

Interest revives in hydropower on a small scale, sparked by the new energy bill and high fuel costs.

Pretty general speculation – but every little helps.

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When the surging Grasse River breached the old concrete-and-wood dam in Massena, N.Y., the dam, only a few feet high, collapsed slowly. Its failure injured nobody – and did the environment a big favor.

Today, eight years later, the unplugged Grasse flows freely from Massena to the St. Lawrence River, and eel and sturgeon are returning. Canoeists and anglers have, too. That idyllic scene may be shifting, though, worrying some.

Massena officials are planning a new dam, whose spinning hydropower turbine will generate about 2.5 megawatts and \$1 million worth of electricity a year for the city-run utility.

Hoover Dam it is not. It would generate enough juice for only about 2,500 homes. Still, Massena's tiny project is part of a big new wave of "small hydro" power projects emerging nationwide.

Propelled by high energy costs, federal incentives, and an eased licensing process, at least 104 projects in 29 states – with 2,400 megawatts of new capacity – have been granted "preliminary permits" by the Federal Energy Regulatory Commission (FERC), which regulates hydropower development. Many other projects in the works have not yet been officially reported by FERC, observers say.

The jolt in interest is lifting the long-languishing hopes of hydropower's true believers. "There seems to be a trend, hopefully, of getting more hydropower on-line," says Linda Church Ciocci of the National Hydropower Association in Washington, which represents investor-owned utilities.

Until recently, most energy analysts felt hydro's best days were behind it, because the rivers with the best potential for large-scale water power were dammed long ago. Since the 1980s, hydropower has been eclipsed by other, faster-growing types of "clean" electric power.

Natural-gas-fired generation, for instance, grew nearly 240 percent in the decade ending in 2003. Hydro grew just 4 percent – its share of the nation's power generation sagging to 9 percent from 11 percent a decade earlier.

Some trace the surge in hydropower interest to little-noticed provisions in the 2005 energy bill that provided tax credits and incentive payments to boost the industry. It also included measures to soften the clout of environmentalists, native Americans, fishing enthusiasts, and federal agencies that might oppose or wish to modify such projects.

Most projects are still on the drawing boards, and the majority will probably never be built. Many projects call for retrofitting existing dams with generators. Only a few involve new dams.

Indeed, the story of hydropower in recent years has been one of dam demolition, not construction. Nearly 200 dams have been demolished since 1999. Concern over declining salmon stocks and other migratory fish, and the rise of cheaper energy alternatives, have taken the shine off hydro. Last month, for instance, FERC approved removal of the Powerdale Dam on the Hood River in Oregon.

A few new dam projects are buried among the preliminary permits FERC has granted, but officials say new dams, which often generate opposition, won't be what saves the industry.

"We're not advocating building new dams," says Ms. Ciocci. "We want to see existing hydropower dams get upgrades and a lot of existing dams that don't have generators have them installed."

About 4 in 5 projects on the books are tiny – producing less than 20 megawatts of power. But if all 104 projects now in the planning stages are built, they would contribute 2.4 gigawatts to generating capacity nationwide.

The potential exists for much more, say federal researchers. Of 80,000 existing dams, only about 2,500 generate electricity. Upgrading those hydropower dams could boost power by 4,300 megawatts. Retrofitting the most promising of the remaining 77,000 dams could generate as much as 17,000 megawatts, according to a recent US Department of Energy Report.

Such a boost might reduce the need for future fossil-fuel or nuclear projects. Still, environmentalists are wary.

"We've heard through the grapevine that there is movement," says Robbin Marks, director of the hydropower reform campaign at American Rivers, an environmental group in Washington. "We don't want to see new hydro dams."

At a recent town hall meeting in Massena, environmentalists, the US Fish and Wildlife Service, state environment officials, Indian tribes, and sportsmen's groups came to ask questions.

The new dam is needed to defray rising power costs, Massena officials say. The timing seems right, they add, because the new federal energy law may provide economic incentives that make it a good deal. "Frankly, the public response has been overwhelmingly positive," says Andrew McMahon, superintendent of Massena Electric, the city utility. "We're going to do our best to work with everyone and deal with concerns."

Across the nation, many existing dams are slated for relicensing hearings, where interest groups are expected to challenge their value to the public – in some cases leading to dam demolition. In other cases, relicensing will help the environment because it leads to upgrades that meet today's standards, environmentalists say.