RIVERKEEPER®
NY's clean water advocate

August 2, 2010

VIA ELECTRONIC MAIL
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Office of Electricity Delivery and Energy Reliability (OE-20)
U.S. Department of Energy
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Re: Environmental Impact Statement Scoping Comments for Docket No. PP-362

Dear Sir:

I am hereby submitting the attached comments on behalf of Riverkeeper, Inc. in response to the *Notice of Intent to Prepare an Environmental Impact Statement and to Conduct Scoping Process* filed in the Federal Register on June 18, 2010 regarding Champlain Hudson Power Express, Inc.'s application for a Presidential permit to construct, operate, maintain, and connect an electric transmission line across the US-Canada border in northeastern New York State.

Riverkeeper is a member-supported, independent not-for-profit environmental group based in Westchester County, NY. Our mission is to protect and preserve the ecological integrity of the Hudson River and its tributaries as well as safeguard the drinking water supply of New York City. With the help of our diverse membership, which includes an array of constituents from local fisherman and upstate rural families to urbanites and suburbanites, we use a toolbox of litigation, advocacy and public education to pursue our goal of a "fishable, swimmable" Hudson River.

As a steward of the Hudson River, Riverkeeper has a vested interest in assuring that comprehensive studies are performed for the production of the Draft Environmental Impact Statement. Clean energy sources are desirable if they are provided without adversely affecting the ecological integrity of the natural environment. Riverkeeper urges the Department of Energy staff, in collaboration with the U.S. Environmental Protection Agency, the U.S. Army Corps of Engineers, the New York State Department of Environmental Conservation, and the New York Public Service Commission, to fully consider the following comments in its preparation for the draft Environmental Impact Statement.

Riverkeeper looks forward to participating throughout the environmental review process.

Respectfully submitted,

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Riverkeeper, Inc.
August 2, 2010

Riverkeeper, Inc. Scoping Comments for the Champlain Hudson Power Express Transmission Line Project Draft Environmental Impact Statement, Docket No. PP-362

1. **The DOE must include in its Draft Environmental Impact Statement (DEIS) a detailed study of the effects of the transmission line installation on the sediment and contaminants existing in the Hudson River to avoid or minimize adverse impacts on the estuarine and riverine ecosystem and potential impacts to public health.**

    A. The need for comprehensive sediment sampling

The DEIS must include a survey of sediment types at strategic locations along the underwater route. To fully analyze the sediment content for heavy metals and other toxic contaminants, the samples must be taken down to the depth at which trenching will reach. Additionally, each sediment type must be evaluated to understand the rate at which the various contaminants will be reabsorbed. This is an indispensable basis for a thorough evaluation of the safety of this project for the human and natural environments.

Contaminants existing in the sediment of the Hudson River will be resuspended into the water column at varying rates by each of the trenching methods. While contaminants do settle over time, it is vital that the DEIS include a study of the length of time it will take for each type to resettle or be reabsorbed into the sediment. In order for the DOE to make an informed decision about the safety of this project's impacts on the aquatic ecosystem, the DEIS must also study the rates of resettlement and re-absorption for each type of sediment likely to be encountered.

Disturbing contaminants results in an increase in bioavailability as particles are resuspended into the water column. This is particularly dangerous for toxics such as PCBs that are bioaccumulative; in other words, the level of toxicity increases as the contaminant moves up the food chain, culminating with the human diet. Various other human uses also rely on the safety of the water quality in the Hudson River, including recreational activities, fishing and drinking-water intake systems. It is vital that the DEIS comprehensively assesses the effects from installation on these activities in order to move ahead in the permitting process with due caution.

    B. Strategic sampling locations

Specific locations of concern should be directly targeted for gathering sediment samples. These include areas in which heavy concentrations of contaminants are known or even suspected to exist and at which drinking water intake systems operate. Particular attention should be paid to understanding the amount of contaminants that would be resuspended by each type of trenching and the rate at which re-absorption of existing contaminants would occur in these specific locations. This information could then be used to take decisive actions to avoid these areas or implement a water quality warning system if necessary.

        i. Areas of specific concern regarding known sites of heavy metals and other toxic contaminants

Contaminants such as polychlorinated biphenyls (PCBs), mercury, cadmium and strontium 90 are known to exist at toxic levels in the Hudson,[1] and have been proven harmful to both the estuarine ecosystem and the humans who rely on it. PCBs are of particular concern as they are classified by the Environmental Protection Agency (EPA) as "probable carcinogens" and are recognized as having both neurological and developmental effects on humans.[2] In addition to these direct impacts, PCBs bioaccumulate, increasing in quantity and toxicity as they move up the food chain from small/young fish until they reach humans at significantly elevated levels.

