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4

THE REGULATORY REGIME FOR TIDAL ENERGY

4 - THE REGULATORY REGIME FOR TIDAL ENERGY

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WHAT DOES THIS MODULE COVER?

This module outlines the policy and legal considerations of developing a tidal energy resource. It is intended to give you an understanding of what laws apply to tidal energy, which authorities are responsible for regulation, and how to navigate through the regulatory process. It also provides background on the policies that have been developed to support tidal energy development.

As such, this module outlines the answers to the following questions:

- What permits and approvals are required to develop a tidal energy project and what is the process to get them?
- Who are the regulatory authorities involved?
- What laws ensure that tidal energy is developed in safe and sustainable manner?
- What are the rules for community engagement?
- What policies exist to support tidal energy development?

WHY SHOULD YOU READ THIS MODULE?

This module is for anyone wanting to learn more about the legal framework for tidal energy development in Nova Scotia such as project developers, investors, and communities.

- Learn about the rules and laws governing tidal energy development and how they may apply to you.
- Find out who the tidal energy regulatory authorities are for each level of government.
- Understand the regulatory processes, permits, and approvals required to develop a tidal energy project.
- Find out about new policy and proposed legislation included in Nova Scotia's Marine Renewable Energy Strategy.

4.0 - INTRODUCTION

Tidal energy is a public resource, and like many natural resources, tidal energy is governed by several pieces of legislation, regulations, and overarching policies. These laws and policies are designed to ensure that the development of this resource is carried out in the best interest of the public and the environment. As the marine ecosystem supports multiple users and uses, legislation strives to provide suitable licensing processes, environmental protection, worker/public safety, resource conservation, recognition of other users, community benefits, and economic benefits.

Unlike other natural resources with established market values, there is currently no specific regulatory scheme for tidal energy or marine renewable energy in Nova Scotia or anywhere in Canada. Therefore, there are multiple federal, provincial, and potentially municipal authorities involved in the regulation of tidal energy. Nova Scotia's current regulatory framework reflects the varied and complex public interests associated with tidal energy. These public interests include multiple uses of the marine environment; potential conflicts among these uses; granting rights to produce energy from a shared, public resource (oceans); and the sale and distribution of electricity through a regulated, integrated utility (Nova Scotia Power Inc.).

4.1 - SNAPSHOT OF PROVINCIAL & FEDERAL SUPPORT IN NOVA SCOTIA'S TIDAL ENERGY SECTOR

The following is a list of various studies, reports, and recommendations that have received government support or that have demonstrated provincial and federal support for the tidal energy sector.

2007

- Offshore Energy Environmental Research Association commissioned to carry out a Strategic Environmental Assessment (SEA), focused on the Bay of Fundy

2008

- Bay of Fundy SEA recommendations released
 - 29 recommendations including development of demonstration centre/site, legislation, and research
- Province selects three developers and commits to support tidal centre (i.e. FORCE)

2009

- FORCE Environmental Assessment approved (5 MW, 1.5km² test area)
- Nova Scotia Power deploys OpenHydro device at FORCE (first large-scale device in North America)
- Environmental monitoring program at FORCE begins

2010

- Renewable Electricity Plan released
 - Support for tidal energy development through feed-in tariffs, enhanced net metering
- Renewable Electricity Regulations
 - Province puts tidal feed-in tariff into regulation
- Marine Renewable Energy Legislation public consultation

2011

- Marine Renewable Energy Legislation public consultation recommendations released ("The Fournier Report")

2012

- Community-based feed-in tariff price for tidal energy set by Utility and Review Board (65.2 cents/kilowatt hour)
- Marine Renewable Energy Strategy released and included direction for the following initiatives:
 - Two-track licensing process with aspiration of 300 MW commercial development in the Bay of Fundy.
 - Enhanced mandate for FORCE to act as the hub of knowledge for applied research, technology, testing, and operation for both small and large scale technologies.
 - Exploring options for incubation facilities to test devices and associated technologies.
 - Development of marine renewable energy legislation and establishment of tidal regulatory authority.
- Development of Statement of Best Practices
- RFP issued for vacant 4th berth at FORCE
- Cape Breton Strategic Environmental Assessment (SEA) initiated
- UARB process for setting Developmental Tidal Array commences

2013

- Cape Breton SEA completed.

Tidal energy is a public resource, and like many natural resources, tidal energy is governed by several pieces of legislation, regulations, and overarching policies.

4.2 - POLICY AND PROGRAMS FOR TIDAL ENERGY

Nova Scotia has been working to advance the sustainable development of marine renewable energy, and specifically tides, due to advantages in resource potential and the resources' potential to help meet renewable electricity targets and contribute towards economic development. The advancement of tidal energy has been supported through enabling policies, strategies, plans, programs, and regulatory development. This section will provide a background of key provincial policies, programs, and legislation addressing tidal energy development that have been established in recent years. Many of them inform the current regulatory requirements and processes for tidal energy.

4.2.1 - THE BAY OF FUNDY STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA)

In 2007, the Government of Nova Scotia commissioned the Offshore Energy Environmental Research Association (OEER) (now called the Offshore Energy Research Association) to conduct a SEA of the Bay of Fundy. This was one of the first steps the province took towards developing marine renewable energy. The SEA was intended to provide advice on whether, when, and under what conditions tidal energy demonstration and commercial projects should be allowed in the Bay of Fundy.

The SEA process provided an assessment of the social, economic, and environmental effects and factors associated with potential development of renewable energy sources in the Bay of Fundy. It addressed all forms of marine renewable energy technology and approaches—offshore wind, wave, and various tidal methods. The main focus, however, was on tidal in-stream energy conversion (TISEC) devices, as the Bay of Fundy is most promising as a source of tidal energy.

The final SEA report consisted of 83 pages and 29 recommendations. Some recommendations pointed to immediate action, while others pointed to future decision-making and the need to be cautious. Recommendations included the following:

- Adopt ten sustainability principles as outlined in the SEA.
- Allow the demonstration of TISEC technologies and develop a demonstration facility.
- Take a cautious approach.
- Develop marine renewable energy legislation.
- Allow for incremental and removable development.
- Compensate fishers in the occurrence of negative effects.
- Engage in consultation with First Nations.

All reports, analysis, and details regarding the Bay of Fundy SEA process can be found here: <http://www.offshoreenergyresearch.ca/OEER/StrategicEnvironmentalAssessment/tabid/117/Default.aspx>.

In 2013, the Province of Nova Scotia completed a SEA in the Cape Breton region.

FOUNDATIONAL CONCEPT: WHAT IS A STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA)?

