



UNITED STATES DEPARTMENT OF COMMERCE  
 National Oceanic and Atmospheric Administration  
 NATIONAL MARINE FISHERIES SERVICE  
 NORTHEAST REGION  
 55 Great Republic Drive  
 Gloucester, MA 01930-2276

JAN - 9 2009

Ms. Kimberly Bose, Secretary  
 Federal Energy Regulatory Commission  
 888 First Street, NE  
 Washington, D.C. 20426

Re: Comments on a Draft Kinetic Hydropower Pilot License Application for the  
 Roosevelt Island Tidal Energy (RITE East Channel Pilot) Project  
 (P-12611-003) by Verdant Power, LLC

Dear Secretary Bose:

This letter is in response to the Federal Energy Regulatory Commission's (FERC) notice of intent to file the subject pilot license application. The draft materials provided for our review describe a proposal by Verdant Power, LLC (Verdant) to file an application for an original pilot license for the Roosevelt Island Tidal Energy Project (RITE East Channel Pilot). As described in the draft application materials, this pilot project entails installation of thirty axial flow Kinetic Hydropower System (KHPS) turbine generator units adjacent to the northeast corner of Roosevelt Island, New York. The turbines, rated 35 KW apiece, would be installed in an array of ten groups of three for a total generation capacity of 1.05 MW.

In addition to introducing the RITE East Channel Pilot, the draft application materials disclose Verdant's further desire to seek a second pilot license for a 2-4 MW capacity pilot array they would install in the west branch of the East River. This second pilot project would lie adjacent to the Manhattan shoreline within the United Nations security zone, north to the 59<sup>th</sup> Street Bridge. The project proponents ultimately plan to bring both pilot projects to full capacity under a single FERC license. Through proposing this new approach, Verdant calls for the suspension of licensing efforts under the previous licensing activities, and explicitly requests in its Notice of Intent that treatment of their future application is undertaken under the provisions of FERC's ILP.

The following comments on the draft application are offered by the National Marine Fisheries Service (NMFS). NMFS is looking forward to continuing our coordination with FERC and Verdant for the RITE project, and to identify and address issues regarding your licensing decision.

#### **Verdant Power LLC's Draft Application**

On November 25, 2008, Verdant filed 1) a notice of intent, 2) a draft hydropower pilot license application, 3) a request for waivers to expedite processing of their pilot hydrokinetic pilot project license application, and 4) a request to be designated FERC's non-federal representative in Endangered Species Act and National Historic Preservation Act coordination. These documents convey Verdant's proposed strategy for seeking a FERC



license for the RITE project. In order to expedite licensing for the RITE East Channel Pilot and subsequent phases, Verdant is requesting certain waivers for timelines and respective responsibilities related to several pre-filing components of the process, in accordance with FERC's regulations under 18 CFR § 5.29 (f)(2).

As described above, the RITE East Channel Pilot proposal entails installation of thirty turbine generator units. Each turbine would be fitted with 5-m diameter blades that spin and yaw in response to water flow. Unlike the installation of turbine generators undertaken under the previous licensing effort, the generating units will not be installed on individual monopiles, but on ten three-unit frames. Subaqueous cables would connect each turbine to five shoreline switchgear vaults which themselves connect to a Control Room and interconnection points. The new pilot field also would be protected by navigation safety and related appurtenances. It is our understanding that installation of any in-water structures will require separate state and federal permit actions beyond acquisition of a FERC pilot license. Regarding the above filing by Verdant that is before us, we have some general concerns discussed below.

Verdant relies on certain documents and scoping efforts that had been conducted previously under their 2003 application. This information includes results of studies undertaken during three short/preliminary deployments during which various turbine rotors were tested and evaluated at the RITE East Channel site. That information will be useful, however, we are certain that supplemental information will be necessary for NMFS to properly consult on this important project. The pilot license process was designed to enable applicants to collect site specific resource data. NMFS looks forward to coordination ahead and will elaborate on information needs in this filing and meetings that will follow.