In order to minimize the negative impacts of this project, the locations and concentrations of each must be identified. Areas at which concerns have been raised should be specifically targeted for sampling, in addition to regularly spaced intervals. Areas of concern include, but are not limited to, the Hudson River near the former Anaconda Copper and Wire Company site and the Tappan Terminal site in Hastings-on-Hudson, New York, as well as the Hudson River in the vicinity of the Indian Point nuclear power plant in Buchanan, New York. The DEIS should identify and assess all areas on the proposed cable route that are known to contain high levels of contaminated sediment. Contaminants of concern include PCBs, heavy metals (copper, cadmium, etc.), hydrocarbons, petroleum, and radionuclides that attach to sediment, such as strontium-90 and cesium-137.

ii. Areas of specific concern regarding drinking water intake systems.

Assessing the contamination levels as well as the substrate type near water intake systems is vital in order to minimize disturbance of these areas and to keep the public informed of any possible dangers. Areas with drinking water intake systems include Stillwater, Halfmoon, Waterford, Green Island, Rhinebeck, Port Ewen and Poughkeepsie. If toxics are discovered at any of these points, the project should be routed to avoid them.

C. Implement contaminant safety standards and public notification procedures during installation.

If the project is permitted to go forward, a contaminant monitoring system should be relied on during installation in order to minimize resuspension of PCBs and other contaminants into the water column. In considering this option, the DOE should look to the example of the GE PCB Dredging Project, meant to eliminate 100,000 pounds of the approximately 1.3 million pounds of PCBs discharged into the Hudson River by GE between 1947 and 1977. During the first phase of the dredging project, the Federal Safe Drinking Water Act standard was used as a safety warning. When levels of PCBs exceeded the safety standard of 500 parts per trillion (ppt), dredging was halted until the contaminant levels resettled to a less dangerous load.[3] Additionally, Quality of Life Performance Standards were used during the PCB dredging project to reduce the negative effects of the project on "people, businesses, recreation, and community activity."[4] If

[1] Riverkeeper.com, Other Hudson River Pollutants, http://www.riverkeeper.org/water-quality/hudson/other-pollutants (last visited July 27, 2010).
[2] EPA.gov, Hudson River PCBs: Frequently Asked Questions, http://www.epa.gov/hudson/faqs.htm (last visited July 27, 2010).
[3] USEPA, Hudson River PCBs Superfund Site: Phase I Dredging Factsheet, 2 (2009), http://hudsondredgingdata.com
[4] USEPA, Hudson River PCBs: Quality of Life Performance Standards, http://www.epa.gov/hudson/quality_life.htm (last visited July 27, 2010).

the project proposed by CHPEI moves forward, a similar program of safety precautions should be implemented to keep the public informed and to ensure a higher degree of safety to people and the estuarine habitat.

2. The DOE must carefully appraise alternative locations for the facilities and transmission line route to identify the path that minimizes both the localized and cumulative environmental impacts.

A. Facility location alternatives

The locations for the converter station and substation, sited in Yonkers, NY and Queens, NY, respectively, need to be compared to other available alternatives to ensure the selection of sites that would most effectively mitigate the harmful environmental impacts from both the construction and operation of this project. The sites currently proposed by CHPEI require laying approximately 15 miles of Alternating Current (AC) cables under the Hudson, Harlem, and East Rivers to connect the two facilities.

AC cables in operation produce electromagnetic fields (EMFs), which can affect electro sensitive fish and could alter fish migratory patterns. To mitigate these negative impacts to the highest extent possible, the DOE should strongly consider the alternative Queens location for the converter station, which would be adjacent to the preferred location for the substation. This would avoid any effects associated with higher EMFs produced by the AC cables on the aquatic environment. Additionally, this alternative would minimize the unavoidable visual impacts by having essentially a single site for both stations.

