASA's Goddard

Institute for Space Studies, warned the world must urgently make huge CO₂ reductions, and that the European Union and its international partners must rethink targets for cutting CO₂ in the atmosphere because they have grossly underestimated the scale of the problem.

Hansen says the EU target of 550 parts per million (ppm) of CO₂—the most stringent in the world—should be slashed to 350 ppm. In the paper Hansen co-authored with eight other climate scientists, “Target Atmospheric CO₂: Where Should Humanity Aim?,” submitted to *Science* magazine, his team used evidence from the Earth's history to estimate the sensitivity of the climate, which they say gives a much more accurate picture than using theoretical models. Hansen said, “If you leave us at 450ppm for long enough it will probably melt all the ice—that's a sea rise of 75 meters. What we have found is that the target we have all been aiming for is a disaster—a guaranteed disaster.” Hansen said global warming has plunged the planet into a crisis and the fossil

fuel industries are trying to hide the extent of the problem from the public. He said heat-trapping greenhouse gases have reached the “tipping point” of 385 ppm. Hansen calls for phasing out all coal-fired plants by 2030, taxing their emissions until then, and banning the building of new plants unless they are designed to trap and segregate the CO2 they emit. He said, “The problem is that 90 percent of energy is fossil fuels.

- e. So if we just harnessing 25% of offshore wave energy resource at 50% efficiency that would be comparable to all US conventional hydro generation in 2006**
- f. But Issues for all hydro developers including Hydrokinetic and Ocean Wave Project Developers are barriers to this goal:**
 - Minimal government R&D support**
 - Time consuming regulatory process**
 - Multiple permitting/regulatory**

authorities

- **Extreme & unbalanced**

expectations for

environmental protection

- **Lack of regulatory certainty and flexibility**

4. What has FERC been doing to reduce these

concerns- We can't help much with the minimal

R&D except informally talk to members of

Congress- I pledge to do that.

a. For conventional hydro projects- Integrated Licensing Process or ILP- First license issued for PPL Montana's Mystic Lake Project- This process brings greater efficiency and transparency to the hydro licensing process. I am glad that NHA actively participated in the FERC rulemaking and implementation process. And I would support other innovations and streamlining of our licensing process both for conventional hydro and hydrokinetic development.

b. And we have advanced the process on the hydrokinetic side with The pilot license process for experimental Ocean Wave and

Hydrokinetic projects with our first license issued for Finivera’s Mahak Bay Offshore Wave Pilot Project in December. This is a real breakthrough for the development of hydrokinetic and ocean wave projects. It provides developers with the regulatory certainty necessary to obtain financing to move forward and develop these new nascent technologies that can provide new needed renewable capacity. And this pilot license was also the first “conditioned” license issued by the Commission. This means that FERC issued the license in advance of some outstanding federal power act requirements either by other federal agencies or state governments. This allows the developer to focus on those other regulatory requirements and also potentially seek financing based on the conditioned license. Both the conditioned license and the pilot license process are the subject of White Papers that have been posted on the FERC website and are available for download.

I also promised to talk about Nevada Hydro- Well not hydro projects in Nevada but a project called Nevada Hydro- On March 24, 2008 FERC issued an order in the Nevada Hydro Case – Rehearing is still pending and I will discuss the merits. The case is interesting in that the company requested rate incentives for the Lake Elsinore Advanced Pump Storage project (LEAPS), under Section 1241 and 1223 of the 2005 EPACt and Commission rule 679. The LEAPS facility "may not be operated and/or managed by the California Independent System Operator Corporation or functionalized as transmission for rate recovery purposes," FERC said. Accordingly, FERC denied Nevada Hydro's request for incentives for the LEAPS project, but encouraged Nevada Hydro to pursue other regulatory incentives.