#### **National Marine Fisheries Service's Trust Resources**

NMFS has federal statutory responsibility for protection, mitigation, and enhancement of marine, anadromous and catadromous fish resources, marine mammals, and sea turtles. All of these living aquatic resources may be affected directly, indirectly, or cumulatively by the installation and operation of the proposed pilot project. Our authorities stem from several important environmental statutes and include protection of: fish and their habitat under the Magnuson-Stevens Fishery Conservation and Management Act (MSA)(16 USC 1801, et seq.); species under the Fish and Wildlife Coordination Act (16 USC 661, et seq.); marine mammals pursuant to the Marine Mammal Protection Act (16 USC 1361, et seq.); and threatened and endangered species under the Endangered Species Act (16 USC 460, et seq.). Further, NMFS, through the Department of Commerce, has mandatory conditions authority under the Federal Power Act (16 USC 792, et seq.) to ensure safe, timely, and effective passage of migratory species to spawning, rearing, and nursery habitat. Many of these same statutes also obligate any federal agency, including FERC, to consult with NMFS before taking any action that might adversely affect NMFS trust resources. Through consultation with FERC under these mandates, NMFS will provide conservation recommendations for the protection of the living marine resources and their habitat. NMFS looks forward to working with FERC and the other federal agencies such

as the US Army Corps of Engineers (ACOE) to complete these consultations as appropriate.

#### **Essential Fish Habitat and Fish and Wildlife Coordination Act**

The East River and its surrounding waters have been designated as essential fish habitat (EFH) under the MSA for a variety of federally managed fishery resources including winter flounder (*Pseudopleuronectes americanus*), windowpane flounder (*Scophthalmus aquosus*), bluefish (*Pomatomus saltatrix*), Atlantic butterfish (*Peprilus triacanthus*), summer flounder (*Paralichthys dentatus*), scup (*Stenotomus chrysops*), Atlantic sea herring (*Clupea harengus*), and black sea bass (*Centropristis striata*). This tidal strait is the sole direct connection between Upper New York Bay and western Long Island Sound. As such, the East River provides a critical migratory pathway and other important ecological functions for diadromous fishes such as river herrings (*Alosa spp.*), striped bass (*Morone saxatilis*), and American eel (*Anguilla rostrata*). It also supports a wide variety of other resources of concern to NMFS including baitfish, weakfish (*Cynoscion regalis*), invertebrate prey items, and crabs. All of these living marine resources and their supporting habitats are trust resources of NMFS which may be affected in some degree by the proposed action.

All of the species are under fishery management in either federal or state programs. In addition, some species noted above have at one time or another been placed under heightened protection based on population declines. Alosid populations, for example, experienced declines throughout much of their range since the 1960s such that alewife and blueback herring were designated species of concern in NMFS' Federal Register Notice dated October 17, 2006 (71 FRN 61022). "Species of concern" are those species about which NMFS has some concerns regarding status and threats, but for which insufficient information is available to indicate a need to list the species under the Endangered Species Act. Another species is striped bass which, under the Atlantic Striped Bass Conservation Act, has recovered from highly significant declines. Striped bass is known to migrate through and feed in the East River, and is one of the most important game species that supports vibrant recreational and party boat fisheries. Juvenile striped bass also may over-winter in portions of the East River as they do elsewhere in New York City coastal areas, but the specific over-wintering areas and extent to which striped bass juveniles utilize the Roosevelt Island reach of the East River remains to be characterized more completely.

As the pilot licensing process unfolds, NMFS must consider the needs of the above fishery resources and their habitats as we: 1) review Verdant's applications, 2) make recommendations to FERC and other authorizing agencies regarding project design, operation, studies, and potential modifications, and potentially 3) formulate prescriptions that we may deem necessary in light of the available information. We have reviewed the draft pilot project application for the RITE East Branch project (RITE EAST) and have identified a number of critical, substantive issues that should be resolved before the pilot license application is filed.

### **General Comments**

In consideration of the record under Verdant's 2003 application and the new project before us, we have examined the draft application materials for a pilot deployment at RITE East Channel. We have identified several issues of concern that we would like to share at this time.

