OERA Marine Renewable Energy Strategic Environmental Assessment Cape Breton Coastal Region and Bras d'Or Lakes Phase II – Community Response Report

Community Response Report

Prepared for:
Offshore Energy Research Association of Nova Scotia
Suite 602, Bank of Montreal Building
5151 George Street
Halifax NS B3J 1M5

Prepared by:
Stantec Consulting Ltd.
102-40 Highfield Park Drive
Dartmouth NS B3A 0A3

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Project Synopsis

This Report describes and summarizes the outcomes of a stakeholder and community engagement program implemented as the second stage of the Strategic Environmental Assessment (SEA) on Marine Renewable Energy (MRE) for the Cape Breton Coastal Region and the Bras d'Or Lakes. It follows and complements the first element in this process, a Background Study on MRE potential and research gaps. The information and recommendations drawn from community and stakeholder input and presented in this Community Response Report will serve as a critical component providing input and support to the Background Study and the SEA.

The SEA engagement process was developed to obtain and document opinions, comments, issues or concerns and recommendations from citizens, stakeholders and Mi'kmaq community members throughout Cape Breton. Input obtained assisted the project team in identifying gaps in knowledge and developing recommendations to address them. This will assist in identifying potential impacts resulting from the future development of marine renewable technologies on communities, and the offshore and coastal environment. The SEA will be a support to the province to guide and inform decision making, direction, future research and policy in terms of MRE.

The consultation process undertaken between May and October 2013 included a number of meetings and open houses in both coastal and Bras d'Or locations. These included three meetings of a Stakeholder Roundtable (Roundtable), two meetings with the Mi'kmaq Community and four community open houses. In addition, access was provided to both online and hard copy surveys.

The purpose of the Roundtable was to work closely with the OERA and the project team to provide guidance and feedback on the SEA engagement process, collected data and information. The Roundtable consisted of 12 representatives of agencies, organizations, Mi'kmaq and interest groups who at the outset provided important guidance and issues identification to frame the consultation and subsequently contributed substantive feedback and refinement of issues and recommendations developed through the consultation, and ultimately to the draft Community Response Report.

The priority objectives of the community consultation and Mi'kmaq engagement process were to:

- Increase awareness and knowledge and to familiarize Cape Breton communities with the idea and nature of MRE and particularly of tidal in-stream energy conversion (TISEC).
- Provide access to results of the Background Report and research into potential ecosystem and socio-economic effects of MRE.
- Generate dialogue through an interactive, visual and engaging array of activities and mediums.
- Provide opportunities for community input and validation of this input over the course of the engagement process.
- Transparently gather record and analyze information, knowledge and concerns through the engagement process.

The consultation process largely accomplished these objectives especially by providing substantive input and insight into community and stakeholder attitudes towards the potential of MRE development in Cape

Breton. The process revealed a diverse range of opinions on a range of topics and highlighted a number of key themes, broadly held views and potential next steps:

- MRE is not well known or understood as a source of renewable energy including its technologies, scale or potential effects (adverse or positive). Most Cape Breton citizens are also not yet aware of preliminary MRE activity and proposed projects in their region. Therefore ongoing communication and education outreach initiatives should be instituted with communities and stakeholder groups.
- The overall concept of increasing sources of renewable energy is generally viewed favorably as an environmentally preferred option.
- MRE technologies are viewed as an acceptable renewable energy source in Cape Breton only if they can be deployed in ways that do not create negative effects in other valued aspects of Cape Breton's environment, industries or communities.
- The Bras d'Or Lakes are understood to be particularly sensitive, complex and distressed from a variety of impacts and therefore prospective MRE development and research in the Lakes must be especially rigorous and embody the precautionary principle. This perspective was most notably and consistently articulated by participants from Mi'kmaq communities which are closely proximate, connected and affected by the health of the Bras d'Or system.
- The potential of MRE should be further explored through environmental, socio-economic and technology research initiatives focused on priority information gaps and topics of concern, notably studies of fisheries and fish stocks, effects of MRE on those fisheries and stocks (commercial and Mi'kmaq food, social, cultural), broader ecosystem health, technology development and economic opportunity. Key features of the research program should be a Mi'kmaq Ecological Knowledge Study (MEKS) and include both general and site specific components. Research, and if feasible, project development should actively seek collaboration with Cape Breton institutions, businesses, communities and First Nations to optimize auxiliary benefits and economic opportunity. A more broadly based and comprehensive Cape Breton MRE Resource Assessment should be a priority.
- Mi'kmaq groups and organizations should be actively kept informed of activity regarding MRE in Cape Breton, engaged prior to strategic decisions and invited to participate in or have an ownership interest in appropriate research and development initiatives.

The consultation program stressed that the SEA is merely the first step in the process of assessing the potential impacts and benefits that could result from the development of MRE. There will an ongoing process of engagement, community input and research exploring and if feasible preparing to take advantage of MRE opportunities. The information gained through this consultation process will be used to inform those decisions and processes.

1.0 Introduction

Stantec Consulting was selected by Offshore Energy Research Association (OERA) to develop a Community Response Report (the "Report") on Marine Renewable Energy (MRE) as part of the Strategic Environmental Assessment (SEA) for the Cape Breton Coastal Region and the Bras d'Or Lakes. The SEA process consists of two elements: the Background Study and the Stakeholder and Community Engagement process which is the focus of this report.

The SEA engagement process was developed to obtain and document opinions, comments, issues or concerns and recommendations from stakeholders, Mi'kmaq and community members. Input obtained assisted the proposed project team in developing recommendations and identifying potential gaps in knowledge. The resulting community-based information will serve as input into the SEA for the Cape Breton Coastal Region and the Bras d'Or Lakes. It will assist in identifying potential impacts resulting from the future development of marine renewable technologies on communities and Nova Scotia's offshore and coastal environment. It is noted that while the SEA looks at a variety of MRE technologies the Provincial focus is on tidal in-steam energy conversion (TISEC) devices.

2.0 Key Objectives

The overall objective of the Cape Breton SEA is to provide an assessment and recommendations of social, economic and environmental effects and factors associated with potential development of MRE resources in the Cape Breton coastal region with an emphasis on in-stream tidal. The focus of the stakeholder and community engagement scope of work was to establish and convene Stakeholder Roundtable sessions, conduct community engagement sessions, support a stakeholder communications forum and prepare a final report.

The objectives of the consultative process were:

- Broad-ranging engagement with key interested parties including current users of the marine environments, coastal communities, aboriginal interests, government agencies, municipalities, community organizations, environmental/conservation organizations, business suppliers and energy developers, and their associations, and the general public, in written form and through public meetings.
- Development of an inclusive engagement process that enabled the participation of Mi'kmaq communities in Cape Breton.
- Communicating the purpose and objectives of the SEA; its key components and processes; its role as merely the initial step in exploring potential development of MRE in Cape Breton; and the primary interest in considering development of in-stream tidal technologies while not excluding a broader array of MRE options;

- Understanding the potential concerns, issues and general feedback regarding the development of MRE and in particular in-stream tidal in Cape Breton including the Bras d'Or Lakes.
- Enabling development of recommendations based on consideration of principles and priorities for deciding whether, where, and under what conditions MRE developments in the Cape Breton Region are in the public interest over the long term.

The key elements of the consultative process were to:

- Provide access to results of the SEA Background Report and research into potential ecosystem and socio-economic effects.
- Generate dialogue through an interactive, visual and engaging array of activities and mediums.
- Develop a conversation that is sincere, easily accessed, experienced and understood by individuals and diverse communities.
- Provide opportunities for community input and validation of this input over the course of the engagement process.
- Transparently gather record and analyze information, knowledge and concerns through the engagement process.
- OERA established a Participation Support Fund (PSF) to provide modest one time grants to community based groups and not-for-profit organizations in the Cape Breton region to undertake small research initiatives or seek expertise assistance to make technical submissions to the SEA process.[1]

The consultative process featured a few core messages:

- Participants were asked to help identify principles and priorities for deciding whether, where, and under what conditions MRE developments in the Cape Breton Region are in the public interest over the long term.
- The SEA is a first step in assessing the potential impacts and benefits that could result from the development of MRE. This information will be used to inform and educate where there may be potential opportunities for MRE development in Cape Breton based on scientific studies and stakeholder and community input.
- Further studies and consultation would be required prior to any project (small or large scale) being developed.

3.0 Methods

Throughout the engagement process, there were three meetings with the Stakeholder Roundtable (Roundtable), two meetings with the Mi'kmaq Community and four community open houses. The location and dates for these meetings are identified in Table 3.1.

[1] Note: One organization responded to the PSF application. The results of their study will be available via OERA website by March 2014.

Table 3.1 Meeting Dates and Locations

Meeting	Date	Location/Time
Initial Meeting with Stakeholder Roundtable	May 23, 2013	Wagmatcook 1 – 4 pm
Community Meetings Day #1	July 9, 2013	Chéticamp 1 – 3 pm Wagmatcook 7 – 9 pm
Community Meetings Day #2	July 10, 2013	Membertou 10 am – 12 noon Chapel Island 3 – 5 pm
Initial Meeting with Mi'kmaq	August 1, 2013	Eskasoni 12 noon – 3 pm
Interim Meeting with Stakeholder Roundtable	September 3, 2013	Grand Narrows 1 – 4 pm
Follow-up Meeting with Mi'kmaq	September 18, 2013	Eskasoni 12 noon – 3 pm
Presentation of Draft Report to Stakeholder Roundtable	September 23, 2013	Wagmatcook 1 – 4 pm

3.1 STAKEHOLDER ROUNDTABLE

The purpose of the Roundtable was to work closely with the OERA and Stantec and provide guidance and feedback on the SEA engagement process, collected data and information. The Roundtable consists of 12 representatives of agencies, organizations, Mi'kmaq and interest groups. The following people agreed to form the Roundtable:

- Ivan Doncaster, CB Regional Municipality Councillor
- Dana Morin, Fundy Tidal Inc. (alternate Greg Trowse)
- Donald Humphrey, Fisheries and Oceans Canada (alternate Jason Naug)
- Alan Howell, Nova Scotia Department of Energy
- Tom Gunn, NSCC Strait Highlands (alternative Jim MacDonald)
- Shelley Denny, Unama'ki Institute of Natural Resources (UINR)
- Kerry Prosper, Paq'tnkek First Nations Councillor
- Robin Stuart, Aquaculture Association of Nova Scotia
- Randy Pointkonski, Cape Breton Capital Venture / Grand Narrows Waterfront
- Bruce Hatcher, Cape Breton University (CBU), Bras d'Or Institute for Ecosystem Research Cape Breton (alternate Michael Orr, CBU and Martín Leguizamón, CBU)
- Susan King, Atlantic Coastal Action Plan Cape Breton (alternate Jared Tomie)
- Pat Bates, Bras d'Or Lakes Stewardship (alternate Jim O'Brien, Bras d'Or Lakes Stewardship)

Due to scheduling challenges not every member attended every meeting (details within appended meeting notes). In some cases alternates attended in lieu of the primary member, but at every stage the primary member was given opportunity to provide input either in person or through a written submission.

Roundtable Meeting 1 was held on May 23, 2013 at the Wagmatcook Cultural and Heritage Centre in Cape Breton. Nine of the Roundtable representatives were present at this meeting. There was also representation from OERA. Please refer to Appendix A for meeting minutes and attendee list.

A Background Report overview was presented which provided an overview of the key details of the report focusing on understanding the MRE technology, the potential MRE locations and the potential interactions associated with MRE development including opportunities and opposition.

Members at the Roundtable meeting were divided into two groups; one group focused on the coastal Cape Breton region and the other group the Bras d'Or Lakes and were asked to identify environmental and socio-economic concerns or issues and who or what might be impacted by the range of potential technologies and projects. The results of the discussions are provided in Section 4.0. Meeting notes from this meeting are provided in Appendix A.

A second Roundtable meeting was held on September 3, 2013 at the Grand Narrows Ferrymen's Hall in Cape Breton. Seven of the previous Stakeholders and two additional Stakeholders, Michael Orr (Cape Breton University) and Jim O'Brien (Bras d'Or Lakes Stewardship) were present at this meeting. There was also representation from OERA. Please refer to Appendix A for minutes and attendee list.

