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Our file *Notre référence*
08-HMAR-MA7-00223

Steve Sanford
Environmental Assessment Branch
Nova Scotia Environment
Halifax, Nova Scotia

Dear Mr. Sanford:

Subject: Proposed Environmental Effects Monitoring Program 2016-2020-Fundy Ocean Research Center for Energy (FORCE) and Cape Sharp Tidal Venture (CSTV)

This letter outlines Fisheries and Oceans Canada (DFO), Fisheries Protection Program comments on the proposed Environmental Effects Monitoring Programs (EEMP) for the latest version of the 2016-2020 for the Fundy Ocean Research Center for Energy (FORCE) and CSTV received May 20, 2016.

DFO's review of the documents has identified several issues related to the department's mandate.

Lobsters:

- Additional non trap studies to detect changes in lobster movement patterns should be added to determine any changes in lobster movement around the turbine or cables.

Fish:

- The development of further studies intended to inform effects monitoring on fish populations should be undertaken in consultation with DFO such as an enhanced fish tagging study, to enable year round fish monitoring for species/populations found in the Minas Passage.
- The Minas Passage is a migratory path for numerous species and important overwintering habitat for species such as Striped Bass. The down-looking hydro-acoustic monitoring program should be expanded both in scope and equipment beyond the proposed 6 days per year in order to be representative of actual usage

of the site by marine fish species. Alternatives programs should be explored and implemented where practical and in consultation with DFO. The use of an array of bottom mounted echo-sounders would provide more robust data and would not be subject to the environmental limitations that inhibit vessel based surveys such as visibility, seasonal constraints, weather and tides.

- A framework for interpreting the results of the monitoring programs that incorporates life history and dynamics of fish populations as well as their distribution, behaviour and survival through the turbines should be added to the EEMP. This will allow for the impacts on population status and fisheries to be incorporated into the encounter model that is proposed to be developed as part of this EEMP.
- Further evaluation of the potential use of intertidal weirs to gather additional seasonal baseline information on fish assemblages and habitat use in the vicinity of the Project should be undertaken.
- The positioning of the Gemini Sea-Tec Sonar Device on the CSTV turbine will only provide interaction information from one side of one of the turbines (facing ebb flow) and has limited ability to be serviced in the event of failure or malfunction. Additional devices should be added to the program and deployed independently of the device to allow for accessibility. These devices should also be positioned to view any potential interaction from both sides of the turbines (e.g., side looking) and be applied to both proposed turbines. In the absence of this approach, alternative active fish monitoring methods should be developed for use in the program and submitted to the DFO and NSE for review.

Marine Mammals:

- Additional data collection should be carried out to evaluate marine mammal use in the area throughout the year.
- Multi-year repetition of sampling periods should be undertaken to provide a more robust basis for inter-annual comparisons that will inform the determination of effects from baseline conditions.
- It is the opinion of DFO that the deployment of the CPODs needs to be expanded to account for the considerable inter-annual variation in the summer distribution of porpoises in this part of their range as outlined in the Update COSEWIC Status Report on the Harbour Porpoise 2006, (http://www.registrelep-sararegistry.gc.ca/virtual_sara/files/cosewic/sr_harbour_porpoise_e2.pdf). It has been noted that some portions of the population may over winter in the Bay of Fundy therefore the monitoring program should also include winter sampling periods.
- If CSTV's turbine installation occurs outside of periods of peak Harbour Porpoise presence, consider using recorded clicks to test the detection range of hydrophones pre and post installation.
- Data interpretation from hydrophones should be conducted by a qualified acoustics analyst.
- Hydrophones used to detect marine mammals should be capable of detecting lower frequencies typical of baleen whales.

- DFO recommends that a more robust dead or injured marine mammal monitoring plan be developed and implemented throughout the life of this EEMP. The use of the Marine Animal Response Society (MARS) reports to identify any potential marine animal interaction has limited use as it relies on the general public to report any dead or injured marine animals.
- Any necropsies should be performed by a certified veterinarian with specialized skills in this area.

General:

- As information is received during this program, other recommendations may be proposed by DFO to improve the EEMP.
- Elements of the EEMP should only be discontinued after consultations with your department and DFO.
- DFO recommends that reporting of monitoring results should occur on a quarterly basis with a full summary provided in an annual report.
- A detailed data management plan and process for sharing data should be provided to NSE and DFO.
- FORCE should also provide additional detail surrounding contingency planning for their monitoring program in the event of equipment failure, data deficiency or loss of data.
- Raw data and other information from the monitoring programs may be requested by DFO to provide independent analysis or review of the effectiveness of the program.
- Before any future deployments at the FORCE site, potential impacts on fish and fish habitat from these devices should be assessed.

The information that will be collected as proposed in the EEMP will provide only limited understanding of the potential interactions with the turbines or use of the site by marine species. Expanding the EEMP to provide more robust data by implementing the advice provided by DFO will assist in reducing the risk of insufficient data which could limit the ability of regulators to assess the potential impacts of the two turbines and future turbine installations

FORCE should note that section 38(4) of the Fisheries Act stipulates that anyone who owns or has the charge, management or control of a work, undertaking or activity have the duty to report any occurrence that results in or is likely to result in serious harm to fish. It should also be noted that as outlined in Section 37 (1) of the *Fisheries Act*, DFO may request, procedures, schedules, analyses, samples, evaluations and other information to determine whether the work, undertaking or activity results or is likely to result in any serious harm to fish that are part of a commercial, recreational or Aboriginal fishery, or to fish that support such a fishery.

The inner Bay of Fundy population of Atlantic Salmon (*Salmo salar*) and White Shark (*Carcharodon carcharias*), which are currently listed as Endangered on Schedule 1 of the *Species at Risk Act* (SARA), are known to use this area and have been considered as part of this assessment. It is important to note that SARA applies to impacts on individuals of

listed species, the residence of listed species, and Critical Habitat identified in a species' recovery strategy or action plan. During the life of this EEMP there may be additional species listed or Critical Habitat identified. The proponent and sub-lease holders should be aware of SARA listed or potentially listed species that may interact with the tidal projects. Information about species at risk is available on the *Species at Risk* Public registry at www.sararegistry.gc.ca.

If deployment of any other demonstration devices are planned to occur during the period covered by this EEMP, the near-field monitoring of that project will have to be reviewed separately, and the overall FORCE EEMP may also have to be updated to consider other mid and far field effects from different technologies. If any changes to the EEMP are proposed in the future, FORCE must contact the Fisheries Protection Program to determine if further review is required prior to implementing any change.

If you have any questions, please contact Mike Wambolt at our Dartmouth office at 902-402-5851, or by email at michael.wambolt@dfo-mpo.gc.ca. Please refer to the file number referenced above when corresponding with the Program.

Yours sincerely,



Mark McLean
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Fisheries Protection Program