SEAs involve the evaluation of potential environmental effects of a policy, plan, or program. They are normally undertaken by or on behalf of a regulatory or government department with jurisdiction over the region or resources that may be affected by the policy, plan, or program. Increasingly, SEAs are becoming an essential aspect of planning as they can identify and predict cumulative effects of broad governmental policies early in the planning and design process. Additionally, SEAs promote public participation and provide alternative forums for public debate of policy or regional-scale issues associated with development that might otherwise surface during project level assessments where existing processes are ill-equipped to deal with such issues.

4.2.2 - RENEWABLE ELECTRICITY PLAN

In April 2010, the Government of Nova Scotia released its Renewable Electricity Plan to support and encourage increased development of renewable energy resources for electricity generation. The plan sets out a detailed path for the province to gradually move away from predominately coal-fired electricity to energy sources that are more local, clean, secure, and sustainable. The plan sets the course for achieving a 25% renewable electricity supply by 2015 and establishes an ambitious goal to have 40% of Nova Scotia's electricity supply (sales) produced from renewable resources by 2020. That 2020 goal is now legislated in Nova Scotia's Electricity Act.

To achieve the 2015 target, the plan outlines new mechanisms and programs to increase renewable energy development that all Nova Scotians, from Nova Scotia Power (NSPI) and large independent power producers, to community organizations and committed citizens, can take part in. The following is a description of the legal framework and those programs developed as a result of the Renewable Electricity Plan that are pertinent to tidal energy development.

4.2.3 - RENEWABLE ELECTRICITY REGULATIONS

The Renewable Electricity Regulations were established under Nova Scotia's Electricity Act in October 2010 to provide a legal basis for many of the actions put forward in the Renewable Electricity Plan. The regulations outline many of the legal criteria and requirements for the Community Feed-In Tariff (COMFIT) program as well as the establishment of a One-Window Process to review COMFIT applications and details on the developmental tidal FIT.

To view the Renewable Electricity Regulations, please visit: <http://www.gov.ns.ca/energy/electricity/regulations.asp>.

To learn more about the COMFIT program, see the description below. To get more detailed information about COMFIT requirements and One-Window Process, please visit: www.nsrenewables.ca.

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FOUNDATIONAL CONCEPTS: WHAT IS A FEED-IN TARIFF (FIT)?

A “feed-in tariff” (FIT) is a rate per kilowatt hour that small-scale energy producers are guaranteed for a fixed period of time. This provides them with enough economic certainty to invest in renewable energy projects. “Feed-in” means that energy produced by these projects will be fed in to the province’s electricity grid.

As of early 2012, FITs have been implemented in at least 65 jurisdictions and 27 states,* notably in Spain, Germany, Vermont, and Ontario to accomplish specific policy objectives including renewable electricity acceleration, employment creation, and industry building.

*“Renewables 2012 Global Status Report”, Renewable Energy Policy Network for the 21st Century

http://www.ren21.net/Portals/0/documents/activities/gsr/GSR2012_low%20res_FINAL.pdf

4.2.4 - ENHANCED NET-METERING

Net-metering is a utility-led program by Nova Scotia Power that allows a consumer to meet his or her annual electricity needs with a low impact renewable electricity generation facility of up to 1 MW capacity. The facility must be connected to the distribution grid through a meter that measures electricity flows in two directions. Tidal energy is considered a low impact renewable resource that qualifies for this program.

More information about the enhanced net-metering program can be found in the following documents and websites:

- Nova Scotia Power website: <http://www.nspower.ca/en/home/environment/renewableenergy/enhanced/default.aspx>
- Bill 64--Amended Electricity Act
- Regulation 3.6 Net Metering Service
- Interconnection Guidelines (Customer Generation with Capacity up to 100 kW)
- Net Metering Interconnection Agreement.

4.2.5 - COMMUNITY-BASED FEED-IN TARIFF (COMFIT) PROGRAM

The COMFIT program was created to encourage and support smaller-scale renewable energy projects that are developed and owned by community-based groups such as municipalities, First Nations, co-operatives, and not-for-profit groups. The focus on community-based projects is designed to ensure that projects are rooted in the community and investment returns remain there.

Projects will be connected to the grid at the distribution level. The province’s current distribution capacity is roughly 200 MW, but changes as new customers are added or deleted. Some of that capacity is located in areas that are not well suited for development. Therefore, the Province is expecting roughly half that capacity may be used, or about 100 MW. Each distribution connection has its own capacity that is set by the size of the electricity demand or load that it serves.

Tidal energy is a qualifying renewable resource under the COMFIT program. Devices that are 0.5 MW or less and connected at the distribution level can receive a small-scale tidal COMFIT rate of 65.2 cents/kWh. This rate was set during a hearing process led by the Nova Scotia Utility and Review Board (UARB), as directed by Nova Scotia’s Renewable Electricity Regulations. For more information on the setting of the COMFIT rate and to read the UARB’s formal decision concerning the first set of COMFIT rates established in July 2011, review the final decision document here: <http://www.nsuarb.ca/images/stories/pdf/Decisions/11Sep/comfit%20order%20with%20tariffs.pdf>.

Terms of the agreement to receive the COMFIT rate are included in a power purchase agreement (PPA). The COMFIT PPA establishes an agreement between COMFIT proponents and Nova Scotia Power for the sale of renewable electricity for a period of 20 years. In the fall of 2012, a draft PPA was submitted to the UARB for approval through a hearing process.

NOVA SCOTIA IN CONTEXT: TIDAL ENERGY COMFIT PROJECTS

Since the COMFIT program was established, five small-scale tidal energy COMFIT approvals have been awarded to Fundy Tidal Inc.—three in Digby County and two in Cape Breton:

- Grand Passage (500 kW)
- Petit Passage (500 kW)
- Digby Gut (1.95 MW)
- Great Bras d'Or Channel (500 kW)
- Barra Strait (100 kW)

For more information on these projects, visit Fundy Tidal Inc.'s website: http://www.fundytidal.com/index.php?option=com_content&view=section&id=7&Itemid=24.

In addition to the requirements set out by the Renewable Electricity Regulations for the COMFIT program, several directives have been developed to guide the program by developing standards and definitions. Directives that may be applicable to tidal energy projects can be accessed here: <https://nsrenewables.ca:44309/comfit-key-documents>.

For more information about the COMFIT program and the application process for small-scale tidal energy projects, please visit www.nsrenewables.ca.

Please see section 4.3 in this module for more information on the COMFIT program application process and associated permitting process.

