



Everything New Orleans

HydroGreen Energy, which plans to generate power through underwater turbines, clears first environmental test

By Rebecca Mowbray, The Times-Picayune

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It's official: fish and at least some underwater electricity-generating turbines can coexist.

HydroGreen Energy LLC, a Houston company that is one of at least four outfits that aspire to sink jet engine-like turbines into Louisiana waterways to generate electricity, tested the environmental impact of its technology and found that 97 percent of the fish survived.

As the Federal Energy Regulatory Commission's pilot project unfolds to assess the potential for generating a consistent flow of clean energy in the nation's rivers, lakes and tidal pools, some of the key questions have been whether the turbines can withstand getting banged by debris floating down rivers, what they do to boat traffic, and how they affect local fish populations.

HydroGreen sought to answer the fish question at a test site at an Army Corps of Engineers lock and dam in Hastings, Minn. The company released 502 balloon and radio tagged fish of a variety of types and sizes into the waterway, and made 402 of them swim through the turbine, which spins at 21 revolutions per minute. It followed the fish that swam through the rotors for 48 hours, and only one "showed evidence of direct physical harm."

HydroGreen says the fish's problems were "almost certainly" caused by the balloon tag it was carrying, which made the fish float to the surface of the water, causing it to "interact with the hydrokinetic device in a manner that otherwise never occur." In other words, the fish normally wouldn't be swimming there.

Wayne Krouse, a Tulane engineering graduate who is the chairman, chief executive and founder of HydroGreen, said that the fish survival rate validates his company's computer modeling predictions and validates its technology.

"The comprehensive study performed on our hydrokinetic turbine wholly confirms what we had modeled with a computer before the turbine was installed, as well as what we knew in our minds: our hydrokinetic turbine is an extremely environmentally friendly technology," Krouse said in a release.

The findings are not just good news for the fish: HydroGreen hopes to use the findings to distinguish itself among other aspiring turbine manufacturers.

While its main rival, Free Flow Power Corp., sought to lock up coveted test sites along the Mississippi River and then start deploying the turbines, HydroGreen took the opposite tack. It deployed a test turbine in the water in Minnesota so it could start answering questions with confidence about how it would perform, and then will move to a smaller number of test sites in Vidalia and in Vicksburg, Miss.

HydroGreen claims to have the slowest-spinning turbine in the industry, and hopes its patented technology, and test results, will become its advantage. When it comes time to get permission for permanent sites, the company hopes its fish test data will help allay resident concerns and will help it ramp up without glitches.

"You don't go from the lab to thousands of megawatts overnight," Mark Stover, the company's vice president for corporate affairs, said in an interview last spring. "People need to get comfortable with the technology, with the developer and with the approach."

Meanwhile, Massachusetts-based Free Flow won a grant from the Department of Energy to help pay for testing a few of its turbines in real, outdoor environments, but it is still negotiating the details of the test project, how much it will cost and where the test sites will be. Free Flow hopes to get some test turbines spinning in 2010. "We're still designing the project," said Jon Guidroz,

who works in Free Flow's New Orleans office as director of project development.

The companies' efforts could be a big deal for Louisiana. The Public Service Commission is debating a "renewable portfolio standard," or rules that would require utilities to purchase a certain percentage of power from clean energy sources, but at this point, the state has few renewable options. The commission is expected to vote on the issue this spring.

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