During this second meeting, Stantec provided the Roundtable an update of the community engagement activities that had occurred since the initial Roundtable meeting. This included a review of all comments received through community engagement organized by their source (Roundtable, community open house, Mi'kmaq meeting or online survey). In break out groups and plenary, Roundtable members discussed:

- Other issues or opportunities to add to the input list;
- Any issues or opportunities that they believed should be refined, prioritized or explored further;
- Issues or opportunities that they believed were inappropriate or out of place; and
- Recommendations for further research or other recommended actions to address issues.

The third and final Roundtable meeting was held on September 23, 2013 at the Wagmatcook Cultural and Heritage Centre attended by seven members or alternates, including first time in person, attendance by Dana Morin and Martín Leguizamón. The meeting included three primary elements:

1. Presentations and discussion on input received at the September 18th meeting of the Mi'kmaq Community and Elders;

2. A presentation by Dana Morin of Fundy Tidal Inc. and discussion regarding COMFIT technologies (<500kw), short and long term plans for FTI's COMFIT projects, tidal resource installed capacity potential in Cape Breton, background on research and processes regarding marine renewable technologies in Cape Breton and in the Fundy region, recommending a Mi'kmaq Ecological Knowledge Study (MEKS), and previous and projected Cape Breton feasibility and development activities.

3. A summary of the Draft Community Response Report with focus on key findings and recommendations.

These three segments were intended to contribute to the Roundtable's ability to provide substantive feedback on the Draft Community Response Report both at the meeting and potentially in written comments following the meeting.

With regard to the topics put forward from the recent Mi'kmaq meeting, the Roundtable acknowledged and agreed with the understanding that the Bras d'Or ecosystem is a complex and fragile system that has suffered a variety of negative ecological changes affecting habitat and species and resulting in a number of economic and social consequences. These changes, including significant reductions in commercial harvestable fish species, are important concerns whose specific causes are uncertain and multi-dimensional. They therefore agreed with the conclusion that a prudent precautionary approach to future development was paramount. They also support the view that Mi'kmaq representation and active engagement through all phases of MRE feasibility assessment and development was necessary. They broadened this view to recommend active representation and engagement with other community, organizational and governmental stakeholders.

The presentation and discussion by Dana Morin of Fundy Tidal Inc. stimulated considerable discussion. It enriched members' understanding of the history of MRE and especially in-stream tidal development in Nova Scotia and highlighted the constraints and challenges facing such development in Cape Breton especially in light of the modest tidal mean speeds and installed capacity potential (1.1MW in the Great Bras d'Or Channel and 0.6MW in the Barra Strait). At the same time Dana suggested that it was premature to reach any go-no go decisions regarding the feasibility of development in the region and particularly the Bras d'Or Lakes. This would need to consider a number of matters including the Strategic Environmental Assessment, the diverse and rapid evolution of <500kw in-stream technologies (which he outlined), a comprehensive Cape Breton tidal resource assessment and site characterization, other baseline ecological monitoring and research, continuing Mi'kmaq consultation, undertaking a Mi'kmaq Ecological Knowledge Study, project viability and modeling studies. These and other elements would likely unfold through 2018 and ultimately provide the basis for prospective developers to gauge the environmental, technical, financial, regulatory and interconnection feasibility of potential development.

The largest part of the meeting encompassed a review of the feedback received through the public engagement process and the draft recommendations contained within the Draft Community Response Report. This discussion resulted in a number of refinements to the Draft Report. Of course, no comments were intended or resulted in any changes to the substance of public or stakeholder inputs, but only contributed to clarity and nuance of expression to more precisely frame the descriptions and recommendations. Those modest adjustments are now contained in the subsequent Results section of this document.

3.2 MI'KMAQ COMMUNITY

The initial meeting with the Mi'kmaq Community was held on August 1, 2013. Approximately 22 Mi'kmaq Community members from a broad array of bands, fisheries and environmental services/research teams and businesses attended the initial meeting. The meeting was facilitated by Stantec with support from Eskasoni Corporate Division.

Approximately 40 groups or individuals identified by Alyssia Jeddore of Eskasoni Corporate Division in consultation with Melissa Nevin of the Kwilmu'kw Maw-klusuaqn Negotiation Office (KMKNO) were invited to this meeting. Invitations were communicated electronically and followed up by Ms. Jeddore by telephone. Prior to the meeting the Background Report was made available to prospective attendees through a website link or from Eskasoni Corporate Division. Copies of the Report's Executive Summary were available at the event as well as copies of the presentation materials and two reference copies of the full Report. Poster boards on easels were arrayed in the meeting room that displayed key information and provided post-it notes for input on the Background Report and on topics and issues identified by the Roundtable. An overview of the Background Report and of the stakeholder engagement process to date was presented by Stantec and accompanied by a power point presentation. The presentation and discussion addressed the following topics:

- What is a Strategic Environmental Assessment? (background, participation of stakeholders, recommendations to the provincial government)
- Overview of the MRE Background Report in support of the SEA
    - Understanding the MRE/tidal technologies
    - Operating parameters for each technology
    - Tidal resources in Cape Breton and Bras d'Or Lakes (six areas of interest)
    - Operating parameters researched for each Area (with key conclusions)
    - Potential physical process interactions (in each project/construction phase)
    - Potential biological component interactions (in each project/construction phase)
    - Potential socio-economic component interactions (in each project/construction phase)
    - Summary of opportunities and opposition (as noted in the Background Report and supplemented to date through consultation and Roundtable processes)
    - Recommendations (data and information gaps identified in the Background Report and some associated proposed mitigation measures); including undertaking a Traditional Ecological Knowledge Study
- The SEA consultation and engagement process (highlighting additional opportunities for engagement, to provide input and identify further research priorities) regarding both Mi'kmaq communities and Cape Breton in general.

The bulk of the meeting time was spent in discussion regarding MRE in Cape Breton with primary attention being given to the Bras d'Or Lakes region and in-stream tidal technologies. It included topics or questions of interest, issues, concerns, research gaps and opportunities from the Mi'kmaq perspective. In addition to notes taken at the meeting, attendees were given a survey template to record their written input. The display poster boards were organized by key issue topics and included a mechanism to record and post comments by topic area. All attendees participated actively in the discussion and most took advantage of one or both of the written input mechanisms.

Comments noted during this period are provided in Section 4.0. Meeting notes from this meeting are provided in Appendix B.

A second meeting was held with the Mi'kmaq Community and Elders on September 18, 2013. There were 14 Mi'kmaq attendees including five Elders who were especially invited from the five Cape Breton bands through a process coordinated by Unama'ki Institute of Natural Resources (UINR) and Elder Albert Marshall. Since there were a number of people participating for the first time, a concise background review was presented including a summary of a draft of this Community Response Report which had also been made available to invited participants electronically five days prior to the meeting.

During the course of the meeting there was considerable and active discussion involving both representatives of organizations and Elders, with responsive information provided by the Stantec facilitator and also David Miller who was attending in the context of his position as Aboriginal Consultation Coordinator Nova Scotia Department of Energy. The meeting focused on two primary issues – the fragility and complexity of the Bras d'Or ecosystem and the need for ongoing and more formal communication and consultation with Mi'kmaq organizations. Overall, while there was some diversity of views regarding the desirability of MRE development, there was deep common concern regarding protection of the Lakes, both the ecosystem generally and fisheries (Mi'kmaq food, social and commercial (FSC) and commercial), especially in light of legacy issues regarding poor management, excessive resource depletion and uncontrolled pollution. In light of the ecological fragility of the system attendees expressed the strong view that future MRE pilot or development activity should only progress if it adhered to the precautionary principle supported by prior rigorous and persuasive research. There was universal expectation of ongoing and early communication and engagement that afforded the Mi'kmaq every reasonable opportunity to influence decision-making and for beneficial participation in research and development initiatives including as developers or co-developers of MRE projects and related businesses.

The discussion of the Bras d'Or Lakes ecosystem and its value and significance to the Mi'kmaq and other Cape Breton citizens and visitors was discussed in depth. It was strongly stated and endorsed by all attending that this system is both complex and fragile, that it is currently vulnerable and highly stressed and that interactions from human and natural causes are not well understood. This has severely affected the system in a number of ways including regarding commercial fisheries. Significant depletion of fish stocks were pointed to including cod, herring, lobster and oyster. The causes of these depletions are not well understood with factors including overfishing, on-shore development related impacts, marine traffic, habitat destruction (from ongoing and former activities such as dragging) and invasive species. It was therefore presented that the priority in decision-making should be protection of the natural health of the

Bras d'Or system. Uncertain effects of new technological or equipment interactions should be explored carefully. Research and understanding of the effects of MRE technologies and processes have not substantively or comprehensively been addressed either within the Bras d'Or or even within similar systems as far as is known. Even effects from pilot projects and research activity could further stress the system. At the same time some participants expressed appreciation of the benefits of pursuing economic opportunity through alternative energy development for Cape Breton generally and specifically for Mi'kmaq communities. With these perspectives in mind the group indicated that substantive future research is necessary and any pilot programs should be cautiously guided by the precautionary principle. This should pertain to all future activities regarding any MRE development, and especially TISEC deployment within the Bras d'Or system. In the absence of persuasive research and information the preponderance of attendees expressed their baseline inclination to oppose MRE development within the Bras d'Or system. This discussion focused on TISEC technologies that could be placed in significant narrow channels although it was recognized that knowledge of the intrusive effects of other technologies such as tidal lagoons was unknown and therefore negative conclusions were not as strongly drawn.

Regarding the need for ongoing and advance communication, consultation and engagement with Mi'kmaq peoples and organizations, the concern was expressed that a pattern of strong and effective engagement should be established on an ongoing basis beyond this specific process. While appreciation was expressed for the early and comprehensive degree of engagement during this process it was recognized that this was a time and scope limited process without commitment to future process or mechanisms. Therefore it was proposed that immediate attention be directed to developing a mutually satisfactory commitment to communication and engagement potentially involving the OERA, the provincial government and other governmental levels. To this end it was suggested that the primary reference points be UINR and Bras d'Or Lakes Collaborative Planning Initiative (CEPI) which is a collaborative initiative of Cape Breton's Mi'kmaq Bands and municipal, provincial and federal governments. These groups should continue to be central points for dissemination of information and to ensure that Mi'kmaq peoples, organizations and Bands are reasonably engaged in discussions and decisions on topics that are central to their communities, culture and livelihoods. Further, it was stated that Mi'kmaq Bands, organizations, businesses and entrepreneurs should as a matter of principle be invited, encouraged, incented and in some cases supported to be actively involved and potentially hold ownership positions in prospective development and spinoff business opportunities. The representative of Project Team committed that the expressed concerns regarding the Lakes, and the principle of comprehensive, meaningful engagement would be well detailed and result in strong recommendations within the Community Response Report.

3.3 COMMUNITY OPEN HOUSES

There were four community meetings on July 9th and 10th 2013. The focus of the community meetings was to provide key project information to community members, obtain feedback on the Cape Breton Marine Renewables Background Study, identify potential issues or concerns, questions, opportunities and information gaps. The location and timing of these meetings is identified in Table 3.2.

Table 3.2 Community Meeting Schedule

July 9, 2013	July 10, 2013
St. Pierre Church Hall, Chéticamp 15 119 Cabot Trail Drive, Chéticamp Tuesday, July 9th, 2013 1:00 pm – 3:00 pm Presentation at 1pm and 2 pm	**Membertou Trade & Convention Centre** 50 Millard Street, Membertou Wednesday, July 10th, 2013 10:00 am – 12:00 noon Presentation at 10 am and 11 am
Wagmatcook Culture & Heritage Centre 10765 HWY 105, Wagmatcook Tuesday, July 9th, 2013 7:00 pm – 9:00 pm Presentation at 7 pm and 8 pm	**Chapel Island Community Hall** 21 Old Band Office Road Wednesday, July 10th, 2013 3:00 pm – 5:00 pm Presentation at 3 pm and 4 pm

The open house meetings consisted of short presentations, information storyboards and interactive storyboards to gain public feedback (as shown in Appendix C). Despite outreach by newspaper, radio and extensive email communication directly and through Roundtable members to relevant networks a total of 17 community members attended and signed into the community meetings. A few additional people attended but declined to sign in. Every attendee was spoken to and questions discussed individually.

