Hydroelectric Power Makes Big Comeback at U.S. Dams

DAVID PITT, Associated Press

DES MOINES, Iowa (AP) — On a typical summer weekend, hundreds of boats glide across the shimmering surface of Iowa's Lake Red Rock, the state's largest body of water.

The placid 15,000-acre lake was created in the 1960s after the government built a dam to prevent frequent flooding on the Des Moines River. Now the cool waters behind the dam are attracting interest beyond warm-weather recreation. A power company wants to build a hydroelectric plant here — a project that reflects renewed interest in hydropower nationwide, which could bring changes to scores of American dams.

Hydroelectric development stagnated in the 1980s and 1990s as environmental groups lobbied against it and a long regulatory process required years of environmental study. But for the first time in decades, power companies are proposing new projects to take advantage of government financial incentives, policies that promote renewable energy over fossil fuels and efforts to streamline the permit process.

"We're seeing a significant change in attitude," said Linda Church Ciocci, executive director of the National Hydropower Association, a trade group.

The Federal Energy Regulatory Commission, which oversees hydroelectric projects in the U.S., issued 125 preliminary hydropower permits last year, up from 95 in 2011. Preliminary permits allow a company to explore a project for up to three years. The agency issued 25 licenses for hydropower projects last year, the most since 2005.

In all, more than 60,000 megawatts of preliminary permits and projects awaiting final approval are pending before the commission in 45 states.

"I've never seen those kinds of numbers before," Church Ciocci said.

The interest in hydropower is so intense that some utilities are competing to build plants at the same dams, leaving the government to determine which ones get to proceed.

Hydroelectricity provides about 7 percent of the nation's power using about 2,500 dams. But those dams are just a fraction of the 80,000 in the United States. Most were built for flood control, to aid in river navigation or to create recreational areas. So they do not have power plants.

The Department of Energy concluded last year that the U.S. could boost its hydropower capability by 15 percent by fitting nearly 600 existing dams with generators.

Most of the potential is concentrated in 100 dams largely owned by the federal government and operated by the Army Corps of Engineers. Many are navigation locks on the Ohio, Mississippi, Alabama and Arkansas rivers or their major tributaries.

The state with the most hydropower potential is Illinois, followed by Kentucky, Arkansas, Alabama, Louisiana, and Pennsylvania. Rounding out the top 10 are Texas, Missouri, Indiana, and Iowa, the study concluded.

Workers could begin construction on the Red Rock Dam as early as the spring. The project involves drilling two holes in the 110-foot high, mile-long dam and running water through two turbines.

Missouri River Energy Services, a Sioux Falls, S.D.-based not-for-profit utility that provides power to 61 cities, has the license to build the power plant at an estimated cost of $260 million.

When complete, the 34-megawatt facility will be able to support as many as 18,000 homes for a year, said company spokesman Bill Radio. It could crank out up to 55 megawatts at times when the river is running full.

Missouri River Energy is considering three other hydroelectric projects at existing dams — one on the Des Moines River north of Des Moines and two others on the Mississippi River at Dubuque and Davenport.

Electricity suppliers prefer hydropower because it is much easier to ramp up or down based on customer demand than natural gas-powered plants, and it is much more reliable on a daily basis than wind or solar power.

The proposed developments also benefit from worries about the environmental risks of coal power and safety fears surrounding nuclear energy.

"I do think we're going to see more of this," Radio said, citing the difficulty of building coal or nuclear facilities. "You take two really big pieces of future generation out of the mix right now, and what that leaves is natural gas, hydro and other renewables."

While hydroelectric plants cost more to build than those that run on natural gas or wind power, they require little maintenance for decades and the fuel is free.

Hydroelectricity got a boost in 2005, when Congress approved a tax credit for hydropower that was already in place for other sources of renewable energy, including wind and solar.

President Barack Obama signed two bills last month designed to spark more

interest in hydropower. One directs the FERC to consider adopting a two-year licensing process at existing non-powered dams. The second authorizes quicker action on proposals for small hydro projects at dams owned by the U.S. Bureau of Reclamation.

Interest in hydropower had been low because of the high cost of construction and a protracted government permit process requiring extensive environmental studies and mounds of paperwork. That left projects mired in bureaucracy for as much as eight years before construction could begin.

"If you keep putting money into something over eight years, pretty soon the cost of that capital just eats you up," said Kristina Johnson, the former undersecretary in the Department of Energy and CEO of Enduring Hydro, a company that develops hydropower projects. "Given that, it's not surprising decades go by and things don't get built."

Her company is building a 6-megawatt plant at a dam on Mahoning Creek in western Pennsylvania after buying the permit from another company in August. It will supply enough power for 1,800 homes.

An environmental group that has sought since 1973 to minimize harm from hydropower dams largely supports the idea of adding generators to existing dams.

"Some dams need to be removed, but there are also many working dams out there that are still serving a useful purpose for society," said John Seebach, who leads the effort for Washington-based American Rivers.

In general, he said, rivers would be better off without dams. But since they aren't going away, "powering those existing dams is in our view the best way to get new hydropower capacity. It's cheaper than building new dams, and it's much less likely to cause additional harm to a river."

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