### Justification Statement

- The scale and scope of the proposed project (e.g., footprint) can have great significance to impacts on resources. In this situation, the number of turbines and footprint of deployment are probably more important than generation capacity in terms of potential impacts on our resources of concern. Unfortunately, Verdant relies solely on the cumulative 1.05 MW generating capacity of turbines that would be deployed at RITE East Channel as its basis for suggesting this proposal meets FERC's size criteria for a pilot project. NMFS requests that FERC require Verdant to expand its analysis to demonstrate why their project also meets the criteria for consideration as a "small" project in light of the number of units and project footprint proposed for the present project.
- We are concerned that the individual and cumulative effects of this proposal may exceed the thresholds associated with what was intended for a pilot hydrokinetic project and how this equates to habitat and living resource impacts. We note that the draft plot application depicts the RITE East Channel project as occupying a field that encompasses approximately 1/6 of the east branch footprint. The draft application discloses that a second pilot, RITE West Channel, is a 2-4 MW pilot being contemplated in the near future. Together, these projects would be at or near the maximum allowable generation limit in FERC's size criteria, given Verdant's determination to go forward with both of these projects. Our concerns for trust resources are the ability to identify and manage impacts on a cumulative as well as project specific sense into the project analysis. We recommend that FERC requires Verdant to consider the impacts of both pilot projects in its overall justification statement, and to explain their proposed approach in relation to piecemealing the project as would be prohibited under the National Environmental Policy Act.
- NMFS has significant concern about a pilot license extension to 10 years and ponders how this qualifies as "short term" under pilot project criteria. Ten years is a significant period of time that can extend over many generations of living marine resources, especially if severe impacts develop. It might be appropriate for FERC to consider more modest time options that may afford some level of flexibility regarding the five year maximum duration to qualify a project as "short term" under its pilot requirements.
- We are glad to see the topic of "sensitive areas" in FERC's licensing considerations. The East River provides an important hydrologic connection between New York Bay and western Long Island Sound. Considering that many trust resources

use this area as a migration corridor, for resident habitat and for other important ecological functions, the East River will include sensitive areas. We encourage FERC to take these critical uses into serious consideration in its deliberative process, and ensure that all sensitive areas are given adequate analysis for identification and protection in their licensing decision. We look forward to our coordination in this area.

### **Draft Application**

The application for pilot license to be filed must be adequate to permit proper environmental analysis of the proposed project.

- NMFS has significant concerns that past performance of equipment in the previous deployments diminishes the value of some of the past monitoring. For a pilot license to go forward, additional data and studies regarding fishery resources will be necessary. We strongly recommend that these study plans are developed prior to any turbine deployments, and that the final plan is acceptable to meet the needs of all involved state and federal agencies. We believe that these studies must continue to focus on characterizing fish occurrence and habitat uses in the project region; that any such studies must be ground-truthed to establish the species and life stages present and potential adverse impacts on individuals and their access to/use of habitats are identified and analyzed. More studies are necessary in both the east and west branch of the East River. Given the past sampling difficulties, it will be important that improved sampling strategies are developed in advance of a future deployment. In particular, we note the limited amount of data available for fish movements and behaviors when multiple turbines were functioning properly and also the need to ensure such data are collected, particularly during periods of time when large number of fish are present in the river.
- NMFS requests that the pilot license application include the results of all previous monitoring and studies, and that the results of those efforts are reported clearly and concisely for the record.
- NMFS will need additional information regarding the triframe mounting system in order to assess its differential impact on trust resources as compared with the original monopole design. NMFS also has questions about installation impacts, information on the triframe operation in a dynamic hydrologic environment, and similar details. We recommend that data collection include relevant impacts analysis related to this new design feature (e.g., disturbance to benthic substrate, fish behaviors and habitat uses, etc.).

### **Conclusion**

NMFS understands that the materials provided in the November 25, 2008 filing are preliminary in that the submittal is a draft license application. We anticipate that they will be amended in response to comments by this agency and other stakeholders. In the interim until the pilot license application is tendered, we strongly suggest that the project propo-

nents work together with the various resource and regulatory personnel to refine the final study and monitoring plans that will be undertaken while the pilot facilities are deployed to ensure that the regulatory and information needs of these organizations are met. We also note to the project proponents that before structures are installed, it is necessary that they obtain federal, state, and perhaps local authorizations for disturbing soils, erecting structures in waters of the United States, etc. Once any such in-water facilities are proposed, the lead federal agency will be responsible for any necessary consultations with NMFS under the authorities indicated in the foregoing pages, including the MSA and the ESA.