The interactive storyboards provided an opportunity for community members to identify their concerns and provide their opinions of MRE development in Cape Breton. These storyboards focused on the four main areas identified during the Roundtable meeting: Commercial Fisheries; Fish and Fish Habitat; Tourism and Recreation; and Opportunities. The Project Team offered periodic power point as well as individual presentations. Comments noted during the community meetings are identified in Section 4.0.

3.4 ONLINE SURVEY

A community survey was developed to gain feedback from the public and organizations on Marine Renewable Energy (MRE) development in the Cape Breton Coastal Region and the Bras d'Or Lakes. The survey template is provided in Appendix D. There were eleven responses received through the online and hard copy survey. A summary of the responses are provided below in Section 4.0.

4.0 Results

There were four themes identified during the initial Roundtable meeting; including Commercial Fisheries, Fish and Fish Habitat, Tourism and Recreation and Socio-Economic Opportunities. These became the focus of further community engagement. These themes are discussed in further detail below.

4.1 COMMERCIAL FISHERIES

Commercial fisheries in the Cape Breton coastal area are important to the local communities and regional economies, and are of cultural and economic importance to individual fishermen (AECOM 2012). Potential interactions with the commercial fishery were seen as a priority concern as many of the areas of interest for MRE development are located within or near inshore and potentially offshore commercial fishing areas.

The concern most consistently raised was with regard to the uncertainty of interaction and effects related to MRE equipment and processes during the entire lifecycle of species. This was highlighted at the second Mi'kmaq Community meeting where it was stated that commercial fish stocks within the Bras d'Or ecosystem were currently distressed and a number of important fish stocks had severely declined in recent years. The group strongly supported the sentiment that these outcomes were related to changes in the complex and vulnerable dynamics within this contained and relatively closed system which has become increasingly fragile. Therefore further activities that could impact the system in unknown ways should be avoided. Even if it were clear that mature harvestable species would have little or no significant adverse interaction with MRE equipment or processes, there was concern that even subtle effects on aspects such as spawning patterns, larvae, parasites, plankton, and sediment transport or bait supply could negatively impact the health and stability of commercial species. For example an impact to the bait supply could affect the availability of fish used for the lobster fishery therefore impacting lobster yields.

Pursuant to these concerns, The Roundtable, the Mi'kmaq Community and other interested stakeholders all advocated that a precautionary approach should be paramount with regard to research, pilot studies and prospectively development, especially within the Bras d'Or system. This was related to the broadly held view that a priority for future research should be on understanding and evaluating the risks and associated environmental and economic costs related to interaction of MRE with the environment especially connected to interactions with commercial and FSC fisheries including spawning areas and bait supply areas. The participants in the Mi'kmaq Community meetings most strongly advocated the view that development in the Bras d'Or Lakes should be avoided unless there is persuasive evidence that activity can occur without negative impact. With this in mind, a number of informants expressed the view that prior to pilot projects that would interact with the Lakes' ecosystem, carefully designed research should be undertaken that would meet a high threshold of caution and contribute to knowledge of the ecology of the Bras d'Or while clarifying the potential and risks associated with MRE development.

A number of points were discussed by the Roundtable pertaining to the relative characteristics of the Bras d'Or region. The Roundtable concluded that it would be important to consider the relative scale of MRE development in the Bras d'Or and Cape Breton generally as part of future research, assessment and education regarding MRE development. The point was made that by comparison with potential development in the Fundy region the scale of development in Cape Breton and particularly within the Bras d'Or would necessarily be small. This could temper concerns regarding some potential impacts such as loss of habitat due to exclusion zones. Further it was stated that the nature of optimal in-stream tidal sites (fastest moving currents) would tend to locate them in areas of avoidance for fishers and recreational boaters. At the same time these faster moving currents often make exclusion zones impractical and would

require adequate depth to allow vessel passage. It was also noted that the lower currents actually required relatively larger turbine equipment to achieve minimal levels of generation.

Table 4.1 Commercial Fisheries Feedback Summary

Comment	Stakeholder Roundtable	Community Open Houses	Mi'kmaq Meeting	Online Survey
Concern with potential interactions with inshore and offshore fisheries (i.e., lobster and ground fisheries)	√			3
Concern with the interface between fish and mammals and any equipment being installed	√			
Important to understand the entire species life cycle	√			
Impacts to bait supply should be included in research related to fisheries	√			
Noise during all phases – impacts from noise in the ocean is not fully understood	√		√	
Marine transportation could be impacted	√			
Mi'kmaq peoples involvement is important	√		√	
Mi'kmaq fisheries study should be completed	√		√	
Fisheries studies should broadly encompass all fishing stakeholders	√			
Potential impacts on spawning areas	√	1	√	
The effects on commercial fishing could be significant. The socio-economic effects could also be significant.	√		√	
Recommend that a compensation plan be completed. (note: Roundtable caution that compensation plan discussion should be linked to defensible causality and change from baseline conditions)			√	
One marine animal that is caught for commercial fishing is snow crab - what are the interactions?			√	1
Change in vocation of fishers and opportunities for fisher's children (i.e., upgraded technology on fishers boats)	√			
Commercial fisheries within the Bras d'Or have been suffering – including cod, herring and other species. The reasons are not well understood. Further factors that affect the dynamics of this fragile system should be avoided. Precautionary principle should guide actions.	√		√	
There is a need for carefully designed research that would contribute to knowledge of the ecology of the Bras d'Or while clarifying the potential and risks associated with MRE development	√	√	√	√

NOTE: √ indicates that issue was raised in this setting or event. Number values indicate the number of responses received pertaining to the issue.

4.2 FISH AND FISH HABITAT

The broad topics of fish and fish habitat shared a number of overlapping concerns with those related to the commercial fishery. The most commonly noted concern with regard to fish generally was any potential barrier to fish movements, especially, inshore blocking of narrow channels significantly. This concern is focused in the Bras d'Or Lakes area where migratory fish are known to exist. Overall there was considerable discussion regarding the sensitivity of the Bras d'Or Lakes habitat. As a substantively closed and contained ecosystem it was recognized that the environmental, biological, hydrodynamic and geophysical characteristics and relationships within the Bras d'Or system are sensitive and complex. This system is widely appreciated as a unique and precious resource - aesthetically, culturally, socially, environmentally and economically. Many of its elements are not scientifically well understood and in particular the narrow channels or 'choke points' most likely to be of interest for MRE development point to uncertainties bearing on such critical features as flow of sediments, nutrients and other organisms including parasites, juvenile and mature species. Potential habitat alterations and vulnerabilities such as potential reduction in the tidal amplitude within the Bras d'Or were highlighted.

At the second Mi'kmaq Community meeting these concerns were stressed. This concern was largely focused on the potential effects of TISEC in the identified narrow channels. Since the research to date had not presented data on the potential of other technologies in the Bras d'Or, and the intrusiveness of technologies such as tidal lagoons was not understood, they were not addressed explicitly in this meeting.

In light of these concerns the participants at the second Mi'kmaq meeting generally endorsed the view that the fragile Bras d'Or ecosystem should not be asked to accommodate new activities with uncertain impacts and unknown cumulative and synergistic effects unless there was persuasive evidence that it could be done without further stressing the ecological system. Special attention should be given to the already compromised commercial and FSC fisheries. While interest was expressed in the economic opportunity and environmental benefits potentially associated with MRE development it had to be secondary to maintaining the health, economic and social benefits already endangered within the Bras d'Or system. Hearing the report from the second Mi'kmaq meeting the sense of the final Roundtable meeting was in accord, although more optimism was expressed that the modest size of equipment paired with careful research and assessment protocols could be developed that would advance ecological knowledge while allowing in situ pilot testing of equipment and technologies.

During the Roundtable meetings, in addition to topics related to physical barriers, a number of other potential primary and secondary disturbances with unknown consequences as a result of MRE development were noted. Primary concerns included both near field and far field habitat alteration effects largely associated with construction as well as interface between species and the installed equipment. Secondary disturbances include potential effects from electromagnetic (EM) fields, noise and vibration from equipment, and anti-fouling agents required for equipment maintenance. The importance of the FSC fisheries used by the Mi'kmaq was noted during the first Roundtable meeting and then re-emphasized during the meetings with the Mi'kmaq and the community surveys. The Mi'kmaq stressed that the FSC fishery is even more important than commercial fishing and that the FSC fishery was not adequately addressed in the Background Report. Additional studies are needed to understand this issue. At the first

Roundtable meeting, the UINR representative indicated that their organization had undertaken studies addressing the significance of the FSC fishery that had not been incorporated in the Background Report and which were available for reference. A Mi'kmaq Ecological Knowledge Study (MEKS) was recommended both by the Mi'kmaq Community and Roundtable. There was broad representation that a thoughtfully designed program of further research on key ecological and habitat parameters would be essential and that a substantive environmental effects monitoring (EEM) program to establish both baseline and potentially project lifecycle conditions would be of critical importance. The Roundtable and other informants suggested that these components should themselves be aspects of a more complete environmental and ecological resource and risk assessment so that alterations to ecosystem goods and services critical to communities were better understood and evaluated.

Table 4.2 Fish and fish Habitat Feedback Summary

Comment	Stakeholder Roundtable	Community Open Houses	Mi'kmaq Meeting	Online Survey
Potential impact to Glass Eel drift (west coast or all?) along the coast of Cape Breton	√			1
Concern with interface between fish and mammals and any equipment being installed	√			
Cable placement and movement concerns	√			
Electromagnetic (EM) fields	√			
Anti-fouling agents can be harmful (Note: A Roundtable member offered that current technologies had substituted benign agents)	√			
Equipment may contain hazardous materials that could enter the marine environment	√			
Vibration from (offshore) wind turbines may disturb marine wildlife	√	1	√	
Viability, extent or stability of fish habitat due to alteration or loss of habitat	√	1	√	1
Mi'kmaq peoples involvement is important	√		√	
Mi'kmaq fisheries study should be completed (Note: The Roundtable suggested that fisheries studies should be comprehensive to include all fisheries participants)	√		√	
Concern re introducing any barriers to fish movements, especially inshore if blocking narrow channels significantly	√	4	√	
Concern if any alteration of the currents and flow of nutrients	√		√	
Potential impacts on spawning areas		1	√	
Habitat alterations			√	

Comment	Stakeholder Roundtable	Community Open Houses	Mi'kmaq Meeting	Online Survey
The FSC fisheries are important. Even more important than commercial fishing for Mi'kmaq. The FSC fishery includes fish for food/social/ceremonial use.	√		√	6
Broad concern that the complex dynamics within the fragile Bras d'Or system could not and should not bear the uncertain impacts from new (MRE) activity.	√	√	√	
NOTE: √ indicates that issue was raised in this setting or event. Number values indicate the number of responses received pertaining to the issue.				

4.3 TOURISM AND RECREATION

Positive and negative tourism and recreation comments were received including comments on potential impacts related to the marketing, recreational or tourism experience, image and aesthetics associated with MRE. It was generally felt that there could be both economic costs and benefits. There were divergent opinions on whether or not the visual, noise or other sensory perceptions from MRE facilities, equipment and operations would be positive, neutral or negative with regard to tourism and recreation. There was some positive feedback noted during the Roundtable meeting that MRE development could create 'science tourism' and perhaps enhance the marine tourism industry and services around the Bras d'Or Lakes. Other potential concerns related to potential effects on specific activities such as diving, photography, and sailing or motor marine navigation and access.

Table 4.3 Tourism and Recreation Feedback Summary

Comment	Stakeholder Roundtable	Community Open Houses	Mi'kmaq Meeting	Online Survey
+/- Image aesthetics	√	1		3
Economic impacts	√	1		
Barra Strait is popular for diving	√			
Development may affect marine navigation (e.g., recreational boating)	√			
Could create 'science tourism'	√			
Research – may spark some research e.g., technology, marine life and ecology, etc.	√			
Further development of marine industry and enhancement of services around the lake viewed as potential benefit	√			
Public safety – potential hazards related to public venturing near equipment	√			
NOTE: √ indicates that issue was raised in this setting or event. Number values indicate the number of responses received pertaining to the issue.				