B. Underwater route siting - considering impacts during operation

In addition to the effects from installation, the DOE must assess the possible effects of ambient heat during operation of the transmission line on the benthic environment to determine if there is a need to mitigate through further insulation or by rerouting to avoid sensitive habitats. The DEIS must evaluate whether the ambient heat will encourage leaching of contaminants from the sediment, and whether the heat will affect infaunal species, fish in general, and specifically fish that use heat sensory to locate food.

C. Underground route alternative

The DOE must closely consider the possibility of the underground route along railroad right of ways (ROWs) being preferable to the underwater route. CHPEI (hereafter, "the applicant") has stated that one reason for choosing the underwater route is to minimize the environmental impacts of the project; however, the DEIS must conduct an independent analysis into the accuracy of this assertion.

The DEIS should address the following questions:

- Would expanding the ROWs to allow for the installation of the cables affect any ecologically sensitive areas?
- If so, would it have a greater affect on these terrestrial areas than on sensitive aquatic habitats?

- Would the cumulative impacts of an underground route be greater or lesser than the proposed underwater route?

Since railroad ROWs are previously disturbed areas, it seems possible that burying cables along them would not significantly impact those environments. These issues must be carefully studied before concluding that the environmental impacts would be lesser on the aquatic environment than they would be along the railroad ROWs.

3. The DEIS must analyze the effects of each installation method on existing habitats and carefully evaluate CHPEI's selections to ensure the least harmful method is chosen for each habitat.

A. Trenching methods

i. Method-selection process for individual locations

Various trenching methods are proposed to be used, including water jetting, plowing and conventional dredging. The applicant has stated that it will select which method to use based on the sediment type and other obstacles that might prohibit the use of their first-choice method of water jetting. The DEIS must comprehensively assess the impacts of each trenching method on the specific estuarine environment in which it is proposed to be employed, as well as the reasonable alternatives and/or mitigation measures available to avoid or minimize the impacts.

This analysis must also include a study of the impacts from any vessels required for each installation technique. For example, conventional dredging will require the use of stabilizing marine vessels, which may have large "jack-up legs" with between 80 and 300 square foot pads.[5] These are large enough to have a significant impact on the riverbed, fish habitat and Sub-aquatic vegetation ("SAV") where they are placed, and their proposed use in sensitive areas like Haverstraw Bay must be carefully assessed as a part of the DEIS.

Before assessing the applicant's selection process, the DOE must understand the effects of each method on the different habitats and substrate types throughout the Hudson. Specifically, the DEIS must show what the effects of each method are on SAV, endangered or protected species and state and federally designated essential and significant habitats.

ii. Impacts from concrete mattress on benthic community

Of specific concern is the use of concrete mattresses as a protective barrier in areas where the transmission cable will not be able to be buried in the sediment. The applicant states that the environmental effects on these areas will be short lived and that the mattresses will quickly be repopulated as a new reef-like habitat. The DOE must assess the ability of the proposed material to actually be used by aquatic wildlife in this manner. If the proposed material is not porous or otherwise conducive to re-habitation, alternatives must be explored.

iii. Impacts from each on officially designated habitats

[5] CHPEI, Inc., Art. VII Application for Certificate of Environmental Compatibility and Public Need, §4.7.1.2, 4-184 (March 30, 2010).

The effects of each trenching method on protected habitats, especially, must be closely scrutinized and the DOE must ensure that potential impacts to Significant Coastal Fish and Wildlife Habitats and Essential Fish Habitats are fully assessed, as well as alternatives and mitigation measures that could avoid or minimize such impacts.

While there are many protected habitats throughout the Hudson Estuary, the Haverstraw Bay habitat in particular is a distinctively productive area that provides essential habitat for most estuarine-dependent species in the Hudson River. Significantly, this habitat includes species protected under the Endangered Species Act and the Magnuson-Stevens Act. Many of these species join populations throughout the North Atlantic at various stages of their lives. Fish species in Haverstraw Bay include striped bass, American eel, Atlantic tomcod, American shad, blueback herring and the federally listed endangered Shortnose Sturgeon.[6]

The environmental health of habitats like Haverstraw Bay is of national interest, as reflected in its designation as a Significant Coastal Fish and Wildlife Habitat by the New York State Coastal Management Program (CMP), as a Significant Habitat and Habitat Complex of the New York Bight Watershed by the U.S. Fish and Wildlife Service (USFWS), and as an Essential Fish Habitat under the Magnuson-Stevens Act by the National Oceanic Atmospheric Administration's National Marine Fisheries Service (NOAA's Fisheries).