4.2.6 - DEVELOPMENTAL TIDAL ARRAY FEED-IN TARIFF (FIT)

As tidal energy devices are still in the demonstration phase, the Government of Nova Scotia established a FIT specific to large-scale tidal arrays. Developmental in-stream tidal arrays that are connected at the transmission level using devices greater than 0.5 MW may qualify for this tariff.

The Province directed the UARB to commence the process to set a Developmental Tidal Array FIT for tidal devices and arrays. The UARB is expected to look at a variety of factors when setting the feed-in tariff rate for large-scale tidal including installation, interconnection and capital costs, operations, and maintenance, as well as predictions around capacity factors, financing, and expected output.

The number of devices added will be determined by the existing environmental and renewable electricity regulations, the private sector, and the state of technology moving forward. It is anticipated that the FIT rate will be set in early 2013.

For more information about the Developmental Tidal Array FIT, please visit www.nsrenewables.ca.

4.2.7 - LARGE-SCALE PROJECTS AND THE RENEWABLE ELECTRICITY ADMINISTRATOR

In addition to the COMFIT program, the Renewable Electricity Plan also established a policy for a minimum of 300 GWh to be procured from independent power producers (IPPs). IPP projects are at a larger-scale and while they typically have been wind projects in Nova Scotia, tidal energy is also under this umbrella. The Renewable Electricity Administrator (REA), is an independent body, which was established by the Government of Nova Scotia in 2010. The REA oversees the competitive bidding processes and is intended to promote, fairness, transparency, and efficiency. In July 2011, Power Advisory LLC was appointed to serve as the REA after a competitive application process.

Requests for Proposals (RFP) are issued for large-scale renewable electricity projects to identify IPP projects that represent the best value for electricity ratepayers while ensuring a transparent review and decision-making process. To date, the RFP process managed by the REA has only included commercially-viable renewable energy sources and therefore, tidal energy has not been part of this process. However, tidal energy is included in the terms of reference for the REA and therefore, it is important to note that this is another mechanism that could apply to tidal energy in the future.

NOVA SCOTIA IN CONTEXT: LARGE-SCALE WIND ENERGY PROJECTS

In order to meet the legislated target of 25% renewable electricity by 2015, most of Nova Scotia's renewable electricity will come from large and medium-scale projects. A minimum of 600 gigawatt hours (GWh) of larger-scale renewable energy projects are required to meet the target. To ensure value for ratepayers, the Government of Nova Scotia decided that there will be an equal split for project development between independent power producers (IPPs) and Nova Scotia Power for access to these transmission connected projects.

In 2011-2012, a large-scale RFP process for IPPs was used for procuring wind energy projects. Nineteen proposals were received and evaluated and three contracts were awarded for 355 GWh of wind energy.

The three projects are scheduled to be in service by January 2015 and will bring local benefits to the province's communities, including jobs and local investments. The average purchase price from these three projects is in the mid-\$70/MWh range, causing them to be the lowest cost renewable energy projects procured in Nova Scotia since renewable energy targets were set in 2007.

4.2.8 - MARINE RENEWABLE ENERGY LEGISLATION

The Bay of Fundy SEA recommended that legislation specific to marine renewable energy (tidal, waves, and offshore wind) be created to manage the long-term development and use of the resource. The Government of Nova Scotia adopted that recommendation and made a commitment to develop Marine Renewable Energy Legislation that would provide clear, predictable, and efficient processes to support the sustainable growth of the sector including tidal, wave, and offshore wind energy.

In the fall of 2010, the Province commissioned Dalhousie oceanographer, Dr. Robert Fournier, to lead a public consultation process regarding options for marine renewable energy legislation. As a result of the consultation process, Dr. Fournier delivered a final report –the “Fournier Report”–to the government that included 27 recommendations for the creation of future marine renewable energy policy and legislation. The report included specific direction on planning, economic opportunities, research, and regulation.

The Fournier Report can be viewed here:

<http://www.gov.ns.ca/energy/resources/spps/public-consultation/marine-renewable-energy/Fournier-Report-English.pdf>.

Background papers on Marine Renewable Energy Legislation in Nova Scotia can be viewed here:

<http://www.gov.ns.ca/energy/resources/spps/public-consultation/NS-MRE-Policy-Background-Final.pdf>

<http://www.gov.ns.ca/energy/resources/spps/public-consultation/NS-MRE.pdf>.

4.2.9 - NOVA SCOTIA MARINE RENEWABLE ENERGY STRATEGY

In May 2012, the Government of Nova Scotia released its Marine Renewable Energy Strategy. The strategy was a key recommendation of the 2010 Marine Renewable Energy Legislation public consultation process. The final report from this process, the “Fournier Report” included a recommendation to develop a strategic plan for marine renewable energy with an immediate emphasis on in-stream tidal energy.

The Marine Renewable Energy Strategy establishes new policies, tools, and legal direction to support the development of tidal energy from the demonstration phase to commercialization. The strategy builds on Nova Scotia’s vision to be “a leader in the development of technology and systems that produce environmentally sustainable, competitively priced electricity from the ocean.” It outlines research, development, and regulatory initiatives to help achieve an internationally active industry, while ensuring adaptive and responsible management of the resource to protect the environment and other marine users.

The strategy includes enabling mechanisms and activities to help advance tidal energy in Nova Scotia, including a feed-in tariff scheme coupled with a licensing process that will be established in legislation to provide a pathway for projects to proceed from the testing state to demonstration and finally, to commercial development. (See section 4.4 in this module for more information on the future licensing process).

The Marine Renewable Energy Strategy can be viewed here: <http://www.gov.ns.ca/energy/resources/publications/Nova-Scotia-Marine-Renewable-Energy-Strategy-May-2012.pdf>.

4.2.10 - STATEMENT OF BEST PRACTICES

The Government of Nova Scotia has been working with the federal Department of Fisheries and Oceans (DFO), other federal and provincial partners, research organizations, and industry to develop a Statement of Best Practice for the development of in-stream tidal technologies. In June 2012, the Nova Scotia Government met with stakeholders, experts, industry, and other regulators to seek input on the key elements of the Statement. A draft Statement of Best Practice is currently under development. (Please see section 4.4 for details on how the Statement of Best Practices will function in current and future licensing processes.)

The goal of the Statement is to contribute to improved regulatory review and environmental assessment processes for an adaptive approach to the growth of the tidal energy industry in Canada, leading to improved environmental review and management processes. The Statement represents an innovative tool to harmonize development and environmental interests to ensure the industry grows in an environmentally and socially responsible manner.

