

Inside FERC

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FERC sees influx of proposals for small hydro projects in reaction to incentives

Bolstered by promises of federal tax credits and grants for new projects, and spurred on by the need to meet increasing demand and state renewable energy standards, utilities and independent developers have amped up efforts to tap into existing waterways to build hydropower projects.

Through upgrades, new projects and the addition of generation units to federal non-power dams, developers increasingly seem to be pursuing relatively small capacity projects of 50 MW or less.

With four months remaining in 2009, the number of small capacity projects seeking FERC hydropower licenses or exemptions is nearly triple the amount filed during all of last year, according to commission staff.

FERC received six license, relicense or exception applications in 2008, representing about 26 MW of new capacity. Yet as of last week, it had received 16 such filings in 2009, representing about 163 MW of new capacity. In 2007 the commission received three hydropower license or exemption applications that represented about 4.4 MW of potential new capacity.

Under Part I of the Federal Power Act, FERC may exempt a project from requiring a license if it features capacity of 5 MW or less and would be built at an existing dam or use a natural water feature instead of building things such as reservoirs. Exemptions also may be granted to a public utility project of 15 MW or less or to a municipal project of 40 MW or less if the facility is used primarily for distributing water for "agricultural, municipal, or industrial consumption and not primarily for the generation of electricity," according to the commission.

Small capacity projects have become such a topic of interest of late that the National Hydropower Association on Friday was set to unveil a council on small hydro. "We have seen a tremendous amount of

new interest in developing small hydro from not only our members, but we've also seen a dramatic increase from local communities, for example, that have dams or had [power] projects on them at one point," said Jeffrey Leahey, NHA's senior manager of government and legal affairs.

One of the first items on the agenda for the council will be defining "small" hydro. "There are very different definitions of 'small' from state to state and in FERC regulations," as well as in Europe, he said.

Developers are looking to meet increasing electricity demands and state renewable standards. And there are "a lot of new incentives . . . that have been put in place in the last five years that are probably affecting the number of projects that are economic and can be built," Leahey said.

Options for developers include federal and state incentives such as production tax credits and investment tax credits and a grants program jointly run through DOE and the Department of the Treasury for developers that forego taking a tax credit from the stimulus bill, Leahey noted.

"There's a new enthusiasm for hydropower development," agreed Doug Dixon, Electric Power Research Institute senior project manager for water power and author of a 2007 EPRI report that assessed water power potential in the US. People are willing to go back and say "we didn't like hydro power," but now it may not be so bad in light of current needs for renewables and a resource that can firm up, or fill in for, intermittent wind generation.

"One of the biggest problems with wind is it's not reliable," Dixon said. "Pumped storage now has a new angle of interest."

Based on a number of studies from the late 1980s through 2006, EPRI in 2007 issued a conservative estimate that hydropower generation has the potential

to increase by 23,000 MW by 2025. Of that amount, about 10,000 MW could come from "conventional" hydropower through facility upgrades, new projects and the addition of power units to existing dams, the report suggested.

An updated hydropower assessment is expected to be released by EPRI in the next several months, Dixon said.

Although the total potential for hydropower will not change from between 85,000 MW and 95,000 MW, the new report is expected to find that actual hydropower generation in 2025 could increase by almost double of what was previously estimated, Dixon said. The new report also will factor in new proposals for pumped storage hydropower. For want of data, pumped storage was not included in the 2007 assessment.

NHA "would anticipate that there's a lot more [water power potential] out there than what was being projected in early studies," Leahey said. "A lot of that is being borne out by the applications being filed with FERC."

As of last week, the commission had in its queue 47 proposed small-capacity projects that have either been accepted into the commission's licensing process or are preparing to file a comprehensive application. The expected capacity for those projects is about 495 MW.

Commission staff is keeping pace with the increased workload, said FERC spokeswoman Barbara Connors. "It's all under control. It's not an issue."

From January through July, FERC granted seven licenses for existing or proposed small hydrokinetic projects representing a combined 27 MW and three licenses for larger projects, two more licenses for small projects than were issued during the same period in 2008.

The commission issued 11 licenses for

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small projects in all of 2008, plus seven licenses for projects with a capacity higher than 50 MW.

On Wednesday, the commission gave a license to Symbiotics for its proposed 4.7 MW Clark Canyon Dam project (P-12429) on the Beaverhead River near Dillon, Montana. A subsidiary of Symbiotics, Clark Canyon Hydro will operate the unit and use surplus water from a dam operated by the Department of the Interior's Bureau of Reclamation.

Acting either as a developer or a consultant, Symbiotics is currently seeking or has obtained more than 40 preliminary permits for conventional hydropower projects. Of that number, about five are in the licensing or pre-licensing process, said David Boyter, Symbiotics' director of engineering. The portfolio of proposals is concentrated primarily in the Northwest, because that's where "there are a lot of [non-power] projects that were built for flood control . . . or irrigation."

Overall, many of Symbiotics' projects are proposed at dams owned and operated by the Army Corps of Engineers or the Bureau of Reclamation. The founders of Symbiotics "felt there were a lot of existing dams out there" that could be used to generate power with less work and financial risk than it usually takes to plan, license and build a facility from scratch, Boyter said. "There is that potential out there. The energy is just being lost."

There is also "less environmental impact" in using existing structures "than if you go and build one yourself," he added.

Although the potential environmental impact varies between projects, environmental groups tend to favor proposals that would add power units to existing hydro infrastructure.

In fact, the conservation group American Rivers has lobbied for state and federal legislators to allow new hydropower capacity to qualify as a renewable under a potential federal or existing state renewable energy portfolio requirements, but only if the projects use existing infrastructure and do so in a way that

doesn't cause additional harm, said John Seebach, American Rivers' director of the hydropower reform initiative.

The amount of generation capacity of a hydropower project makes no difference in terms of the environmental impact, he added. Instead, "it's how they're developed and the fact that they're being developed at existing infrastructure. That's what matters."

Moreover, a developer shouldn't qualify for incentives if its project changes the flow of a river "unless you're doing so in a way that's going to improve the environmental quality of a river," Seebach said.

No changes in operations or instream flow releases would be needed for two small-capacity projects proposed at a set of flood control dams managed by the Corps on the West River in Windham County, Vermont.

Blue Heron Hydro in July told the commission that it intends to seek licenses for the proposed 2.2 MW Ball Mountain project and 960 kW Townshend Dam project; it asked to use FERC's traditional licensing process.

Turbines and submersible generators would be installed upstream of each federal dam and the generation would serve customers in South-Central Vermont. "It's an area of Vermont called the Southern Loop that's transmission constrained and really needs reliable power within that area," said Lori Barg, president of Blue Heron Hydro. "It's the lowest impact hydro project that you could come up with," she said.

Some developers are also increasing capacity at existing facilities. Pacific Gas & Electric on Thursday was allowed to amend its license to add a 2.8 MW powerhouse at a 315 MW hydropower project on the Pit River in Shasta County, California.

"The new unit would allow PG&E to meet California's renewable portfolio standard, which requires 20% of each utility's customer electric load to come from qualifying renewable generation sources by 2010," said the FERC order. —*Esther Whieldon*

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