B. Horizontal Directional Drilling

i. Impacts from frack-out materials

Horizontal Directional Drilling (HDD) is a technique proposed by the applicant to allow the transmission line to enter and exit the waterways while only minimally interfering with near shore habitats. The HDD process may sometimes use an additive to assist in the removal of materials from the drilling hole. The applicant indicates that Benseal®, sodium bentonite, is most likely to be used in this situation.

Benseal® is frequently used to seal dams and ponds because of its high expansion ability. While the applicant has stated that "[t]his material is not toxic and will not have a negative environmental impact,"[7] the catalog sheet submitted by the applicant to describe Benseal® states that escaped bentonite particles can "[interfere] with the gill action of fish."[8] The DOE must research the environmental impacts that could occur in the case of a frack-out during the HDD process. Effects on near shore and marine habitats and species, as well as on drinking water and groundwater must be studied to fully evaluate whether this product is indeed environmentally benign.

ii. Impacts from feet of vessel used

[6] The New York Department of State's (DOS) description of the Haverstraw Bay Significant Coastal Fish and Wildlife Habitat can be found on the DOS website, at http://nyswaterfronts.com/downloads/pdfs/sig_hab/hudsonriver/Haverstraw_Bay.pdf , last accessed August 2, 2010.
[7] CHPEI, Response to Interrog. Request RVK-3, 2 (July 22, 2010).
[8] *Id*. at 4.

Part of the HDD process requires the use of marine vessels, which may have large "jack-up legs" to stabilize the work. These legs may have 80 to 300 square foot pads,[9] large enough to have a significant impact on the riverbed, fish habitat and SAV where they are placed. The DOE must pay close attention to where these types of vessels will be used and what the impacts would be in those locations. The DEIS should include a review of the factors that influence the process of selecting vessel types for HDD and weigh them against the impacts of using these large "jack-up legs."

iii. Impacts from the construction and use of cofferdams and excavation pits

The HDD process also includes the creation of a cofferdam, a dry work space created on the riverbed where drilling hole would exit. The cofferdam will also include an excavated area meant to catch any drilling fluid returns and spills in the case of a frack-out. The process of constructing the cofferdam and excavation pit must be studied to determine the level of inevitable impact to the benthic as well as shoreline riparian habitat. Also, the exact placement must be scrutinized to minimize the impacts to the maximum extent possible.

4. It is essential that the DOE conduct a rigorous and independent analysis of the effects of Electromagnetic Fields (EMFs) produced by both Direct Current (DC) and Alternating Current (AC) transmission lines on the marine ecosystem; the DOE should rely on the precautionary principle to frame the DEIS.

A. Impacts from electromagnetic fields on the aquatic environment

Electromagnetic Fields (EMFs) will be produced by electric current running through the transmission lines, and will be made up of both electric fields and induced magnetic fields. While electric fields can be contained in insulation, magnetic fields cannot. These magnetic fields then induce secondary electric fields, thus creating EMFs that exist outside of the transmission line.[10] Additionally, "[b]ecause neither sand nor seawater has magnetic properties, burying a cable will not affect the magnitude of the magnetic (B) field; that is, the B fields at the same distance from the cable are identical, whether in water or sediment."[11] Unlike the Earth's naturally occurring geomagnetic fields and DC fields, which are static, AC cables produce a current that has a cycling polarity.[12] Therefore, as aquatic organisms are likely to react differently to static and cycling EMFs, separate studies need to be done on the effects of both DC and AC cables.

Various aquatic species are known to use and react to electrical and magnetic fields. For example, some elasmobranchs, a subclass of cartilaginous fish, have specialized tissue that detect electrical fields, which the animals use to detect predators, competitors and prey. Other species, including two know species of sturgeon, will respond to changing electrical or geomagnetic

[9] CHPEI, Inc., *supra* note 6.
[10] USDOE, *Report to Congress on the Potential Environmental Effects of Marine and Hydrokinetic Energy Technologies*, Appendix D: Electromagnetic Fields in the Aquatic Environment and their effects on Aquatic Animals D-1 (2009). *Available at* http://www1.eere.energy.gov/windandhydro/marine_hydro_market_acceleration.html (follow hyperlink on right hand side of page to pdf).
[11] *Id*. at D-2.
[12] *Id*.

fields, but don't seem to use the same mechanism as the elasmobranchs.[13] Sturgeon also use electroreceptors to locate prey.[14] Since these abilities directly affect the ability of these, and many other, species to survive, an in-depth study must be performed to properly weigh the risks of altering the naturally occurring electrical and magnetic fields along the substrate.