The Statement embeds standard requirements and practices for risk assessment as well as options for precautionary and adaptive environmental assessment, licensing and management, site assessment and environmental monitoring requirements, modeling and monitoring energy production, deployment of devices, stakeholder consultation and engagement, and transparency in environmental data collection and dissemination. These minimum requirements and practices will complement existing regulatory processes,

The Marine Renewable Energy Strategy establishes new policies, tools, and legal direction to support the development of tidal energy from the demonstration phase to commercialization. The strategy builds on Nova Scotia’s vision to be “a leader in the development of technology and systems that produce environmentally sustainable, competitively priced electricity from the ocean.”

and are intended to formalize and standardize the mitigation measures in Canada with respect to the development and deployment of tidal energy. The Statement will apply to all tidal energy activities and come into effect through existing respective regulatory authorities and instruments.

By using the Statement of Best Practices, respective governments, regulators, tidal developers, community, and the general public will have the assurance that there will be a safe path ahead of them in the development of a in-stream tidal energy industry.

4.3 - THE PERMITTING AND LICENSING PROCESS FOR TIDAL ENERGY

Tidal energy development is subject to a number of provincial and federal laws and regulatory authorities as both governments have certain jurisdictional roles regarding matters related to marine resources. There may also be municipal laws to consider, depending on the location of the project.

Constitutionally, the Province's responsibilities arise from its ownership and related jurisdiction over areas of the seabed, while federal responsibility primarily arises based on its constitutional jurisdiction for fishing and navigation rights. These constitutional jurisdictional boundaries are only the starting point of multifaceted regulatory frameworks relevant to marine renewable energy at both the provincial and federal levels.

Given the complexity of the regulatory environment for tidal energy, this section aims to provide clarity for developers, communities, and individuals interested in developing a project or those having a general interest in how industry is facilitated and regulated. This section will provide a detailed how-to, step-by-step process and supporting information for how to obtain permits and licenses for small and large-scale tidal development and identification of all associated legislation, regulations, and authorities.

Please note: This section is subject to change once Nova Scotia's Marine Renewable Energy Legislation is developed and enacted. Please visit www.gov.ns.ca/energy for the most recent tidal energy policy and legislation information.

4.3.1 - SMALL-SCALE PROJECTS: COMFIT PROGRAM APPLICATION PROCESS

Both small-scale (0.5 MW and below) and large-scale tidal energy projects (greater than 0.5 MW) are typically subject to many of the same provincial and federal regulatory requirements given that many aspects of the marine environment such as navigation, transportation, and habitat are governed by federal government; the smaller size of a project does not necessarily mean it will not require the same permits and oversight as a larger project. However, projects under 2 MW will not trigger the provincial environmental assessment. All aspects of a project are considered in terms of technology, location, size, number of devices, etc. that may dictate the regulatory requirements and processes.

Currently, small-scale tidal energy projects that are proposed to be 0.5 MW or below, connected at the distribution system, and owned by an eligible community-based group can apply to the provincial COMFIT program. The COMFIT application process is a separate activity from the permitting and licensing process that has been established for tidal energy projects. However, many of the steps and activities included in the COMFIT application process overlap with other federal and provincial regulatory requirements.

For more information and detail on COMFIT requirements and the application process, please view the COMFIT guide here: <http://nsrenewables.ca/comfit-key-documents>.

4.3.2 - WHO'S INVOLVED

The framework currently being used for all tidal energy project development was developed in August 2012 and based on the 2007-2008 Bay of Fundy SEA. It includes a One-Window Committee to coordinate the permits and approvals required by federal and provincial regulatory authorities to ensure a timely, coordinated, and efficient regulatory process for prospective tidal energy developers. The One-Window Standing Committee includes key federal and provincial regulators and government departments interested in, or with authority for, marine projects.

Table 4-1: One Window Standing Committee for Tidal Energy

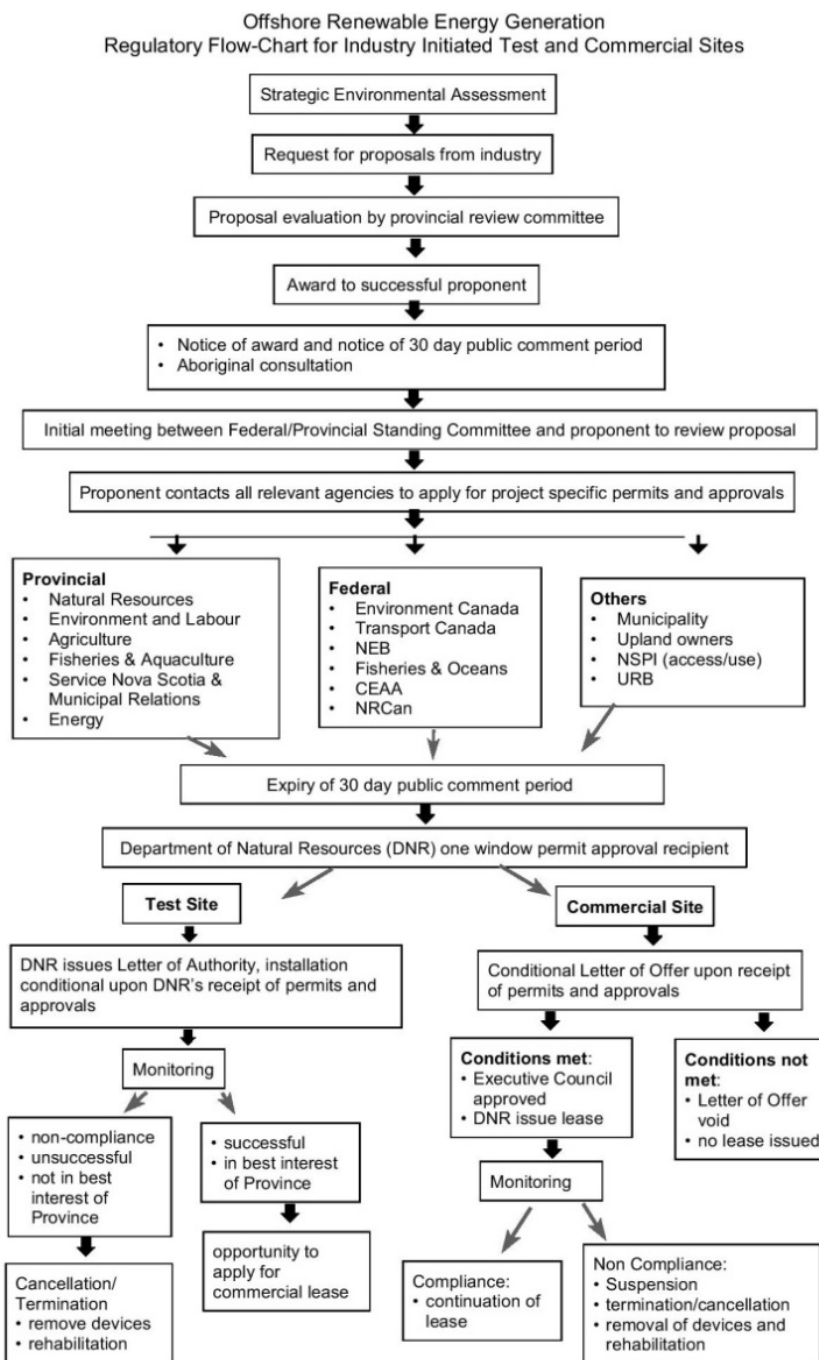
ONE WINDOW STANDING COMMITTEE FOR TIDAL ENERGY*	
PROVINCIAL AUTHORITIES	FEDERAL AUTHORITIES
Department of Energy (lead)	Natural Resources Canada
Department of Environment	Environment Canada
Department of Labour	Fisheries and Oceans Canada
Department of Fisheries and Aquaculture	Canadian Environmental Assessment Agency
Department of Natural Resources	Transport Canada
Office of Aboriginal Affairs	

