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# Environmental Law in a Climate Change Age

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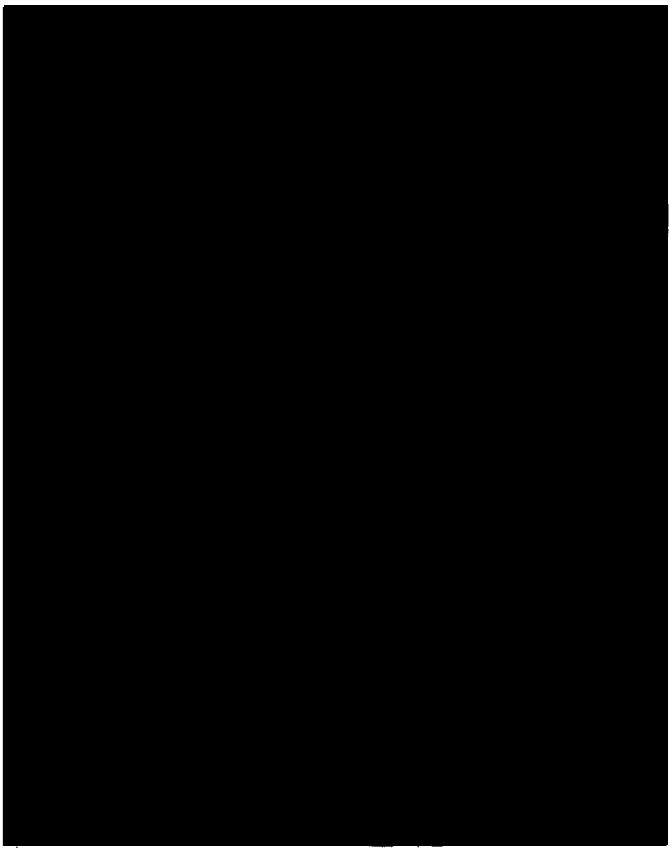

# INSIGHTS

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## Environmental Law in a Climate Change Age

*David R. Hodas*

Assume for the moment that global warming is an urgent problem. Assume also that there is deep and broad public support in the United States in favor of reducing greenhouse gas (GHG) emissions. Assume also that in the United States electricity sector, which is a major emitter of GHGs, a combination of energy-efficiency measures and renewable energy investments are the fastest and least expensive means to make serious reductions in GHG emissions. In such a world, will our existing environmental laws help or obstruct efforts to construct the new renewable energy facilities needed to address the urgent climate change problem? Will our environmental laws promote or squelch renewable energy and energy-efficiency technological innovation? There is a danger that the values embedded in our environmental laws—protection of human health and the environment—will impair our efforts to respond to the world's greatest environmental challenge, thereby firmly entrenching current coal-fired electricity generators (the most carbon-intense source of electricity) as the business-as-usual of tomorrow. We must rethink our environmental laws so that we avoid the tragic irony of environmental laws trapping us in an oven.

A current effort to promote the use of tidal flows to generate electricity illustrates the tensions between existing environmental laws and the imperative of reducing GHG emissions. Because water is about 800 times denser than air, moving water, even slowly moving water, contains enormous force with which to turn an electric turbine. To capture this kinetic power, small turbines with propellers have been developed that can be placed underwater to capture the energy in tidal or steadily flowing water. The 21 kilowatt turbine generators, which would be firmly attached to the water's bed, have 16-foot blades that turn slowly (about 35 revolutions per minute) to generate electricity. In a free-flowing river or stream, the blades would spin 100 percent of the time. By contrast, in a tidal setting, the turbine will only run about 30 percent of the time—when the tide is coming in or leaving, but not when the tide is slack. In either case, the turbines will generate reliable, predictable, pollution-free electricity. The turbines would be entirely underwater and invisible from the surface, would be quiet, and would not require any dams or water impoundments. A pilot project is underway in the East River of New York to determine the turbines' efficacy to generate electricity and effect on the river's aquatic life, particularly fish.

Under the Federal Power Act (FPA), the Federal Energy Regulatory Commission (FERC) has exclusive jurisdiction to license hydroelectric projects, and any activity "for the purpose of developing electric power" is unlawful without a license from FERC. 16 U.S.C. § 817(b). Thus, FERC is the lead decision-making agency for the turbine project. However, the Clean Water Act, Endangered Species Act,

Rivers and Harbors Act, Coastal Zone Management Act, National Historic Preservation Act, Marine Mammal Protection Act, Migratory Bird Protection Act, the Magnuson-Stevenson Fisheries Act, the National Environmental Policy Act, and applicable state water-quality and related laws and regulations also apply.

As a result, many agencies besides FERC were involved in the East River pilot project in one form or another, including the U.S. Army Corps of Engineers, U.S. Coast Guard, National Marine Fisheries Service, the U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, New York State Department of Environmental Conservation, New York State Department of State, and the New York City Planning Commission. Proceedings before FERC began in 2002 to obtain approval for a proposed kinetic hydroelectric facility consisting of 494 turbine generators to be installed below the river's surface in thirty rows of about seventeen units with the goal of generating 32.8 gigawatts hours of electricity. In 2002, FERC granted Verdant Power a preliminary permit to evaluate the proposed project. Verdant Power, LLC, 100 FERC ¶ 62,162 (2002). The preliminary permit was for the sole purpose of preserving Verdant Power's priority for a future license application while Verdant Power investigated the feasibility of the proposed project and prepared an acceptable application to FERC; the permit prohibited any construction in or occupation or use of the river.