Altering electrical, magnetic and electromagnetic fields can have adverse affects on the bodies of marine life, their ability to detect predators and prey, and potentially on their migratory abilities. At least one study has shown a decelerated heart rate by American Eels in response to low levels of DC electrical fields (.07 to 0.67 uV/cm) and a 2003 study on an AC cable noted that the electrical field "would likely be detectable by a dogfish...at a radial distance of 20 m.[15]

There is a concern that fish migration may be affected by EMFs due to some migratory species' electro-sensory detection of food sources. Additionally, many species, such as Sturgeon and Eel use magnetosensitivity to Earth's magnetic fields for long-distance migration and Riverkeeper is concerned that these sensory abilities may be affected by the EMFs produced.[16] Because the Sturgeon family includes the shortnose sturgeon, a federally-listed endangered species that travels long-distances to spawn in the Hudson Estuary, they are of specific concern regarding the affects of the EMFs that will be produced by both the DC and AC cables proposed for this project.

B. Use of the precautionary principle

While many adverse effects of EMFs are known, many are yet unproven. This is precisely the type of issue that benefits from reliance on the precautionary principle, which was adopted by the United Nations as part of the Rio Declaration on Environment and Development in 1992. It stated, in part:

> In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.[17]

As the United States is a signatory, and has ratified, the Rio Declaration, it is bound by it. The question is not whether the United States will use the precautionary principle, but rather how and when. While the principle is not explicitly stated, it is consistent with the language of current environmental legislation in the US, including The National Environmental Policy Act of 1969 and The Pollution Prevention Act of 1990.[18]

Though some impacts from EMFs on aquatic wildlife are supported by scientific studies, many remain unproven. Therefore, an action that would result in the production of EMFs throughout

[13] *Id*. at D-4
[14] *Id*. at D-5.
[15] *Id*.
[16] *Id*.
[17] Rio Declaration on Environment and Development, June 14, 1992, 31 ILM 874.
[18] Joel Tickner & Carolyn Raffensperger, *The Precautionary Principle in Action: A Handbook*. 1st Ed. (1998). *Available at* http://www.sehn.org/precaution.html#pub (follow hyperlink "The Precautionary Principle Handbook").

the Hudson River estuary is precisely the type of circumstance that warrants adherence to the precautionary principle. While the burden of proving an activity harmful is usually placed on those opposing an action, use of the precautionary principle here would shift the burden to the Applicant, who would then need to prove either no harm will occur or that no less harmful alternative exists. The DOE should use the precautionary principle as a basis for its approach to assessing these impacts in the DEIS and adhere to it moving forward in the permitting process.

5. **If the Applicant is exploring the use of upstate wind or other US energy sources, the DOE must include environmental impacts from those source in its DEIS as well.**

The Applicant indicates that the energy for this project will come from Canadian sources; however, if the project has the potential to include energy generated in the US, there will undoubtedly be environmental impacts, and those should be assessed in the DEIS.

6. **The DOE must comprehensively assess the cumulative impacts of both the construction and operation of the transmission line on the ecosystem of the Hudson River estuary as a whole.**

In addition to assessing individual elements of the project's installation and operation, the DOE must also consider the cumulative impacts of the installation and operation of the Champlain cable for the projected lifespan of the transmission lines. An assessment of the cumulative impacts of the cable's installation and operation should be based on an accurate assessment of the cable's expected useful lifespan, and what measures will be taken at the end of its useful life to either replace the cable or leave it in place. The environmental impacts of replacing, removing or leaving the cable in place need also are assessed.

The DOE must also include in the DEIS an assessment of any impacts resulting from periodic scheduled or unscheduled maintenance and repair of the cable. In addition, any impacts, short term or long term, resulting from damage to the cable once it's in operation (e.g. from an anchor strike or accidental dredging/construction disturbance) should be assessed.