**Other federal and/or provincial authorities in addition to this committee may be involved in the permitting and approval of tidal energy projects depending on details specific to individual projects.*

The One-Window Standing Committee was used for the permitting and licensing of the Fundy Ocean Research Center for Energy (FORCE) and was recognized as being quite effective for that project. However, the Government of Nova Scotia has recognized that a more formal, integrated approach will likely be necessary as the level of activity in the marine renewable energy sector grows.

4.3.3 - THE PERMITTING PROCESS

As depicted in the flowchart below, a framework and process has been established to guide proponents interested in developing a tidal energy project in Nova Scotia. A brief description of the step-by-step process depicted by the flowchart is included after the image.



For detailed guidance of this process, please see the Guidelines for Permitting of a Pre-Commercial Demonstration Phase for Offshore Renewable Energy Devices (Marine Renewables) in Nova Scotia established by the Nova Scotia Department of Energy here: <http://gov.ns.ca/energy/resources/EM/tidal/Final-Guidelines-for-Permitting-Demonstration-Phase.pdf>.

1. PROJECT PROPOSAL

A project proposal including the following information should be prepared by the proponent:

- Proposed location and size of the project;
- Description of technology and feasibility;
- Knowledge and understanding of local environment, sensitive areas, and risks;
- Financial feasibility;
- Insurability; and
- Decommissioning plan and financial surety.

Proponents should consult the Statement of Best Practice in the early stages and throughout the project planning process to ensure the safe and responsible development of their project(s).

2. PROPOSAL SUBMISSION

Proposals are required to be submitted to the Nova Scotia Department of Energy, who will then distribute the proposals to members of the One-Window Committee.

3. PROPOSAL EVALUATION

An interdepartmental provincial review committee (Review Committee), comprised of staff from the Departments of Energy, Natural Resources, and Environment, as well as technical experts and others as required, will evaluate and review the proposal before convening the One-Window Standing Committee.

4. DETERMINATION OF REGULATORY APPROVALS/PERMITS

Depending on the completeness and deemed potential of a project, a proponent will be invited to meet with the One-Window Standing Committee consisting of provincial and federal government departments to determine required permits and approvals that may be required.

This helps to ensure that the regulatory process is coordinated, efficient, and streamlined as much as possible.

Table 4-2 is a list of legislation and regulations that may be applicable to a tidal energy project.

Table 4-2: Relevant Legislation and Regulatory Authorities for Tidal Energy

PROVINCIAL				
AUTHORITY	LEGISLATION	DESCRIPTION	APPROVAL REQUIRED & CORRESPONDING LEGISLATION	WEBSITE
Department of Communities, Culture, and Heritage	Special Places Protection Act (SPPA)	Provides the Heritage Division with a mandate to protect important archaeological, historical, and paleontological sites and remains, including those under water.	Resource Impact Assessment (needed for development that will potentially disturb or alter the landscape, thereby endangering archaeological sites): Special Places Protection Act, S. 8. Heritage Research Permit (needed for exploration for, or excavation of, fossils or archaeological sites): Special Places Protection Act, S. 8.	http://nslegislature.ca/legc/statutes/specplac.htm
Department of Environment	Nova Scotia Environment Act (NSEA)	States that environmental assessments for tidal energy projects over 2MW are mandatory.	Environmental assessment: Environment Act, S. 49 Environmental Assessment Regulations, Schedule A	http://nslegislature.ca/legc/statutes/envromnt.htm
		Concerns projects that alter surface watercourse or the flow of water.	Water approval: Environment Act, S. 66 Activities Designation Regulations, S. 5	
	Wilderness Areas Protection Act (WAPA)	Provides the legal framework for establishing, managing, protecting and using Nova Scotia's designated wilderness areas. The Act's primary objectives are to protect natural processes, biological diversity, and outstanding natural features. The secondary objectives are use-related. Activities such as wilderness recreation, environmental education, and scientific research are encouraged.	Authorization by the Minister: Wilderness Areas Protection Act, S. 11, 17, & 19	http://www.gov.ns.ca/nse/protectedareas/docs/Wilderness_Act_Sum.pdf
Department of Fisheries & Aquaculture	Fisheries and Coastal Resources Act (FCRA)	Specifically addresses approvals for aquaculture activities below the coastal low-water mark. Potential conflicts are always possible between a licensed aquaculture operation and tidal in-stream activities, although the need for elevated tidal currents in the latter could ultimately reduce potential overlap.		http://nslegislature.ca/legc/statutes/fishand.htm

AUTHORITY	LEGISLATION	DESCRIPTION	APPROVAL REQUIRED & CORRESPONDING LEGISLATION	WEBSITE
Department of Natural Resources	Endangered Species Act (ESA)	Mandates the compilation of a listing of endangered or threatened plant and animal species out to the coastal low-water mark.	Potential disturbance of any species listed under the Nova Scotia Endangered Species Act or designated critical habitat (Endangered Species Act, S 13)	http://www.gov.ns.ca/natr/wildlife/biodiversity/legislation_nsesa.asp
	Crown Lands Act (CLA)	Submerged land located along the coast of Nova Scotia is considered to be Provincial Crown Land, owned by the province, unless it has been sold by way of provincial or federal grant or it is considered to be a federal public harbour. Under the Crown Lands Act, the Minister of Natural Resources is responsible for Crown Lands, including submerged lands along the coast of the province.	See Table 4-3 below for description of licenses, lease options, and approvals.	http://www.gov.ns.ca/natr/land/submerged-land.asp or http://nslegislature.ca/legc/statutes/crownlan.htm
	Beaches Act (BA)	Provides “for the protection of beaches and associated dune systems as significant and sensitive environmental and recreational resources; provides for the regulation and enforcement of the full range of land use activities on beaches, including aggregate removal, so as to leave them unimpaired for the benefit and enjoyment of future generations; controls recreational and other uses of beaches that may cause undesirable impacts on beach and associated dune systems.” This Act applies to both Crown and privately owned protected beaches.	Permit (If project requires removal or placement of material from a beach, operation of vehicle on a beach, or the construction or placement of any structure on a beach): Beaches Regulations, S 5, 7, 9	http://nslegislature.ca/legc/statutes/beaches.htm
	Provincial Parks Act		Authorization by the Minister (If the project has the potential to disturb the flora and fauna located in a provincial park): Provincial Parks Act, S. 13, 17	http://nslegislature.ca/legc/statutes/provpark.htm

