

Currents

July 2007
Volume 1, Number 1



A Strategic Environmental Assessment
www.bayoffundyse.ca

What's New

With this newsletter we want to introduce the new Fundy Tidal Energy Strategic Environmental Assessment (SEA) process. Also, we invite you to join our contact list, and pass the newsletter on to anyone who you think would be interested.

To be put on the contact list for further SEA communications go to www.bayoffundyse.ca and click on "Register".

Offshore Energy Environmental Research Association (OEER)

The NS Department of Energy has provided funds to the Offshore Energy Environmental Research Association (OEER) for a period of one year to prepare a Strategic Environmental Assessment (SEA) of offshore renewable energy, specifically tidal energy, in the Bay of Fundy. OEER is a not-for-profit association dedicated to fostering offshore energy and environmental research

and development including examination of renewable energy resources and their interaction with the marine environment. The association is a partnership between Acadia University, St. Francis Xavier University and Cape Breton University and was incorporated in March 2006.

Why Tidal Energy Now?

Climate change, rising energy prices, and declining supplies of fossil fuels mean that Nova Scotia must consider how to meet future energy needs while protecting the environment. The NS Department of Energy recently established mandatory targets to ensure that almost 20 per cent of Nova Scotia's electricity will be generated by renewable energy by 2013. This standard has been legislated through the Environmental Goals and Sustainable Prosperity Act, which also commits Nova Scotia to reducing greenhouse gas emissions by at least 10 per cent below 1990 levels by the year 2020. Ocean renewable energy sources, such as wave, tidal current and offshore wind, offer significant potential and the Bay of Fundy may be the best location in North America for grid-connected tidal power generation.



Tidal Energy Technologies

Although use of tidal power is really very old, modern tidal power is aimed at generating electricity. In the past, tidal energy technology involved installing turbines in barrages across estuaries or bays. The Nova Scotia Power Annapolis Tidal Power Generating Station, commissioned in 1984 is an example of this approach. However, this technology is now considered unsuitable for broad-scale commercial use because of environmental and economic concerns. New tidal technologies being developed use in-stream turbines and do not require construction of a

barrage. Like wind turbines, tidal turbines can operate on a horizontal or a vertical axis. They may be mounted on the seafloor by means of piles or a gravity foundation, or can be mounted on a floating structure that is moored to the seafloor. Another tidal technology is the tidal lagoon, which creates an offshore enclosure, but unlike a conventional barrage does not totally block tidal flow.

Technologies to be addressed by the SEA

The primary focus of the SEA will be on tidal in-stream turbines. The SEA will also address other tidal technologies (e.g., tidal lagoons), wave and offshore wind energy, but at a lesser level of detail.

No pilot projects permitted until the SEA is complete

The NS Department of Energy's new regulatory policy for ocean renewable energy states that: the SEA must be completed before in-stream tidal demonstration projects are allowed to enter the water; and commercial projects will only be allowed after a demonstration project has shown that the technology can be successful in an offshore environment and can meet all environmental requirements.

Who is overseeing the SEA process?

The OEER has appointed a Tidal Energy Technical Advisory Group (TAG), chaired by Dr. Meinhard Doelle of Dalhousie Law School, to oversee the preparation of the SEA. The Process Lead for the SEA is Lesley Griffiths, a community and environmental planner, who recently chaired the Sydney Tar Ponds Joint Panel Review. Ms. Griffiths will chair the community forums and workshops and act as lead author for the final SEA Report.

Collaboration with New Brunswick

Potential tidal energy sites have been identified in New Brunswick waters. The NB Department of Energy is also carrying out a SEA and is cost-sharing the preparation of the ESIA report. OEER and NB Energy will look for additional ways to share information and ideas.

How much power could the new tidal technologies generate?

This has still to be determined and would depend on many factors. Two major factors are the speed of the currents at different locations in the Bay and the percentage of the energy in those currents that could be removed by an in-stream tidal turbine without having an adverse environmental effect, such as a significant change in water levels or sediment transport patterns. As a first estimate the Electrical Power Research Institute (EPRI) has suggested that tidal energy might eventually contribute up to 15 per cent of Nova Scotia's peak electrical demand. The SEA will explore different tidal development scenarios and their potential impacts.

Will project – specific environmental assessments still be required?

The SEA will not necessarily take the place of project-specific environmental assessments. Any proposals to develop pilot or commercial scale tidal projects would still be reviewed to check if they trigger either provincial or federal assessment. For example, a small-scale tidal development generating under 2 megawatts would not require assessment under the Nova Scotia Environment Act, but would likely trigger some level of assessment under the Canadian Environmental Assessment Act.

What is a Strategic Environmental Assessment?

The SEA is a special future-oriented environmental assessment process that takes place before specific projects are considered. It provides opportunities for stakeholders to influence decisions relating to planning, policies, regulation and management, and is an effective tool to help decision-makers promote sustainable development. SEA is proactive rather than reactive, and focuses on defining goals and objectives and then evaluating alternative means of achieving them. The Province of Nova Scotia has decided that SEA is a very

appropriate tool to address the planning and development of tidal energy in the Bay of Fundy. In announcing the decision to commission a SEA in April 2007, the Hon. Bill Dooks, Minister of Energy, said that the SEA “will inform decisions on whether, when, and under what conditions to allow pilots and commercial projects into the water in the Bay of Fundy and under what conditions renewable energy developments in the Bay of Fundy are in the public interest over the long term”.

Fundy Tidal Energy SEA purpose

The purpose of the SEA is to,

- (1) determine through a consultative process:
 - whether marine renewable energy technologies, specifically tidal in-stream technology, can be developed in the Bay of Fundy without significant impacts on the marine ecosystem;
 - whether these technologies can be developed without significant socio-economic impacts on fishers and the fisheries and on other marine and coastal resource users;
 - what contribution marine renewable energy technologies can make to community economic development in Nova Scotia; and
- (2) advise the Government of Nova Scotia on:
 - whether, where and under what conditions pilot projects should be permitted;
 - what ongoing research and monitoring is required to gather the information needed to make decisions about commercial developments; and
 - other steps required to determine whether, where and how commercial projects should be developed, regulated and managed.

Steps in the SEA process

The main components of the SEA will include:

- Community Forums in August 2007;
- a Stakeholder Round Table, with members representing different interests and geographic areas, to meet four to six times during the process;
- preparation of an Environmental and Socio-economic Impact Assessment (ESIA) report by November 2007;
- public review of the ESIA Report and a request for written submissions;
- community and technical assessment workshops to be held early in 2008; and
- submission by OEER of a Final SEA Report with recommendations to the Nova Scotia Government by April 2008.



How individuals and organizations can participate

The Fundy Tidal Energy SEA is intended to be open and transparent. OEER invites all interested individuals and organizations to get involved. An invitation to nominate members to participate in the Stakeholders Round Table will be issued in the near future. The Round Table will advise the TAG on process issues and will provide an opportunity for discussions about key issues. However, input received from stakeholders and the public through other means, such as the forums or written submissions, will be given equal consideration.

Community Forums will provide opportunities to learn more about the SEA process and tidal technologies, to ask questions, share information and raise issues or concerns. Assessment Workshops will address predicted environmental and socio-economic impacts and possible mitigation and enhancement approaches in more detail, but will still be open to participation by all interested parties.