

## FERC Commissioners Comment on Hydro



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Commission*

Although I come from New Mexico, a state not normally associated with hydroelectric power, I am a long-time believer in the many benefits hydroelectric power offers. It is immune to price increases for fossil fuels; it can provide outstanding recreational opportunities; and it is reliable. Hydroelectric power provides significant generation, peaking capacity, and ancillary services to bolster the reliability of the U.S.'s transmission system, and hydroelectric units are able to start, stop, and change output quickly. It has been said many times, but bears repeating: there is no better example of hydropower's critical role in maintaining electric grid stability than its important role in bringing the electric grid back on line following the August 2003 blackout.

Perhaps most important, hydropower is clean and carbon-neutral. As the United States — indeed the world — faces the major environmental concern of climate change, we need to find ways to reduce carbon emissions while meeting our growing energy demands. Although hydropower's benefits in meeting our energy needs are well known, I believe the commission should be loud and clear in voicing the lesser-known benefit of low-emissions energy that can be derived from hydropower to reduce the effects of climate change. By way of example, according to the Pew Center on Global Climate Change, Brazil generates over 90 per-

cent of its electricity by capturing the energy in falling water. Per capita carbon emissions in Brazil are less than half the world average, largely because of the country's heavy reliance on hydropower.

In the U.S., approximately 10 percent of all electricity generated comes from hydroelectric projects. The commission regulates more than 1,600 hydroelectric projects at about 2,500 dams pursuant to Part I of the Federal Power Act. These projects generate about 57,000 MW of hydroelectric power, which represents half of that 10 percent total.

One exciting emerging area of growth for additional hydropower sources is "new technologies," which the commission generally defines as mechanisms to produce hydropower from ocean currents, tides, wave action, and in-river projects, without the use of a dam. Indeed, new technologies could add a substantial amount of capacity in the U.S. A recent Electric Power Research Institute (EPRI) study estimates the potential for wave and current power in U.S. oceans to be over 350 billion kilowatt-hours per year, which would equal the output of traditional hydropower in its most productive years. Put another way, ocean-based hydropower using new technologies could potentially double hydropower production of the current national total.

In the past, efficient and reliable conversion of kinetic energy from water has proven difficult, but with recent advances in technology, rising fuel costs, and a growing demand for clean energy, the potential for the use of new hydropower technologies is growing. Indeed, in the last couple years, new hydropower technologies have gained significant momentum, and captured the time

and attention of this commission.

While there is no doubt that ocean currents, tides, wave action, and in-river projects have numerous potential benefits, the technology is new, and the potential environmental and safety concerns of such projects, as well as their feasibility, are not fully understood. Nevertheless, we have seen a surge in applications for preliminary permits for the new technologies. Prior to 2004, we received no applications for projects using ocean technologies. Just three short years later, we have issued 46 permits, including 41 for proposed current energy projects, four for proposed ocean wave energy projects, and one for a proposed tidal energy project. More than 30 additional preliminary permits are pending.

In recognition of the extraordinary interest in this promising technology, in October 2007, the commission held a technical conference to hear stakeholder comments on a staff proposal for a streamlined pilot license process for proposed hydrokinetic projects that are 5 MW or less, which would receive license terms of approximately five years. This pilot process would reduce barriers to new hydrokinetic energy projects, while ensuring environmental effects are monitored and assessed.

I believe a hallmark of this commission is its commitment to meeting the ever-evolving challenges and opportunities facing the hydroelectric licensing and compliance process. Our careful consideration in addressing new technologies is but another example of that commitment. It is critical that we continue to work closely with stakeholders in the hydropower industry, as well as policy-makers and other regulators, to encourage the development of new technologies to foster clean, reliable energy. ■