Once it determined the project was feasible, Verdant Power wanted to install six units into the river to evaluate over an eighteen-month testing period the potential impacts of the technology on fish, navigation, and other resources and to obtain operational-performance data on the experimental kinetic hydroelectric technology. If the turbines proved to be effective electric generators and environmentally benign, a permanent operating license would be sought for the project. Unfortunately Verdant Power faced a potential "Catch 22": the FPA prohibits all hydroelectric generation unless FERC grants a license, 16 U.S.C. § 817(b); but without the operational data and experience from installing and operating the kinetic hydroelectric technology, Verdant Power would not have the information necessary to successfully prosecute a FERC license application. Verdant Power thus petitioned FERC for "licensing relief" in the form of a rule that a license would not be necessary under the FPA for feasibility testing. In response, FERC granted the licensing relief on the condition that "(1) the technology in question is experimental, (2) the proposed facilities are to be utilized for a short period for the purpose of conducting studies necessary to prepare a license permit, and (3) power generated from the test project will not be transmitted into, or displace power from, the national electric grid." Verdant Power, 111 FERC ¶ 61,024 (2005).

In Verdant Power's case, the first two factors of this test were easily met, but the third factor was problematic. To see whether the technology would work, Verdant Power needed to operate its turbines to generate electricity that it sent into the grid. Even though Verdant Power was going to give the electricity away for free to two users along the river and compensate the current providers for the lost sales, it still would be transmitting that new power into the grid. However, FERC was satisfied that the demonstration project would have no net economic impact on the electricity grid because the power was to be given away for free and Verdant Power would reimburse current providers for any losses. Verdant Power, 112 FERC ¶ 61,143 (2005).

With the third factor now in place, FERC ruled that a license was not needed to proceed. FERC Commissioner Suedeen G. Kelly concurred in the result. She observed that even if there were no net economic loss, the experimental operation would have a physical impact on the grid. She would nevertheless grant the licensing relief for the studies because Verdant Power needed a "jump start" into the grid for its testing. The demonstration by its very nature requires that Verdant generate electricity to observe the impacts of the turbines on the environment, and therefore some power must be displaced from the grid. She declined to "shoe-horn" the demonstration project into a formula that did not fully meet the facts: according to Commissioner Kelly, the demonstration, as proposed, would not be "development of electric power" under the FPA because, as she believes, FERC is well within its regulatory discretion to interpret the FPA to exclude this demonstration from the requirements of the Act because FPA only applied to projects "for the purpose of developing electric power." *Id.*

FERC's ruling was narrowly limited to the facts of this specific project. FERC declined Verdant Power's invitation to create a three-to five-year study license for new technology. Although FERC agreed, "it is important to encourage innovative energy technology," it refused to create any blanket exception or special license. It will, instead, evaluate each project on its particular facts to determine if a license is required for demonstration activities. In granting license relief, FERC also was explicit that Verdant Power was not exempted from any applicable state or federal law, and its ruling "does not in any way undercut the jurisdiction of other agencies under applicable law, nor their ability to impose informational or procedural requirements on Verdant Power." Further, because FERC determined that a license was not needed under the FPA for these experimental activities, FERC made no findings as to any environmental impacts. When Verdant Power applies to license the full project, it must meet all FERC licensing requirements. 111 FERC ¶ 61,024.

The environmental-data-gathering requirements before any turbines could be permanently installed in the river were extensive, and the project must gather data for another eighteen months after the six turbines are installed under the terms of the test license from FERC. Data were first gathered from a barge-mounted turbine beginning in January 2003, but all six turbines in the river bed were not installed until April 2007 after Verdant Power was granted the licensing relief by FERC.

A further condition of the demonstration permit was that studies be made examining the ecological, navigational, recreational, hydrodynamic, and historic preservation impacts of the project. To do this, the applicant must conduct many studies, including benthic habitat characterization; a water-

quality assessment; an East River hydrodynamic survey; a mobile hydroacoustic survey; a fixed hydroacoustic survey; an assessment of impacts on any rare, threatened, or endangered species; a biological survey of the East River; a recreational resources assessment; a navigational and security assessment; and an historical resources assessment. In about two years after the studies are completed (2009), Verdant Power can return to FERC with an application for a license to build and operate a commercial-scale project in the East River, which will proceed according to FERC regulations.

From an environmental perspective, these studies are important and prudent requirements, particularly since a new technology is involved. As a society, we need this information so we do not plunge into the deep water of committing to a new technology without understanding its potential impacts. However, if this same decade-long process were to apply to a second project, kinetic water turbine technology will be drowned. Quite simply, Verdant, which is willing to do all of these studies for the East River project, at great cost, will abandon the field if it must repeat the process every time. Remarks of Gilbert P. Sperling, General Counsel, Verdant Power at the Symposium: "Combating Climate Change: The Legal Issues of Alternative Energies," Albany Law School, Apr. 18, 2007.

Instead of deploying a valuable, new renewable-energy technology, we will be left with existing sources of electricity—particularly coal-fired power plants, many of which still claim the Clean Air Act grandfather exemption for major sources in existence prior to 1970. Clearly, we cannot approve permits blindly and must evaluate the environmental and human impacts of new projects before they are installed; however, we must be able to balance the need for new renewable-energy technology against the laudable policies and values embedded in our environmental laws. To meaningfully address GHG emissions, we must balance the prudence our environmental laws urge with the imperative to mitigate global warming. We must rethink all of our environmental laws from a global-warming perspective so that environmental law does not stifle our response to a larger environmental problem. There is no challenge that more urgently faces us as environmental, energy, and resource lawyers.

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