4.4 SOCIO-ECONOMIC OPPORTUNITIES

Various socio-economic opportunities were identified during community engagement such as local job potential, energy independence, price stability and a reduced reliance on fossil fuels.

At the same time concerns and uncertainties were expressed regarding the magnitude of economic opportunity, both short and longer term, both directly connected to MRE development or by virtue of various spinoff opportunities. The Roundtable suggested that the most significant economic potential could be the result of exportable products and services developed as an offshoot of research or technological innovation. This view also recognizes that the long term jobs potential directly associated with MRE project operations would typically be modest in so far as they would ordinarily require only small monitoring and maintenance operations. However, overall MRE development as an industrial sector in Cape Breton could lead to more substantial and long term economic and job opportunities either directly associated with MRE commercial, manufacturing or research enterprises or as economic spinoff activity in a variety of sectors. A number of related significant questions were discussed during the second Roundtable meeting that pertained to what was deemed one of the most important data gaps - the need for a comprehensive resource assessment. Such an assessment would among other aspects consider the magnitude of the prospective MRE resource, the costs and risks associated with development (as noted both environmental and socio-economic) and the return on investment to proponents, investors, financiers and host communities. It was noted that such a resource assessment itself would require a substantial investment by the province and/or proponents but in its absence there is insufficient information to inform an actionable business case for potential developers and response from stakeholders. Such a study itself would provide economic benefit for the region and those partner participants that could include academic, non-profit, private sector and Mi'kmaq collaborators.

Specific questions raised by both the Roundtable and other informants included the extent of front-end (design, planning and construction) job creation and business opportunity as compared to substantially more modest operational jobs and services, and the potential for any spinoff businesses. The potential effect of MRE development on power rates or price volatility (and in particular benefits within Cape Breton) was raised at community open houses and discussed by the Roundtable.

Table 4.4 Socio-Economic Opportunities Feedback Summary

Comment	Stakeholder Roundtable	Community Open Houses	Mi'kmaq Meeting	Online Survey
Cost of power to consumers/ratepayers	√			
Local jobs potential (most likely from export of products or services rather than from minimal long term operations and maintenance)	√	1	√	1
Positive or negative economic effects (if MRE development positively or negatively impacts tourism or recreational businesses)	√	1	√	

Comment	Stakeholder Roundtable	Community Open Houses	Mi'kmaq Meeting	Online Survey
Potential growth of research capacity at CBU, within other organizations, or within Nova Scotia	√			
Energy independence (contributes to regional self-sufficiency)		1		2
Price stability (from a new local energy source)	√	1		
Reduced reliance on fossil fuels		1	√	1
Opportunities for partnership, ownership or collaboration between Mi'kmaq and other institutional or business interests	√		√	

Note: √ indicates that issue was raised in this setting or event. Number values indicate the number of responses received pertaining to the issue.

5.0 Summary and Recommendations

Throughout the engagement process, there was a concerted effort to communicate, share information and invite participation. But there was only a modest response which was especially notable in the small numbers of open house and survey participants. We conclude (based on previous experience, our professional judgment and discussions with a number of local stakeholders) that two primary factors contributed to a lack of participation:

1. The topic is still of somewhat remote interest since most citizens are not yet aware of MRE activity and proposed projects in their region and the state of activity is still generally quite preliminary. Fundy Tidal (FTI) has received NS Department of Energy approval for a 500 kW COMFIT project in the Great Bras d'Or Channel and a 100 kW COMFIT project in Barra Strait. Both sites require an initial Tidal Energy Development Feasibility Study to examine the flow regime and determine if the site has potential for tidal energy development. Therefore neither of these projects is set to deploy equipment in the short term and it appears that most Cape Breton residents have had only limited media or communication exposure to the proposed projects due to their current early stage of development. It appears that the SEA process was the first time most Cape Breton residents have been directly engaged on the subject of MRE generally and in-stream tidal energy specifically. Analogous experience with other resource development initiatives suggests that citizen interest is typically low when the topic is perceived to be general, abstract or long-term, rather than concretely related to a specific project or regulatory/permitting outcome actively moving forward towards implementation.

2. The time period for consultation was necessarily concentrated through the summer months when it is typically more difficult to gain citizen attention.

The question was discussed at the second Roundtable meeting whether the low response rate affected the statistical significance of findings. The conversation recognized that the objective and nature of this consultation process led to a program design that was not intended to achieve statistically significant findings or polling. Such an objective would have required significantly more extensive outreach, communication and surveying. Rather, this initiative had the objective of identifying issues and topics of concern and interest and recommendations regarding potential areas for future research. With that as the goal the project did receive a number of meaningful, quality inputs to our process.

The diverse membership of the Roundtable brought together a well balanced mix of relevant skills and experience further enriched by inputs received from the strong participation of the Mi'kmaq Community and from other interested community members. Our assessment is therefore that this process did accomplish its core objective – a broad development and review of key issues and a basis for recommendations regarding future steps and research. These inputs are summarized above in Section 4.0. Recommendations developed as a result of the community engagement process and particularly through the deliberations of the Mi'kmaq Community and Roundtable focus on conducting additional research specific to the Cape Breton coastal region and Bras d'Or Lakes. Information gaps and recommendations provided by participants are identified in Table 5.1.

Table 5.1 Recommendations

Note: The following recommendations were developed based upon community and stakeholder input through the consultation process. It is recognized that decisions regarding future initiatives should consider information gaps or issues of concern and feasibility including resource constraints and the degree of power generation and economic potential. From those points of view, some of these recommendations may be deemed quite ambitious, requiring high degrees of time, effort and expense in the context of energy resource and economic potential. However the intent here is not to pass judgment on feasibility but rather, to indicate what would be required to satisfy the referenced gaps and concerns.

Reference Number	Information Gap or Issue of Concern	Recommendation
1	Insufficient data and knowledge regarding commercial and sport fisheries (stocks, patterns, sustainability etc.) within the Bras d'Or Lakes. Species including lobster, gaspereau, glass eel, snow crab and species associated ground fisheries were among the specific species of interest mentioned.	• Undertake more comprehensive studies of fisheries and fish stocks within the Bras d'Or region. This work should consider historical patterns and changes rather than merely static current data.
2	Background Report does not include sufficient information regarding the FSC fishery. For example on page 115 on Aboriginal Fisheries, this section doesn't adequately depict all the populations of all the species that are declining and their	• A Mi'kmaq Ecological Knowledge Study (MEKS) should be undertaken as part of the upcoming project development processes and which should substantively address the FSC fishery.

Reference Number	Information Gap or Issue of Concern	Recommendation
	relative importance to Mi'kmaq communities.	• Mi'kmaq groups and organizations should be actively engaged and participate in appropriate research and development initiatives. • As additional research becomes available on the FSC fishery within the Cape Breton coastal region and the Bras d'Or Lakes it should be included in the Background Report (or otherwise be made available).
3	Lack of understanding within communities and stakeholder groups of the nature, scale, technologies, issues and challenges associated with MRE in Cape Breton	• Initiatives to expand educational outreach should be undertaken (minimally educational materials should be made available) and prior to specific project proposals. • Develop a plan and program for communication, consultation and engagement with diverse stakeholder communities and interests. This program should include periodic community communication updates through a variety of media, further efforts to advise and interest Cape Bretoners of the opportunities to access online and printed educational materials, a pro-active community and stakeholder engagement initiative offered both by provincial agencies and by any potential project proponents. • Make the Community and Business Toolkit for Tidal Energy Development developed by Acadia Tidal Energy Institute widely available.
4	Insufficient environmental baseline information on the Bras d'Or Lakes.	• Conduct a review of data gaps and develop appropriate environmental and socio-economic research and baseline data acquisition programs. • As a priority within this program develop priority research requirements prior to authorization and deployment of pre-development in situ testing or pilot initiatives. R&S should prioritize environmental assessments addressing ecological health, resilience and adaptive capacity within the Bras D'Or system.
5	Insufficient information on habitat interactions including interface between commercial fisheries, spawning areas, bait supply etc. and any processes and equipment installed for the MRE development. This gap also pertains to other inputs to the Bras d'Or ecosystem such as residential or	• Develop near field and far field modeling protocols with attention both on likely specific MRE deployment sites and broad systemic interactions. • Expand ecological studies of the Bras d'Or ecosystem. • Consider both cumulative and

Reference Number	Information Gap or Issue of Concern	Recommendation
	agricultural nutrient and chemical runoff, on-site septic and commercial effluents, invasive species (such as green crab), growing seal populations,	synergistic effects. • Consider ecological risks and opportunities associated with MRE in closed systems such as the Bras d'Or. • Conduct additional research and monitoring of species near key proposed MRE developments.
6	Lack of understanding of the resource potential, risks, benefits and cost and overall business case for MRE in Cape Breton	• Develop a plan and implementation process for a Cape Breton MRE Resource Assessment. • Conduct research on the potential socio-economic effects (risk and opportunity) of MRE development in the Cape Breton area. • Conduct more detailed site specific geophysical, current and flow characteristic studies
7	The above noted uncertainties regarding interactions and dynamics within the Bras d'Or suggest precautionary principle with regard to MRE development within this region.	• Affirmation of primacy of precautionary principle to guide activities and further steps regarding MRE development in Cape Breton.
8	Need to further establish patterns of communication and participation of Mi'kmaq Bands and organizations	• Further and ongoing communication and consultation should be conducted with Mi'kmaq groups, with particular involvement of UINR and CEPI, to determine the most appropriate patterns of engagement and collaborative involvement in decisions regarding research and development affecting the Bras d'Or region. Include consideration of appropriate Federal, Provincial and Municipal relationships. • Mi'kmaq should be afforded every opportunity for beneficial participation in research and development initiatives including as developers or co-developers of MRE projects and related businesses or services.

Appendix A Stakeholder Roundtable Meeting Notes

Stakeholder Meetings

May 23, 2013 - Wagmatcook

September 03 2013 – Grand Narrows

September 23 2013 - Wagmatcook

Meeting Notes

OERA Stakeholder Roundtable 1 Summary

OERA Marine Renewable Energy SEA for the Cape Breton Coastal Region inclusive of the Bras d'Or Lakes / 121511133

Date/Time:	May 23, 2013 / 1:00 PM
Place:	Wagmatcook Cultural and Heritage Centre
Next Meeting:	September 3, 2013

This project is a Strategic Environmental Assessment (SEA) – evaluating the environmental and socio-economic features in relation to Marine Renewable Energy (MRE) for Cape Breton. The SEA is being completed in two parts; the background study and the community consultation component. The first step, Stakeholder Roundtable meeting 1, is to identify topics and concerns – and how much of a concern such topics are on a preliminary basis.

A Background Report overview was provided during the meeting which provided an overview of the key details of the report focusing on understanding the MRE technology, the potential MRE locations and the potential interactions associated with MRE development including opportunities and opposition.

Members at the roundtable meeting were divided into two groups; one group focused on the coastal Cape Breton region and the other group the Bras d'Or Lakes and asked to identify environmental and socio-economic concerns or issues and who or what may be impacted.

Offshore Group

Environmental issues identified included:

- Fisheries including the lobster and ground fisheries
- Potential impact to the Glass Eel drift along the coast of Cape Breton
- Interface between fish and mammals and any equipment being installed
- Noise especially during the construction phase
- Ice issues
- Marine Transport
- +/- Image aesthetics
- Cable placement and movement concerns
- Electromagnetic (EM) fields

Socio-Economic issues identified included:

- Cost to consumers/ratepayer
- Safety concerns
- First Nation FSC fishing.
- Marine Transport
- Local Jobs potential

Bras d'Or Lakes Group

Environmental issues identified included:

- Loss of FSC Fisheries.
- Noise emissions – effects on the species that live there, deter migration of fish from going into the area and going into the turbines.
- Impact to flow characteristics of the lake
- Unpredictable environment affected by barometric factors
- Anti-fouling agents can be harmful.
- Alteration to sedimentation transport
- Equipment may contain hazardous materials that could enter the marine environment

Socio-Economic issues identified included:

- The Barra Strait is popular for diving
- Development may affect nautical navigation
- +/- effect on tourism
- Could create 'science tourism'
- Research – may spark some research e.g., technology, marine life and ecology, etc.
- A positive is further development of marine industry and enhancement of services around the lake

Next, as part of this Consultation process, Stantec is planning on hosting four community meetings. The meetings will be held at Cheticamp, Wagmatcook, Membertou and Chapel Island. Meeting Dates and locations will be sent to the Roundtable members. Roundtable members are encouraged to pass along meeting details, as well as community survey details through their networks. The next Stakeholder Roundtable Meeting will be held September 3rd, 2013.