AUTHORITY	LEGISLATION	DESCRIPTION	APPROVAL REQUIRED & CORRESPONDING LEGISLATION	WEBSITE
Service Nova Scotia & Municipal Relations	Municipal Government Act (MGA)	Outlines the powers, responsibilities, administrative structure, and procedural steps that municipalities are required to follow. The Act deals with municipal services, methods that municipalities are allowed to use to generate revenue (property tax, service fees, fines), and how they manage development processes. The MGA incorporates 8 older acts into one.		http://www.gov.ns.ca/snsmr/muns/manuals/mga.asp

Table 4-3: Provincial Land Leasing & Licensing

PROVINCIAL LAND LEASING & LICENSING:		
POTENTIAL REQUIREMENTS UNDER NOVA SCOTIA'S CROWN LANDS ACT FOR TIDAL ENERGY		
ACTIVITY	APPROVAL	LEGISLATION
Requires exclusive use of Provincial Crown Land	Crown Lands Lease	Crown Lands Act, S 16
Requires non-exclusive use of Provincial Crown Land	Permit, Letter of Authority or License	Crown Lands Act, S 16
Use of Provincial Crown Land to access project site or for transmission lines	A Permit for Access Across Crown Land, A Right of Way, or Easement	Crown Lands Act, S 16
Removal of Trees on Crown Land during construction	A Letter of Authority or Timber License	Crown Lands Act, S 28
Setting up test, experimentation equipment or instruments on Provincial Crown Lands	Letter of Authority or License for the short term use of Crown Land	Crown Lands Act, S 16
Establishing or re-establishing a legal survey, land boundary line, or marker on or adjoining Provincial Crown Land	Survey Order	Crown Lands Act, S 13
The use or improvement of any road on Provincial Crown Land	Permit for Access Across Crown Land, Right of Way, or consent of pre-existing Crown Land Licensee	Crown Lands Act, S 16

Table 4-4: Relevant Federal Legislation

FEDERAL			
AUTHORITY	LEGISLATION	DESCRIPTION	WEBSITE
Canadian Environmental Assessment Agency	Canadian Environmental Assessment Act (CEAA)	Addresses projects that involve federal decision-makers, fall under federal legislation, use federal funding, contain federal proponents, take place on federal lands, or fall under federal jurisdiction.	http://laws-lois.justice.gc.ca/eng/acts/C-15.2/
Environment Canada	Species at Risk Act (SARA)	Designed to protect identified species considered to be at risk on federal lands, including territorial seas and internal waters. Species are protected through a process of general prohibitions combined with project permitting requirements to avoid certain potentially harmful activities.	http://www.ec.gc.ca/alef-ewe/default.asp?lang=en&n=ED2FFC37-1
	Canadian Environmental Protection Act (CEPA)	Protects the environment and human health, applies the precautionary principle that, 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, and promotes and reinforces enforceable pollution prevention approaches. Outlines public participation requirements related to the administration of the Act.	
	Migratory Birds Convention Act	Provides for the protection of migratory birds through the Migratory Birds Regulations.	http://www.ec.gc.ca/nature/default.asp?lang=En&n=7CEBB77D-1
Department of Fisheries & Oceans Canada (DFO)	Fisheries Act (FA)	Applies to all fishing zones, territorial seas, and inland waters of Canada and is binding to federal, provincial, and territorial governments. As federal legislation, the Fisheries Act supersedes provincial legislation when the two conflict.	http://www.dfo-mpo.gc.ca/habitat/role/141/1415/14151-eng.htm
	Oceans Act	Deals with all internal waters and within the territorial zones of Canada.	
Transport Canada	Navigable Waters Protection Act (NWPA)	Administered by Transport Canada, applies to the Bay of Fundy because it is navigable water and a permit is required for any work that is built, placed in, on, over, under, through, or across any navigable water.	http://www.tc.gc.ca/eng/marine-safety/debs-arctic-acts-regulations-nwpa-1308.htm
National Energy Board	National Energy Board Act (NEBA)	Applies to all projects that cross provincial boundaries, extend beyond the territory of a province, or include an inter-provincial or international power line; a certificate or permit is required.	http://www.neb.gc.ca/clf-nsi/rpblctn/ctsndrgltn/ct/ntnlInrgy-brdct-eng.html

5. FIRST NATIONS ENGAGEMENT

Proponents are encouraged to engage with the Mi'kmaq of Nova Scotia early in project development. The Province of Nova Scotia may delegate certain procedural aspects of consultation with First Nations to proponents. In instances where there is no Crown duty to consult, proponents may still wish to engage the Mi'kmaq of Nova Scotia to share information about their project.

For more information, see The Proponent's Guide: Engagement with the Mi'kmaq of Nova Scotia here: <http://www.gov.ns.ca/abor/docs/Proponants-Guide.pdf>.

Mi'kmaq Ecological Knowledge Studies (MEKS) are also a requirement under Nova Scotia policy. There are sites in Nova Scotia that have particular cultural significance for the Mi'kmaq of Nova Scotia, who may utilize them to support traditional or current practices for food, social, or ceremonial purposes. A MEKS should be conducted to identify areas of historical and current use in the project area and help to ensure that traditional knowledge informs the project design and development.

6. COMMUNITY ENGAGEMENT

The marine environment is complex and has many uses: tourism, landscapes, seascapes, habitats, fisheries, and ecosystems. It is a public resource and as such, the owners— Nova Scotians—must trust how marine renewable energy is developed and operated to ensure sustainable and beneficial growth. Public acceptance and trust must be earned and maintained. Regardless of the size of project, it is important for proponents to engage with local communities that may be affected by the project.