If you have any questions concerning this filing, please contact Diane Rusanowsky of my staff at 203-882-6504.

Sincerely,

A handwritten signature in blue ink that reads "Peter Colosi, Jr." with a stylized flourish at the end.

Peter D. Colosi, Jr.  
Assistant Regional Administrator  
for Habitat Conservation

Document Content(s)

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Ms. Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, D.C. 20426

Re: Comments on Notice of Intent File a License Application, Filing of Draft Application, Request for Waivers, Extending the Comment Period and Soliciting Comments for Project No. 12611-003 (Verdant's Roosevelt Tidal Energy Project)

Dear Secretary Bose,

NOAA's National Marine Fisheries Service (NMFS) has reviewed the Notice of Intent to File a License Application for an Original License for a Hydrokinetic Pilot Project by Verdant Power, LLC for the Roosevelt Island Tidal Energy Project to be located in the east channel of the East River, in New York City, New York. The proposed Roosevelt Island Tidal Energy Project would consist of: (1) a field array of thirty 35-kilowatt, 5-meter-diameter axial flow Kinetic Hydropower System (KHPS) turbine-generator units mounted on ten triframe mounts, with a total capacity of about 1 megawatt; (2) underwater cables from each turbine to five shoreline switchgear vaults, that would interconnect to a control room and interconnection points; and (3) appurtenant facilities for navigation safety and operation. The estimated annual generation of the proposed project would be between 1,680 and 2,400 megawatt-hours.

### **Endangered Species Act**

As noted in previous correspondence with your office, several species listed by NMFS under the Endangered Species Act (ESA) of 1973, as amended, occur in New York waters. A population of the federally endangered shortnose sturgeon (*Acipenser brevirostrum*) occurs in the Hudson River and has been documented from the Troy Dam to the waters near Staten Island in New York Harbor. NMFS has recently convened a status review team to conduct a five year status review for shortnose sturgeon. A status review report is expected in 2009.



Shortnose sturgeon have been captured near the confluence of the East River and New York Harbor and at least two shortnose sturgeon tagged in the Hudson River have been recaptured in the Connecticut River. It is unknown whether these fish traveled through the East River and through Long Island Sound (the most direct route) or exited New York Harbor into the Atlantic Ocean and swam around southern Long Island and back into Long Island Sound. As noted in your letter, the East River is not likely to be a high use area for sturgeon and there have been no documented captures of shortnose sturgeon in this waterbody. However, the best available information indicates that at least occasional transient shortnose sturgeon may be present in the East River.

Listed sea turtles also occur seasonally in New York waters and are known to be present in western Long Island Sound and in the New York Harbor complex. The sea turtles in these waters are typically small juveniles with the most abundant being the federally threatened loggerhead (*Caretta caretta*) followed by the federally endangered Kemp's ridley (*Lepidochelys kempi*). New York waters have also been found to be warm enough to support federally endangered green sea turtles (*Chelonia mydas*) from June through October. While federally endangered leatherback sea turtles (*Dermochelys coriacea*) may be found in the waters off Long Island during the warmer months as well, this species is less likely to occur in the action area for this project as it is typically found in more offshore waters. Like shortnose sturgeon, there have been no documented captures of sea turtles in the East River and it is not likely to be a high use area for these species. However, as sea turtles are known to occur in the waterbodies surrounding the East River, it is likely that occasional transient sea turtles occur in the East River.