Meeting Minutes

OERA Stakeholder Roundtable 2

OERA Marine Renewable Energy SEA for the Cape Breton Coastal Region and the Bras d'Or Lakes / 121511133

Date/Time:	September 3, 2013 / 1:00 PM
Place:	Ferryman's Hall
Next Meeting:	September 23, 2013
Attendees:	Alan Howell, NS Department of Energy Jason Naug, DFO Ivan Doncaster, CBRM Councillor Bruce Hatcher, CBU Shelley Denny, Unama'ki Institute of Natural Resources Randy Pointkonski, Cape Breton Capital Ventures Jared Tomi, Atlantic Coastal Action Plan Jim O'Brien, Bras d'Or Lakes Stewardship Society Michael Orr, CBU Jennifer Pinks, OERA Marty Janowitz, Stantec Christine Jeans, Stantec
Absentees:	Dana Morin, Fundy Tidal Inc. Kerry Prosper, Paq'tnkek First Nations Robin Stuart, Aquaculture Association of Nova Scotia Tom Gunn, NSCC
Distribution:	Above

Item:

The second Roundtable meeting was held on September 3, 2013 at the Grand Narrows Ferrymen's Hall in Cape Breton. Seven of the previous Stakeholders and two additional Stakeholders, Michael Orr (Cape Breton University) and Jim O'Brien (Bras d'Or Lakes Stewardship) were present at this meeting. There was also representation from OERA.

During this second meeting, Stantec provided the Roundtable an update of the community engagement activities that had occurred since the initial Roundtable meeting. This included a review of all comments received through community engagement organized by their source (Roundtable, community open house, Mi'kmaq meeting or online survey). Feedback provided through community engagement was focus into four areas; commercial fishery, fish and fish habitat, tourism and recreation, and socio-economic.

Roundtable members discussed in break out groups and plenary:

- Other issues or opportunities to add to the input list;
- Any issues or opportunities that they believed should be refined, prioritized or explored further;
- Issues or opportunities that they believed were inappropriate or out of place; and
- Recommendations for further research or other recommended actions to address issues.

Issues, concerns and opportunities identified during the meeting for each of the four categories is provided below.

Fish and Fish Habitat:

- Habitat alterations
    - Add in near field and far field effects
    - Location specific effects
- Split into Bras d'Or vs. Coastal environment
    - Further subdivide w/info on the commercial fishery, FSC fishery and ecosystem services
- EM Fields
- Noise from equipment

Tourism and Recreation

- Reduced/Increased Economic Benefit
- Impacts on recreational boating and sailing
- Public safety
    - Potential hazards related to public venturing near equipment

Commercial Fishery

- Interactions with
    - Nearshore fisheries
    - Offshore fisheries
- Interactions between species and equipment install (entire life cycle) and forage
    - Include spawning areas and bait supply
- Noise produced during all phases
- -/+ positive effects on species including abundance and diversity or installations
- Marine transportation
- Mi'kmaq participation
- Mikmaq fisheries study (holistic approach) via MEKS with FSC & recreational and effects on habitat and compensation plan
- Diversification of vocations/services of commercial fishers with regards to renewables

Socio-Economic

- Accurate documentation of cost/benefits of renewables and what that means to consumers and ratepayers
- Local job potential should be quantified, if possible
- Potential +/- impacts on other sectors
    - Tourism
    - Recreation
- Local vs. global and price stability and independence from fossil fuels
- Societal Investment (Capacity Building)
    - Community
    - Education
    - Research and development
    - Capacity building of biosphere reserve

Input provided during the Stakeholder Roundtable meeting will be captured in the Community Response Report.

The meeting adjourned at 3:00 PM
The foregoing is considered to be a true and accurate record of all items discussed. If any discrepancies or inconsistencies are noted, please contact the writer immediately.

STANTEC CONSULTING LTD.

Marty Janowitz
Project Manager
Phone: (902) 468-7777
Fax: (902) 468-9009
Marty.Janowitz@stantec.com

Meeting Minutes

OERA Stakeholder Roundtable 3

OERA Marine Renewable Energy SEA for the Cape Breton Coastal Region and the Bras d'Or Lakes / 121511133

Date/Time:	September 23, 2013 / 1:00 PM
Place:	Wagmatcook Heritage and Cultural Centre
Next Meeting:	N/A
Attendees:	Alan Howell, NS Department of Energy Jason Naug, DFO Ivan Doncaster, CBRM Councillor Martín Leguizamón, CBU (as alternate to Bruce Hatcher) Jared Tomie, Atlantic Coastal Action Plan Cape Breton Jim O'Brien, Bras d'Or Lakes Stewardship Society Dana Morin, Fundy Tidal Inc. Marty Janowitz, Stantec
Absentees:	Kerry Prosper, Paq'tnkek First Nations Randy Pointkonski, Cape Breton Capital Ventures Shelley Denny, Unama'ki Institute of Natural Resources Robin Stuart, Aquaculture Association of Nova Scotia Tom Gunn, NSCC Strait Highlands
Distribution:	As above.

Item:

The third and final Roundtable meeting was held on September 23, 2013 at the Wagmatcook Cultural and Heritage Centre attended by seven members or alternates, including first time in person, attendance by Dana Morin and Martín Leguizamón. The meeting included three primary elements:

1. Presentations and discussion on input received at the September 18th meeting of the Mi'kmaq Community and Elders;

2. A presentation by Dana Morin of Fundy Tidal Inc. and discussion regarding COMFIT technologies (<500kw), short and long term plans for FTI's COMFIT projects, tidal resource installed capacity potential in Cape Breton, background on research and processes regarding marine renewable technologies in Cape Breton and in the Fundy region, recommending a Mi'kmaq Ecological Knowledge Study (MEKS), and previous and projected Cape Breton feasibility and development activities; and

3. A summary of the Draft Community Response Report with focus on key findings and recommendations.

These three segments were intended to contribute to the Roundtable's ability to provide substantive feedback on the Draft Community Response Report both at the meeting and potentially in written comments following the meeting.

With regard to the topics put forward from the recent Mi'kmaq meeting, the Roundtable acknowledged and agreed with the understanding that the Bras d'Or ecosystem was a complex and fragile system that has suffered a variety of negative ecological changes affecting habitat and species and resulting in a number of economic and social consequences. These changes, including significant reductions in commercial harvestable fish species, are important concerns whose specific causes are uncertain and likely multi-dimensional. They therefore agreed with the conclusion that a prudent precautionary approach to future development was paramount. They also support the view that Mi'kmaq representation and active engagement through all phases of MRE feasibility assessment and development was necessary. They broadened this view to recommend active representation and engagement with other community, organizational and governmental stakeholders.

The presentation and discussion by Dana Morin of Fundy Tidal Inc. stimulated considerable discussion. It enriched members' understanding of the history of MRE and especially in-stream tidal development in Nova Scotia and highlighted the constraints and challenges facing such development in Cape Breton especially in light of the modest tidal mean speeds and installed capacity potential (1.1MW in the Great Bras d'Or Channel and 0.6MW in the Barra Strait). At the same time Dana suggested that it was premature to reach any go-no go decisions regarding the feasibility of development in the region and particularly the Bras d'Or Lakes. This would need to consider a number of matters including the Strategic Environmental Assessment, the diverse and rapid evolution of <500kw in-stream technologies (which he outlined), a comprehensive Cape Breton tidal resource assessment and site characterization, other baseline ecological monitoring and research, continuing Mi'kmaq consultation, undertaking a Mi'kmaq Ecological Knowledge Study, project viability and modeling studies. These and other elements would likely unfold through 2018 and ultimately provide the basis for prospective developers to gauge the environmental, technical, financial, regulatory and interconnection feasibility of potential development.

The largest part of the meeting encompassed a review of the feedback received through the public engagement process and the draft recommendations contained within the Draft Community Response Report. This discussion resulted in a number of refinements to the Draft Report. Of course, no comments were intended or resulted in any changes to the substance of public or stakeholder inputs, but only contributed to clarity and nuance of expression to more precisely frame the descriptions and recommendations. Those modest adjustments are now contained in the subsequent Results section of this document.

Significant discussion points and suggestions made at the meeting included:

- The current ecological fragility of the Lakes is the result of a variety of long time practices and factors, only some of which are well understood;
- Perhaps a test pilot project would be possible – in lake testing within this environment, done with a precautionary approach;
- A sensitive ecosystem requires ongoing environmental monitoring;
- The Lakes context is unique and sensitive and offers both challenges and opportunities for small-scale tidal development but there are many legitimate concerns and considerations;
- Have similar technologies been deployed in other similar settings? No close analog was suggested. Some of the TISEC technologies being discussed or considered are still in a developmental phase. Further research and development related to these technologies will be necessary before a machine can be put in place;
- Distance, capacity and access to the electrical grid are significant limiting factors in determining project viability. In some cases, particularly for small projects, line extensions may be prohibitively expensive;

- The implementation of a more complete, detailed and comprehensive Cape Breton Tidal Resource Assessment (with reference to the Cape Breton Resource Assessment, August 2012) and Site Characterization Studies (micro-siting level) would be an important step to determine project feasibility;
- Carey Point is a passage that already has considerable vessel traffic, strong currents and therefore limited maneuverability;
- There is no three phase power currently in Iona;
- Low current speed in the Bras d'Or straits is the major limiting factor in the scale of development;
- A 100 kWh project at Barra would supply electrical needs of approximately 40 homes;
- Participation and engagement of local communities and especially of Mi'kmaq communities will be essential in any development process;
- Investment in research and development will be required to support future industry growth for MRE in Nova Scotia. Small-scale tidal projects such as being looked at in Cape Breton may be viable on a community level but further research in technology development, and environmental and biophysical interactions will be required for this early stage industry;
- Collaborative efforts involving research and academic institutions, governments, project developers and First Nations will be critical. This will require significant funding outside of project budgets;
- There are opportunities to create linkages and collaborative sharing of expertise across the region and beyond; and
- Small-scale tidal projects won't create many long term jobs since ongoing needs for maintenance and monitoring are quite modest. But supply chain, technology development and research opportunities could be a genuine opportunity in the region for labour force enhancement.

The meeting adjourned at 4:00 PM
The foregoing is considered to be a true and accurate record of all items discussed. If any discrepancies or inconsistencies are noted, please contact the writer immediately.

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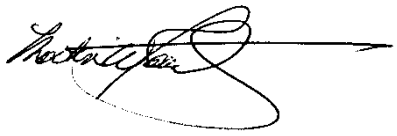

Marty Janowitz
Project Manager
Phone: (902) 468-7777
Fax: (902) 468-9009
Marty.Janowitz@stantec.com

Appendix B Mi'kmaq Meeting Notes

Mi'kmaq Meetings

August 01 2013	Eskasoni
September 18 2013	Eskasoni

Meeting Notes

OERA Mi'kmaq Meeting #1

OERA Marine Renewable Energy SEA Phase II for the Cape Breton Coastal Region and the Bras d'Or Lakes / 121510333

Date/Time:	August 1, 2013 / 12:00 PM
Place:	Crane Cove Seafoods Boardroom, Eskasoni
Next Meeting:	TBD
Attendees:	Albert Marshall Joseph Phillips, We'koqma'q Fishery John Googoo, We'koqma'q Fishery Storm Gould, We'koqma'q Fishery Dakata Gould, We'koqma'q Fishery Melissa Nevin, KMKNO Dean Denny, EFWC John T. Johnson, EFWC Lance Paul, Membertou Natural Resources Lorraine Marshell, UINR John Coutuice, UINR Peter Marshall, EFWC Keith Christmas, UINR Angela Denny, UINR George Christmas, Membertou Natural Resources Blake Christmas, Membertou Natural Resources Kosalinde Christmas, Membertou Natural Resources Benedict Joe, Membertou Natural Resources Lisa Young, UINR Terry Denny, Chapel Island Fisheries Charles Doucette, Potlotek Fisheries Richard Young, Eskasoni Renewable Energy Jordan Nikoloyuk, APC Alyssia Jeddore, Eskasoni Corporate Division Marty Janowitz, Stantec Consulting
Absentees:	N/A
Distribution:	OERA Stantec Consulting Eskasoni Corporate Division

Item:

Introductions

The meeting was convened following a buffet lunch. Marty Janowitz presented and facilitated and Alyssia Jeddore recorded comments. The meeting began with a Prayer offered by Albert Marshall. Marty Janowitz then welcomed and thanked attendees for participating. All attendees introduced themselves and their primary organizational affiliations. Marty then gave an introduction to OERA, and briefly explained the

purpose and hoped for outcomes of the meeting – which were primarily to share information on the Strategic Environmental Assessment, marine renewable energy technologies and other information included in the AECOM SEA Phase I Background Report and the primary objective to receive input on issues and topics of concern or importance, and further research needed with regard to marine renewable energy potential projects in Cape Breton. Marty also highlighted the inclusion and participation of two Mi'kmaq representatives on the Stakeholder Roundtable.