Community and public support are very important to the success of energy projects and it is critical to inform the surrounding community about project intentions and to receive input and questions about the projects. Further, community engagement can provide vital local knowledge, reduce the risk of challenges and delays, and identify how a project can bring value to a community.

Proponents who are seeking COMFIT approval are required to have evidence of community support. This can be demonstrated by providing a municipal council resolution indicating support from the municipality within which the project is to be located or written evidence of support for the project from members of the community in which the project is to be located.

The COMFIT program has provided some helpful guidance for engaging communities and the process for providing evidence of support, which can be viewed in the COMFIT Guide here: http://www.ren21.net/Portals/0/documents/activities/gsr/GSR2012_low%20res_FINAL.pdf. Module 6 of this toolkit also provides details about engaging communities.

Proponents are also encouraged, through this process and the subsequent environmental assessment process, to engage potentially affected fishers. An early, proactive approach serves to benefit from industry knowledge and ensure that fishers are heard and considered. For example, FORCE's tidal projects in the Minas Basin involved early dialogue between the developers and the fishing community. This dialogue is encouraged throughout the permitting, development, and operations phases.

It is anticipated that the Government of Nova Scotia will develop formal rules about engagement and tidal energy interaction with fisheries in its Marine Renewable Energy Legislation. A discussion of fisheries issues and options related to tidal energy can be found in the Marine Renewable Energy Legislation for Nova Scotia - Discussion Document. <http://www.gov.ns.ca/energy/resources/spps/public-consultation/NS-MRE-Policy-Background-Final.pdf>

7. DETERMINATION OF MUNICIPAL REQUIREMENTS AND IMPACTS

Tidal energy project activities could affect local communities with respect to land-based associated energy facilities or transportation/servicing infrastructure that fall under the jurisdiction of municipalities for appropriate zoning and property taxation. Additional permits may be required at the municipal level and therefore, it is important that municipalities are kept informed regarding new projects or developments.

More information regarding municipalities, engagement, and possible planning issues can be obtained from:

- Union of Nova Scotia Municipalities (UNSM): www.unsm.ca;
- Service Nova Scotia and Municipal Relations: www.gov.ns.ca/snsmr.

8. APPLICATION SUBMISSION

Once a proponent has completed the steps above, he or she is ready to submit an application for development of the project to each of the regulators identified in step 4. This application should also include decommissioning plans and financial security arrangements. It is recommended that a project application be submitted to the Nova Scotia Department of Energy and the Canadian Environmental Assessment Agency to initiate the process among the provincial and federal governments.

9. DETERMINATION OF ENVIRONMENTAL ASSESSMENT REQUIREMENTS

Proponents will need to determine whether an environmental assessment is required for their project. Environmental assessment ensures that environmental, human health, socio-economic, cultural, historical, archaeological, and architectural concerns from all stakeholders are identified and addressed at the earliest stage of development planning. Through consideration of these broad environmental issues and public concerns, federal and/or provincial government decides whether or not the development can proceed in an environmentally sustainable manner.

Environmental assessment is used in every province and territory in Canada and in many countries worldwide. It is a tool that promotes good project planning, thereby avoiding or minimizing environmental effects caused by a development. It also allows developments to incorporate environmental considerations at the planning stage, which may avoid expensive changes once the project design has been finalized.

If environmental assessment legislation is triggered by federal and/or provincial legislation, proponents and regulators are required to consider the following factors related to the project:

- environmental effects, including environmental effects caused by accidents and malfunctions, and cumulative environmental effects;
- significance of those environmental effects;
- public comments;
- mitigation measures and follow-up program requirements;
- purpose of the designated project;
- alternative means of carrying out the designated project;

- changes to the project caused by the environment;
- results of any relevant regional study;
- any other relevant matter.

There are different types of environmental assessments depending on the scope, size, and details of a project. Both provincial and/or federal assessments may be required and the following provides a brief summary of legislated environmental assessment triggers and links to further information for business and communities:

Provincial: Under Nova Scotia's Environment Act, projects that are 2 MW or greater trigger an environmental assessment. For more information, see:

The Province of Nova Scotia's website regarding environmental assessment
<http://www.gov.ns.ca/nse/ea/>

The Proponent's Guide for Environmental Assessment
<http://www.gov.ns.ca/nse/ea/docs/EA.Guide-Proponents.pdf>

A Citizen's Guide to Environmental Assessment
<http://www.gov.ns.ca/nse/ea/docs/EA.Guide-Citizens.pdf>.

Federal: A federal environmental assessment under the Canadian Environmental Assessment Act could be triggered if other federal legislation is elicited (regardless of project size or aggregate capacity) under the Fisheries Act, or Navigable Waters Protection Act. For more information, see:

Basics of Environmental Assessment:
<http://www.ceaa.gc.ca/default.asp?lang=En&n=B053F859-1>.

10. LEASE ISSUANCE

The Nova Scotia Department of Natural Resources may issue a Letter of Authority containing a condition prohibiting installation of devices until all copies of written approvals and permits are received. The fee for the Letter of Authority will be \$200.00.

To learn more about Crown Land in Nova Scotia, please visit the Department of Natural Resources website here: <http://www.gov.ns.ca/natr/land/>.

11. DEVELOP AND IMPLEMENT A MONITORING PROGRAM

Successful proponents will be required to develop a monitoring program for the project. The implementation of a monitoring program is required subsequent to installation. Precise monitoring conditions will vary between devices, projects, and sites.

4.4 - THE FUTURE REGULATORY AND LICENSING SYSTEM FOR TIDAL ENERGY

Nova Scotia's Marine Renewable Energy Strategy includes a plan to develop new legislation, including a licensing process for tidal energy projects. This means that some of the direction and guidance provided in section 4.3 may change in the near future. As the regulatory and licensing system is on the cusp of change, this section aims to provide some preliminary details regarding the proposed licensing process and future regulation of tidal energy in Nova Scotia.

4.4.1 - THE REGULATORY AND ENVIRONMENTAL PROTECTION SYSTEM

As part of new legislation, a strong focus will be on the regulatory and environmental protection system. This system will focus on a staged, progressive, and adaptive approach to development and deployment of in-stream tidal devices.

Similar to the current system, the regulatory process will begin with a SEA to provide a broad understanding of the ecosystem and socioeconomic issues. Potential project developers will then be required to follow the Statement of Best Practice, which is currently under development. More information on the Statement can be found in section 4.2.10.