The best available information indicates that listed species may at least occasionally occur in the project area. As noted in previous correspondence, NMFS recommends that consultation pursuant to Section 7 of the ESA be initiated. FERC, and/or their designated non-Federal representative (i.e., Verdant Power), should submit a determination of effects along with justification for the determination and a request for concurrence to NMFS. If FERC determines that the project is "not likely to adversely affect" any listed species (i.e., when direct or indirect effects of the proposed project or its interdependent and/or interrelated actions on listed species are expected to be discountable, insignificant or completely beneficial) and NMFS concurs with this determination, NMFS will reply to FERC in a letter that will convey the concurrence, thus completing Section 7 consultation. If FERC determines that the project is "likely to adversely affect" any listed species (i.e., if any adverse effect to listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effects are not: discountable, insignificant, or beneficial) or NMFS does not concur with FERC's "not likely to adversely affect" determination, formal Section 7 consultation, resulting in the issuance of a Biological Opinion with an appropriate Incidental Take Statement, may be required. Any effects that amount to the take of a listed species (defined by the ESA as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct") are not discountable, insignificant or entirely beneficial. Therefore, if any take is anticipated, formal consultation is required.

Please note that if a formal section 7 consultation is necessary, NMFS has 135 days from the date of initiation of consultation (i.e., the date that NMFS has all information necessary to conduct consultation) to deliver a Biological Opinion and Incidental Take Statement to FERC. Any take of a listed species that occurs without special exemption (e.g., an Incidental Take Statement) is illegal pursuant to the prohibitions on take contained in Section 9 of the ESA. My staff looks forward to working with Verdant and FERC throughout the licensing process. It is NMFS understanding that FERC intends to designate Verdant as a non-Federal representative for the purposes of informal Section 7 consultation, if a decision is made to do this, FERC should confirm their designation in writing to NMFS. Additionally, FERC should note that designation of a non-Federal representative is only appropriate if no formal consultation is necessary (see 50 CFR 402.08).

### **Technical Assistance for Candidate Species**

Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) are also present in the Hudson River and surrounding coastal waters, including Long Island Sound. Atlantic sturgeon are considered a Candidate Species as NMFS has initiated a status review for this species to determine if listing as threatened or endangered under the ESA is warranted. A status review report was completed by the status review team in February 2007. NMFS is currently reviewing the report and other available information to determine if listing under the ESA is warranted. A listing determination, and, if listing is warranted, any accompanying proposed rule(s), is expected to be published by NMFS in 2009. If it is determined that listing is warranted, a listing determination and final rule listing the species could be published within a year from the date of publication of the listing determination or proposed rule. Atlantic sturgeon are known to occur in the Hudson River and Long Island Sound and also are likely to occur in the East River, although not likely in high numbers. Research conducted by Savoy and Pacileo (2003)<sup>1</sup> suggests that the East River is used by juvenile Atlantic sturgeon to migrate from the Hudson River to western Long Island Sound. Please note that if Atlantic sturgeon are proposed for listing, the conference provisions outlined in 50 CFR 402.10 would become applicable.

### **Marine Mammal Protection Act**

As noted in previous correspondence with your office and the US Army Corps of Engineers (ACOE) regarding earlier phases of this project, several species of marine mammals, including gray seals and harbor seals, are known to occur in the East River. While these species are not listed under the ESA, all marine mammals receive protection under the Marine Mammal Protection Act (MMPA) of 1972, as amended. The MMPA prohibits, with certain exceptions, the take of marine mammals in U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the U.S. NMFS may issue permits under MMPA Section 104 (16 U.S.C. 1374) to persons that authorize the taking or importing of specific species of marine mammals. If the proposed project is likely to result in the take of marine mammals Verdant and/or FERC should coordinate with NMFS Office of Protected Resources regarding the potential need for an MMPA Incidental Harassment

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<sup>1</sup> Savoy, T. and D. Pacileo. 2003. Movements and important habitats of subadult Atlantic sturgeon in Connecticut waters. Transactions of the American Fisheries Society. 132: 1-8.

Authorization. For more information regarding the permitting process, please see the permits program website (<http://www.nmfs.noaa.gov/pr/permits/>).

Should you have any questions regarding these comments or the Section 7 process in general, please contact Julie Crocker of my staff at (978)281-9300 x6530 or by e-mail ([Julie.Crocker@noaa.gov](mailto:Julie.Crocker@noaa.gov)).

Sincerely,



Mary A. Colligan  
Assistant Regional Administrator  
for Protected Resources

CC: Rusanowsky, Colosi - F/NER4

File Code: Sec 7 FERC Verdant Roosevelt Island Tidal Project

Document Content(s)

NMFS PRD 12611 comments.PDF.....1-4