Presentation

Marty then presented a power point overview of all the points above, similar to that previously presented to the Stakeholder Roundtable. It included an overview of the SEA process, highlights of the Background Report such as introduction to applicable technologies, areas of interest and mapping of potential MRE areas, operating parameters for site suitability, and physical, biological and socio-economic component interactions. The presentation was punctuated by considerable conversation and questions throughout. There was strong participation from many attendees and the points raised are included in the notes below.

Marty also pointed to the series of poster boards on easels displayed within the room and invited attendees to examine them and raise further questions after the formal presentation. He described the opportunity to apply to the Participant Support Fund, and the online community survey and also distributed hard copies of a tailored Community Survey which was filled out on the spot by a number of attendees.

Following the formal presentation there was a period of approximately 30 minutes during which attendees raised and discussed a number of topics of concern. The tone was entirely cordial and constructive. Then attendees were invited to note specific concerns on post-it notes that had been provided for that purpose and to attach them to one of four easels highlighting the primary issue areas identified by the Stakeholder Roundtable – Fish and Fish Habitat, Commercial Fisheries, Tourism and Recreation, and Socio-Economic Opportunities. A number of such comments were posted. The meeting concluded with a thank you to participants and description of further steps in the consultation process including a prospective second meeting with Mi'kmaq representatives.

Following the formal meeting Marty stayed for a number of casual conversations that ensued with participants. The entire period of engagement was approximately 3 hours.

Comments Noted During Meeting

During the meeting it was stressed that the food fisheries is important, even more important than commercial fishing. The food fishery includes fish for food/social/ceremonial use.

The Mi'kmaq also inquired to the level of effort will be put forth to include the 2 sciences, Traditional Knowledge (Aboriginal Science) and Western Science. Additional studies should be done to determine how the various technologies could impede on how the water moves into the Bras d'Or as it is a very unique lake and the system is different from other lakes. It is important to understand what the effects will be to fish and fish habitat. For example, What precautions are taken? What effects will paint

have? What will the sound of them do to the fish? How many decibels of sound will they produce? We want to know the exact decibels all these technologies will produce; will there be detailed acoustic modeling? One of the main concerns is the alternation of the currents and flow of nutrients. Research should be done to study the flow of currents which will affect the shellfish.

The effects of commercial fishing could be very great. The effects on socio-economic effects could be significant. The Mi'kmaq would like to see a compensation plan done. One marine animal that is caught for commercial fishing is snow crab, if all of a sudden the snow crabs are dying off due to the effects of any marine renewable energy project. There are various commercial fishing industries we have licensing in. We want to see accurate compensation. In snow crab alone Eskasoni catches millions of pounds, looking at how this industry could be affect we should ensure we are compensated if we do not have this income anymore due to the negative effects from any one project.

Understanding what kind of jobs will be created from this type of project and if the Mi'kmaq could expect some to be given to Mi'kmaq people is important. Would like to have a guarantee that the jobs will be in Cape Breton or given to local people. There could be subcontractors from other areas/regions who get the work and where would that leave us. They should include some form of Aboriginal hiring policy.

The Mi'kmaq would like to be included in all aspects of the process and not viewed at as participants after the fact and want to be real and meaningful participates with everything. Traditional Knowledge is based on what they have learned over a life time. The person must be from the geographical area to have intimate knowledge of the area. Recommended that a Mi'kmaq Ecological Knowledge Study is part of the process.

UINR has done lots of research which is available on their website. Especially on salmon and eels, habitat, as well as mapping the bottom of the Bras d'Or Lake. This research should be reviewed by the government and included in the reports. We would like to see Aboriginal Research done by UINR, Universities and DFO.

Special Note: Prior to the presentation (during the lunch period) Marty Janowitz and Alyssia Jeddore had a substantive discussion with Albert Marshall. Albert is an Elder of the Mi'kmaq but did not wish to seen at this meeting as attending as an Elder since he felt that the Elders had not been properly invited to the meeting. He did not point any blame at OERA or Stantec as he was aware that we had followed guidance provided by Eskasoni Corporate Division and that Alyssia had herself solicited guidance from her most senior supervisor. Albert felt that the situation reflected larger trends within his community that marginalized Elders and sought their participation in events as more of figureheads than substantive advisors without genuine authority or full respect. He therefore indicated that he could not participate as an Elder just so that it could be noted that Elders had attended. Further he said that the appropriate form for inviting Elders from the five Cape Breton communities should include the offering of a gift as a sign of respect and that while traditionally such a gift might be in forms such as tobacco in more recent times would be in the form of cash. Marty apologized and indicated that no slight was intended without in turn pointing blame to our Mi'kmaq advisors which Albert alluded to. Marty said that he could not on his own decide if another meeting with Elders would be possible either in conjunction with or sequential to another broader meeting and if so, if OERA would be able to offer honorariums, but

did promise to raise the matter with OERA for consideration. Following the meeting Marty sent a special thank you to Albert for attending. He was a particularly active participant in the meeting raising a number of points and questions but he did not sign his name onto the participant attendance list.

Comments Provided on Storyboards

Commercial Fisheries:

- Mi'kmaq peoples involvement
- Mi'kmaq fisheries study should be completed

Fish and Fish Habitat

- Birds (wind) and marine mammals (diving birds)
- Compensation to the loss of fisheries relating to food, social and ceremonial fishery as a result of marine energy initiatives in Cape Breton
- Mi'kmaq participation in research
- Should involve Mi'kmaq communities in studies
- Is this consultation for the sake of saying it's consultation or is it just like the forest biomass mess all over again?
- Concerned about noise, heat, and vibration generated with these MRE which may affect marine and land wildlife
- Mi'kmaq peoples involvement
- Water is 10X more sensitive to fish and biological life. Therefore, extensive study is required. Each energy producing technology varies and within each developer will also vary.
- Would the EMF have any effect on the fish?
- How can project proponents be held responsible or required to assess/monitor cumulative impacts? How can project-based EA process require consideration of cumulative impacts?

Socio-economic Opportunities

- Mi'kmaq peoples involvement

Tourism and Recreation

- Mi'kmaq peoples involvement

Closing

As indicated the tone of the meeting was positive and constructive. Many voices were heard and having such a robust group encouraged active participation both with the facilitator and with each other. The impression gained was that attendees appreciated the opportunity and felt 'heard' during the event. There were some positive expressions that issues of concern to them had already been recognized and were included in outcomes from the Stakeholder Roundtable and previous community meetings.

The formal meeting adjourned at 2:20 PM
The foregoing is considered to be a true and accurate record of all items discussed. If any discrepancies or inconsistencies are noted, please contact the writer immediately.

STANTEC CONSULTING LTD.

Marty Janowitz
Project Manager
Marty.Janowitz@stantec.com

Attachment: N/A

c. Jennifer Pinks
Nalani Perry
Christine Jeans

Meeting Minutes

OERA Mi'kmaq Meeting #2

OERA Marine Renewable Energy SEA Phase II for the Cape Breton Coastal Region and Bras d'Or Lakes / 121511133

Date/Time:	September 18, 2013 / 12:00 PM
Place:	Crane Cove Seafoods Boardroom, Eskasoni
Next Meeting:	NA
Attendees:	Stephen Christmas Albert Marshall Cameron Paul Melissa Nevin Anthony Morris Rosalind Christmas Leonard Paul Lisa Young David Miller, NS Energy Murdena Marshall Kim Paul Charlie Dennis Richard Young George Christmas Amanda Marshall Marty Janowitz, Facilitator
Absentees:	NA
Distribution:	NA

Item:

Introduction

The meeting was convened following a buffet lunch. Marty Janowitz presented and facilitated and Amanda Marshall recorded comments. The meeting began with a Prayer offered by Murdena Marshall. Marty Janowitz then welcomed and thanked attendees for participating. He offered special thanks to the five Elders of the Mi'kmaq who were attending thanks to the invitations coordinated by UINR and Elder Albert Marshall. He then proceeded with a powerpoint presentation starting with a recap of the August 1st meeting. Since there were a number of people participating for the first time, a concise background review was presented.

During the course of the meeting there was considerable and active discussion involving both representatives of organizations and Elders, with responsive information provided by the Stantec facilitator and also David Miller who was attending in the context of his position as Aboriginal Consultation Coordinator Nova Scotia Department of Energy. The meeting focused on two primary issues – the fragility and complexity of the Bras d'Or ecosystem and the need for ongoing and more formal communication and consultation with Mi'kmaq organizations. Comments raised during this time are provided below.

Comments Noted During Meeting

Most were concerned about fish and fish habitat; and referred to Commercial Fishery Feedback. It was noted that it is hard to picture anything going into the Bras d'Or Lakes, because the ecosystem has been too fragile, and anything foreign can devastate the lakes. The balance scale is tipped. The lakes have lost oyster

populations due to foreign disease, and lobster, cod, and herring populations are down. The situation is extremely sensitive. Balance would be severely disrupted if anything else goes in the Bras d'Or Lakes.

Research and understanding of the effects of MRE technologies and processes have not substantively or comprehensively addressed either within the Bras d'Or or even within similar systems as far as is known. Even effects from pilot projects and research activity could further stress the system. Therefore the group concluded that it was highly concerned and negative towards any MRE development within the Bras d'Or system which they were prepared to strongly resist in the absence of unequivocal and persuasive contrary research and information.

Recommendations put forth by the group included:

- Develop more baseline information
- More substantial detailed study
- Specific studies based on the specific proposed project (if there was one)
- Impact assessment
- Point made by group: The conditions here (Bras d'Or Lakes) are different than in an open environment.
- Mi'kmaq should be given more recognition in any impact assessment

A trust-like relationship is recommended. The continued involvement of Mi'kmaq is necessary. We have to include all the variables so we don't come back to step 1 - holistic. A TEK (a Mi'kmaq Traditional Environmental Knowledge) study should be part of this process, UINR should have a key role in what may come. The elders of the 5 Mi'kmaq communities rely on the knowledge of UINR. Therefore it was proposed that immediate attention be directed to developing a mutually satisfactory commitment to communication and engagement potentially involving OERA, the provincial government and other governmental levels. To this end it was suggested that the primary reference points be the Unama'ki Institute of Natural Resources (UINR) and Bras d'O Lakes Collaborative Planning Initiative (CEPI) which is a collaborative initiative of Cape Breton's Mi'kmaq Bands and municipal, provincial and federal governments.

The meeting was highly participatory with input from representatives of organizations framed within the broad insight and wisdom offered by members of the attending group of Elders.

The meeting adjourned at 3:00 PM
The foregoing is considered to be a true and accurate record of all items discussed. If any discrepancies or inconsistencies are noted, please contact the writer immediately.

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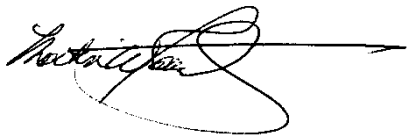


Marty Janowitz
Project Manager
Phone: (902) 468-7777
Fax: (902) 468-9009
Marty.Janowitz@stantec.com

Appendix C Community Open House Material

Community Meetings

July 9	Chéticamp
July 9	Wagmatcook
July 10	Membertou
July 10	Chapel Island

Marine Renewable Energy Strategic Environmental Assessment for Cape Breton Coastal Regions and the Bras d'Or Lakes

1

Overview:

What is the project?