4.4.2 - LICENSING SYSTEM

The Province of Nova Scotia is currently developing a licensing process for tidal energy development to provide a clear, predictable, and efficient process. Currently, in order for project developers to proceed with developing a project on submerged provincial Crown land in the Bay of Fundy, a Letter of Authority or Crown Land Lease is issued by the province, as described in section 4.3.3. Once new Marine Renewable Energy Legislation is in place, a license will be the primary tool for defining project- or company- specific opportunities and obligations.

The licensing process will include two licensing streams—one for technology development and the other for commercial power development. The following is a description of each license type and criteria.

4.4.2.1 - TECHNOLOGY DEVELOPMENT LICENSES

Technology development licenses cover activities where the focus is mainly on technology-specific improvements to create reductions in electricity production costs. This could include medium-scale projects for developers testing prototypes, small-scale devices, and community projects. All such projects would be eligible for either the COMFIT or FIT rates. The distinction between technology development licenses issued for the testing and demonstration phases is summarized in Table 4-5.

Table 4-5: Technology Development License Details: Testing and Demonstration Phase

TECHNOLOGY DEVELOPMENT LICENSE		
	TESTING PHASE	DEMONSTRATION PHASE
Definition	Deployment of single device or series of small devices.	Acknowledged growth of activity and experience beyond levels permitted under the COMFIT program or deployment at FORCE.
Production Capacity	≤ 500 kW; for small devices connected to the distribution system. > 500 kW up to 5MW; for larger devices or arrays connected at the transmission level.	Arrays of devices under COMFIT, but > 500 kW (including future permits for arrays under COMFIT). Growth in activity for a COMFIT project beyond permitted levels (≈ 3 MW).
Requirements	Data for resource and environmental effects must be collected and made available to the government and the public as information to be considered in future regulatory filings.	Consultation regarding the timeline for technology improvements and number of devices needed to demonstrate significant cost-reductions. Prospects for development in NS and opportunities to advance the MRE strategy. Minister authority to set targets for the amount of electricity purchased. “Plans, commitments, and requirements ...” encompassing quantum of energy to be extracted and sold into the NS electricity market, proposed R&D plan leading to reduced generating costs in the future, and anticipated contribution to the development of the MRE sector.
Market Support	COMFIT Testing Rate for eligible entities for systems ≤ 500 kW connected at the distribution level. Current COMFIT rate as set by the UARB = \$0.652 per kWh (to be reviewed in 2014).	New COMFIT Demonstration Rate for eligible entities for systems ≤ 500 kW connected at the distribution level. Rate to be established by the UARB after consultations with small-scale developers concerning technology improvements and cost reductions (separately or as part of UARB’s 2014 review of COMFIT).
	FIT Testing Rate for devices > 500 kW up to 5MW for larger devices or arrays connected at the transmission level. The rate is to be determined by the UARB in 2012.	FIT Demonstration Rate for transmission connected devices that are greater than 500 kW up to a set amount. Rate for medium-scale projects will be set by the UARB, and DOE is working with industry to determine the scale of the project(s) needed to advance industry development. Province will provide “regulatory and licensing direction to ensure there is a proper balance” between the economic benefits of MRE development and the interests of ratepayers. Possible provincial assistance in the development of technology companies through investments by Innovacorp.

4.4.2.2 - POWER DEVELOPMENT LICENSE

Power development licenses cover large-scale, commercially-viable projects to provide grid-connected in-stream tidal power. The emphasis for this type of license is the demonstrated ability and willingness to commit “market-ready” technology to the development of a large scale, grid-connected tidal energy project up to 300 MW. Once the industry has reached the stage where developers demonstrate they are ready to pursue a project of this scale, a call for bids will be issued. The outcome of a successful bid process will be an exclusive license and Crown land lease providing rights to produce up to 300 MW of power. Both exclusivity and granting the right to develop the full capacity at the onset will be necessary for developers to secure the financing needed to complete a project of this scale. Similar to the Technology Development License, a phased approach will be used for the Power Development License, with three stages—investigation, demonstration, and commercial deployment. A description of the elements included in each stage of the license is provided in Table 4-6.

Table 4-6: Power Development License Details: Testing

REQUIREMENTS AT VARIOUS STAGES FOR POWER DEVELOPMENT LICENSES	
Investigation Stage	Proponents are required to file a Power of Development Project Plan addressing plans and commitments for: • Level of investment at all stages of the project. • Incorporating best-in-class technology, improving the state of technology and business knowledge in the MRE sector in NS, and deploying that knowledge from NS to outside markets. • Developing NS and regional “capacities and capabilities” for R&D, engineering, design, and manufacturing. • Monitoring and avoiding significant adverse environmental impacts. • Operating safely and adhering to best practices developed for the MRE sector. • Collecting and reporting of data concerning resource and environmental effects. • Progressing from the investigation stage through to a specific site for a demonstration and/or a market-ready commercial project. • Identifying market for energy to be supplied by the project. • Engaging the Mi’kmaq and the community. • Analyzing resource and geotechnical features to evaluate the suitability of a specific project site (within an area that has had a SEA). • Deploying devices to measure resources and environmental effects, and ensuring this data is available to the Government and the public.

Demonstration Stage	The Demonstration Stage of a Power Development License includes: • Deployment of an array of devices for the production of a set capacity at a site identified at the Investigation Stage. • Eligibility for market support mechanisms that are available under the Technology Development License. • Confirmation of the plans and commitments made at the Investigation Stage subject to any amendments permitted by the Minister of Energy due to a change in market, environmental, or technical conditions that take place in the Investigation Stage.
Commercial Deployment Stage	The Commercial Deployment Stage of a Power Development License includes: • Deployment of arrays at a site identified at the Investigation or Demonstration Stage. • Confirmation of the plans and commitments made at the Investigation Stage with further detail and experience gained during the Demonstration Stage. • A rate for electricity similar to competing renewable electricity sources available to the Nova Scotia market.

4.4.2.3 - TIDAL RANGE TECHNOLOGIES AND THE LICENSING PROCESS

Tidal range technology extracts energy from the rise and fall of the tide. This approach uses a holding basin and a dam, barrage, or lagoon structure. As these technologies may not be adaptable to an incremental approach and the staged nature of the licenses described above, the Government of Nova Scotia has provided some guidance as to how these projects may be considered in the proposed licensing process under new legislation (included in the Marine Renewable Energy Strategy, p. 40). Proponents will be required to:

- Demonstrate the project plans present no expected harm to other marine renewable resource opportunities. Evidence must be shown through robust and credible numerical and physical monitoring.
- Demonstrate that there are no expected significant adverse environmental or socioeconomic effects or impacts. Evidence must be shown through a robust independent environmental panel review.

Upon providing positive results and successfully completing these processes, a proponent would be eligible to receive a Power Development License under new Marine Renewable Energy Legislation.