The Offshore Energy Research Association (OERA) is preparing a Marine Renewable Energy Strategic Environmental Assessment (SEA) for the Cape Breton Coastal Region of Nova Scotia, including the Bras D'Or Lakes.

What is a Strategic Environmental Assessment?

A Strategic Environmental Assessment or SEA is an environmental assessment process carried out before decisions have to be made about specific projects. It seeks participation of a wide range of community members, stakeholders, and Mi'kmaq representatives, and will result in recommendations to the provincial government on whether, where and how to develop marine renewable energy in Cape Breton.

The SEA process consists of two elements: the Background Study and the Stakeholder and Community Engagement process. The Background Study was prepared by AECOM and is available for public viewing online. Stantec Consulting was selected to conduct the community engagement process.

What is the objective of the SEA?

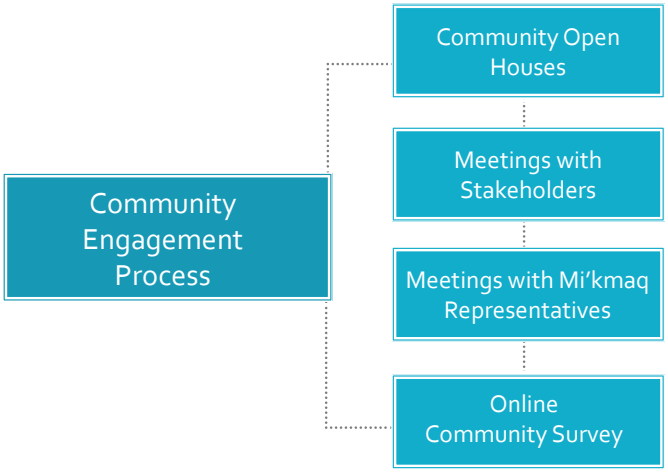
The overall objective of the Cape Breton SEA is to provide an assessment and recommendations of social, economic and environmental effects and factors associated with potential development of MRE resources in the Cape Breton coastal region with an emphasis on in-stream tidal.

Marine Renewable Energy Strategic Environmental Assessment for Cape Breton Coastal Regions and the Bras d'Or Lakes

2

Community Engagement Process:

The SEA engagement process has been developed to obtain opinions, comments, issues or concerns and recommendations from community members, stakeholders, and Mi'kmaq representatives. Input will assist in developing recommendations and identifying potential gaps in knowledge.



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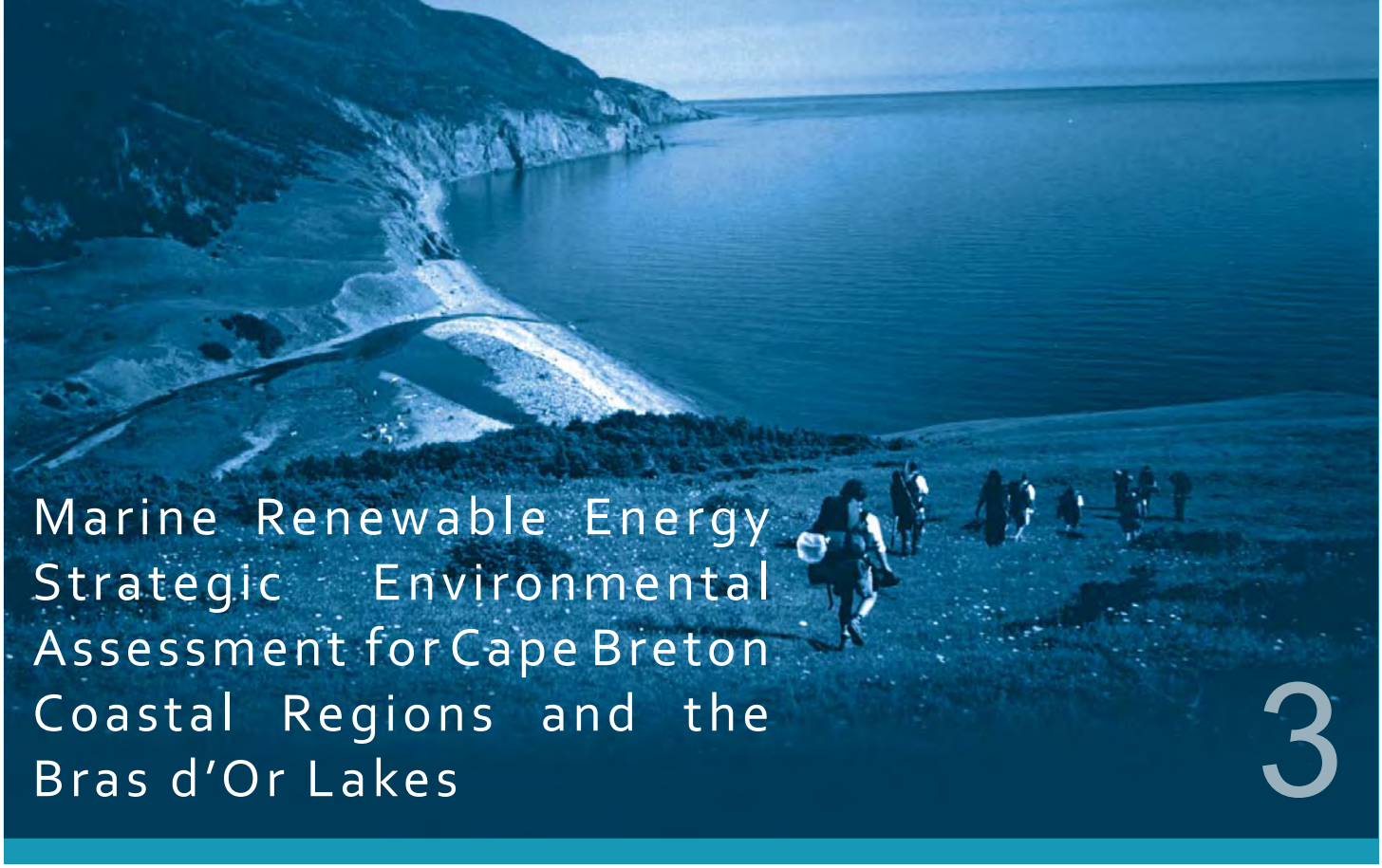
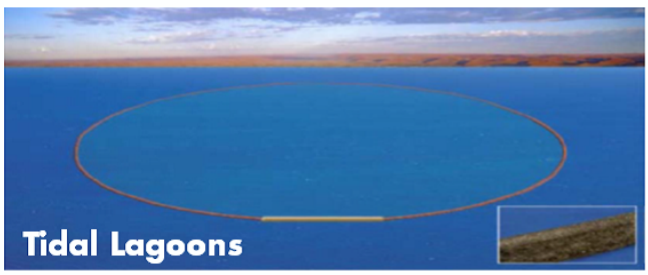


Marine Renewable Energy Strategic Environmental Assessment for Cape Breton Coastal Regions and the Bras d'Or Lakes

3

Marine Renewable Energy Technology:

There were four marine renewable energy technologies considered for this study:



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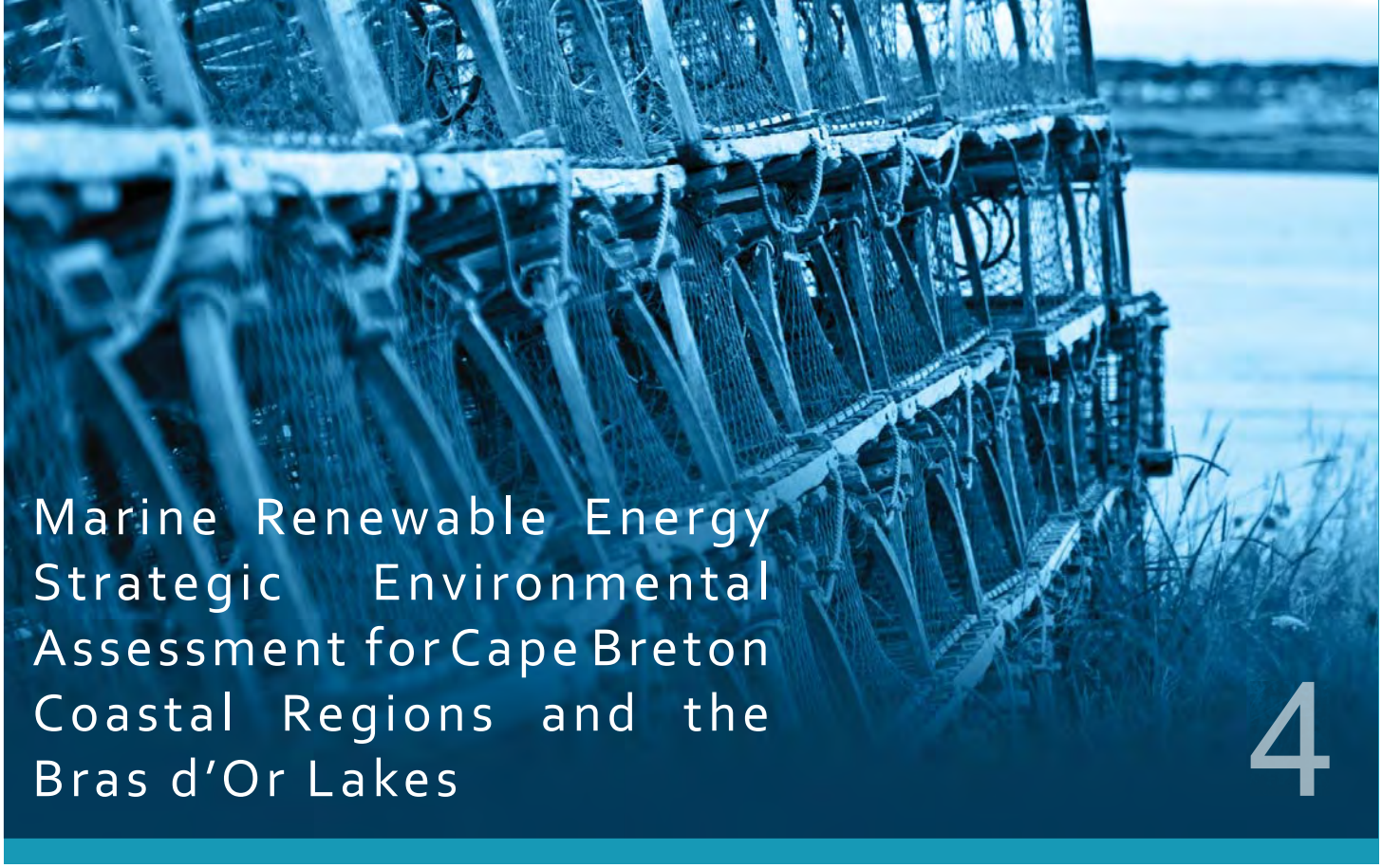


Marine Renewable Energy Strategic Environmental Assessment for Cape Breton Coastal Regions and the Bras d'Or Lakes

4

Key Parameters of Marine Renewable Energy Technology:

Marine renewable energy technologies, such as **offshore wind, small scale tidal, large scale tidal** and **wave conversion**, require certain operating parameters (conditions).

Key parameters include **water depth, distance to shoreline, wind** and **current flow.**

Areas along coastal Cape Breton and the Bras d'Or Lakes were assessed to identify areas that meet these operating parameters.

Operating Parameter	Offshore Wind (Fixed)	Small Scale Tidal	Large Scale Tidal	Wave
Average Water Depth	10 m – 60 m	10 m –30 m	20 m – 80 m	10 m – 100 m
Maximum distance from shoreline (based on maximum distance for AC export cable	100 km	5 km	100 km	100 km
Necessary Threshold	>7.0 m/s mean annual wind speed at 100 m height	Peak Spring Curren: Flow >1.0 m/s	Peak Spring Current Flow >1.2 m/s	Mean annual wave power (kilowatts) per metre of wave crest >20 kW/mWC

Marine Renewable Energy Strategic Environmental Assessment for Cape Breton Coastal Regions and the Bras d'Or Lakes

5

Potential Locations:

Six locations were identified that meet the operating parameters for at least one of the technologies and therefore have potential for marine renewable energy.

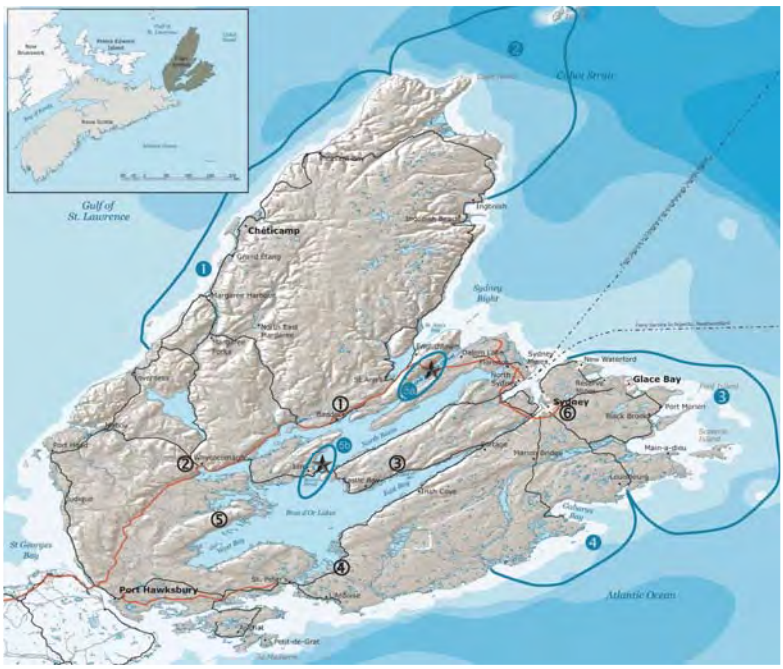
1. Mabou-Cheticamp
2. Cape North-St. Paul Island
3. Scaterie-Flint Island
4. Garbarus-Forchu

5a. Great Bras d'Or Channel

5b. Barra Strait

1. Wagmatcook
2. Waycobah
3. Eskasoni
4. Potlotek
5. Malagawatch
6. Membertou

★ COMFIT Application Approved Site



OERA Offshore Energy Research Association of Nova Scotia

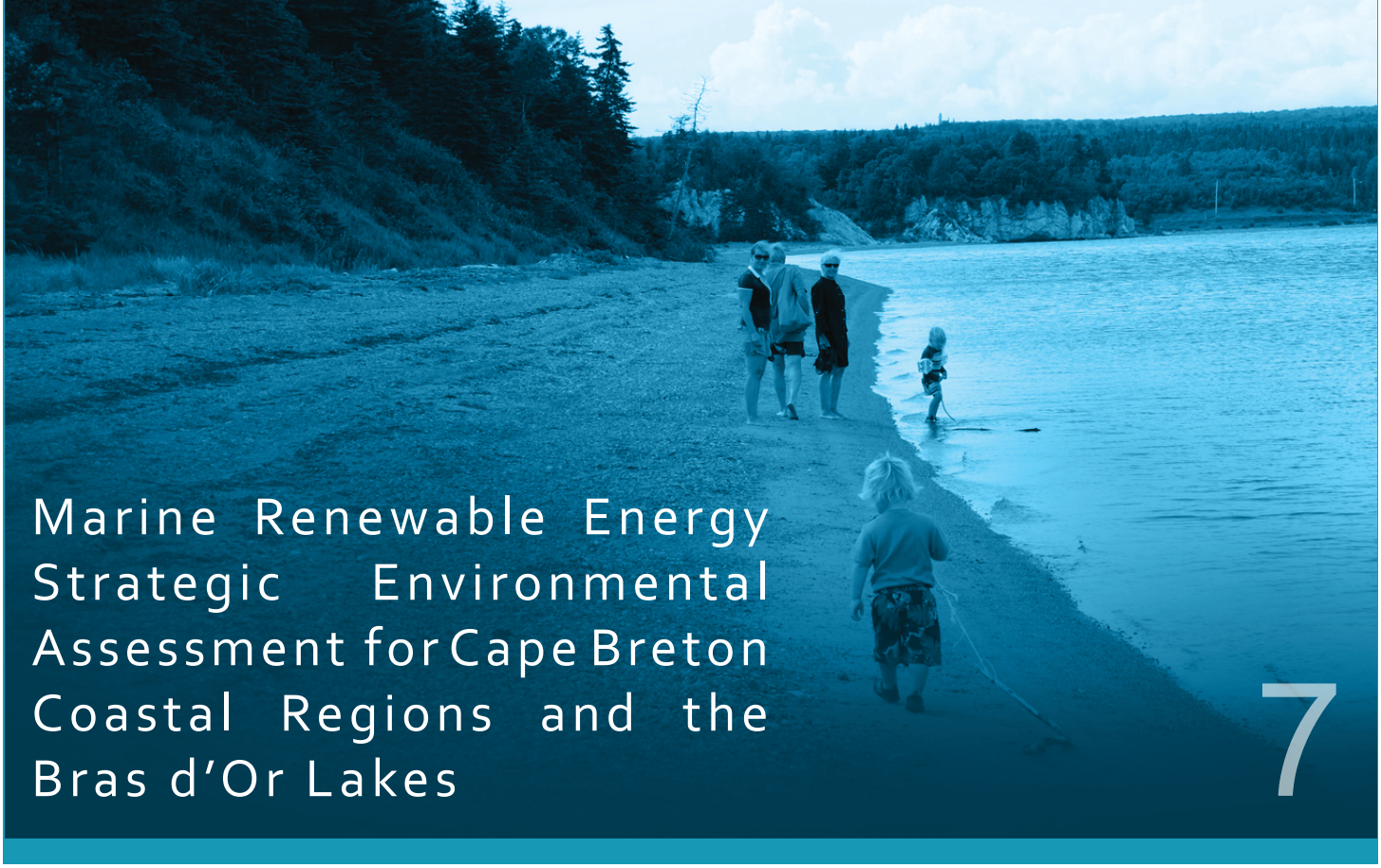
Marine Renewable Energy Strategic Environmental Assessment for Cape Breton Coastal Regions and the Bras d'Or Lakes

6

Parameters Research for Each Area:

This table illustrates the site parameters for the six locations identified as having potential for renewable energy development. Comparing the necessary operating parameters with these specific site conditions, opportunities and limitations within these areas for marine renewable energy development were identified.

Site Parameter	Mabou-Cheticamp	Cape North-St. Paul Island	Scarterie-Flint Island	Garbarus-Forchu	Bras d'Or Lakes
Water Depth	60 m – 100 m	200 m	40 m – 80 m	100 m	-
Wave Heights Greater than 2 m (% of time)	20%	31%	26%	18%	-
Wave Height Great than 3m (% of time)	7%	11%	9%	7%	-
Tidal Currents	2 m/s	0.15 m/s – 0.21 m/s	no data	no data	Carey Point at 2.19 m/s Barra Strait at 0.07-0.26 m/s
Winds higher than 5.6 m/s (% of time)	66%	68%	68%	68%	-
Winds higher than 9.7 m/s (% of time)	28%	30%	30%	30%	-



Marine Renewable Energy Strategic Environmental Assessment for Cape Breton Coastal Regions and the Bras d'Or Lakes

7

Potential Biological Interactions:

There are three types of potential interaction with marine renewable energy development: **physical, biological,** and **socio-economic.** For the biological component, potential types of interactions were identified associated with each project phase: **project/cable installation, project operation, maintenance,** and **decommissioning.**

Project/Construction Phase	Interaction
Project/Cable Installation	• Marine Benthic (Bottom) Habitat and Communities • Marine Mammals (temporary displacement) • Fish and Fish Habitat
Project Operation	• Marine Pelagic (Open Water) and Benthic Habitats and Biological Communities • Marine Mammals • Fish and Fish Habitat • Sea Birds
Maintenance	• Marine Benthic Habitat and Communities
De-commissioning	• Similar to installation

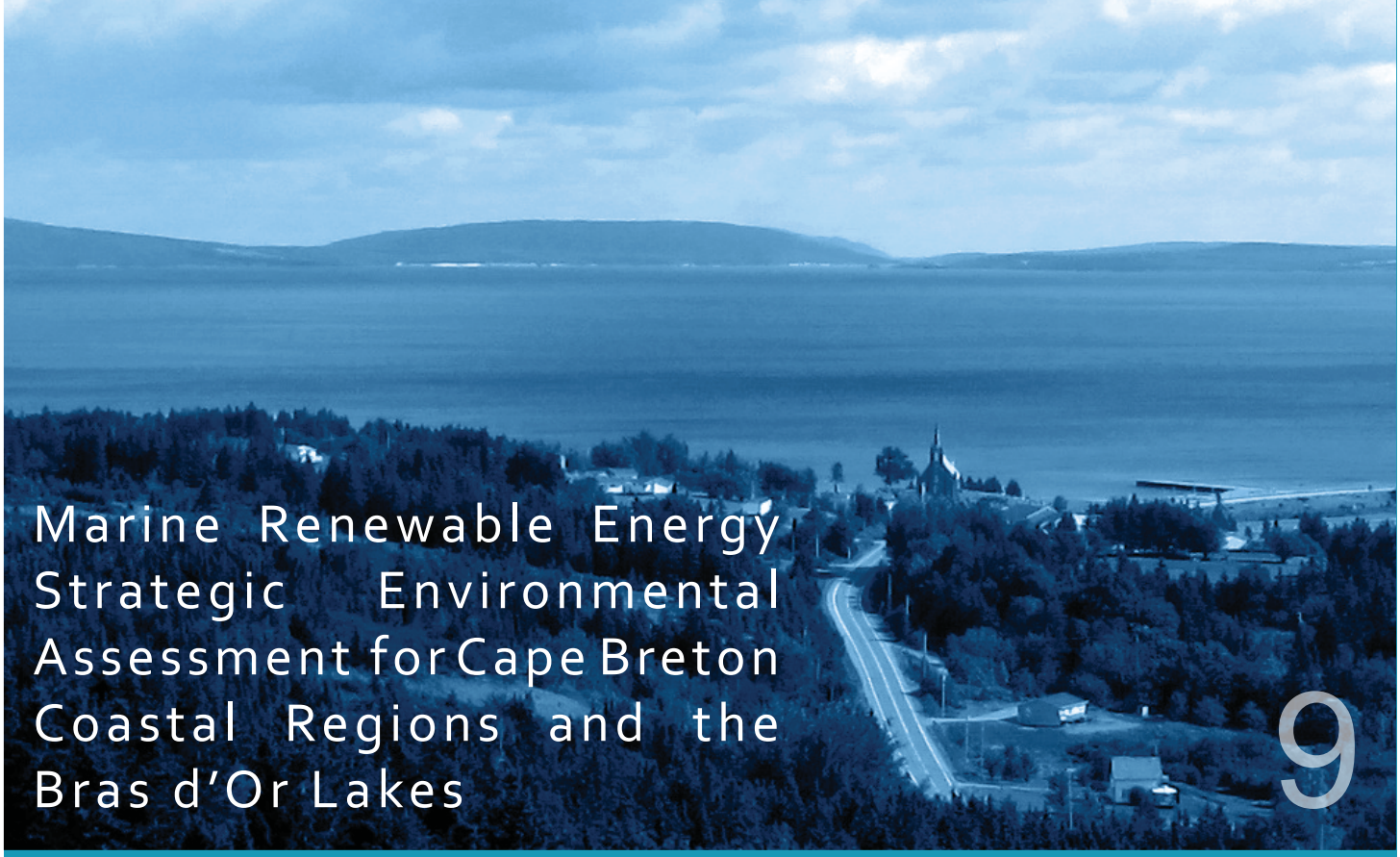
Marine Renewable Energy Strategic Environmental Assessment for Cape Breton Coastal Regions and the Bras d'Or Lakes

8

Potential Physical Process Interactions:

There are three types of potential interaction with marine renewable energy development: **physical, biological,** and **socio-economic.** For physical processes, possible interactions were identified associated with each project phase: **project/cable installation, project operation, maintenance** and **decommissioning.**

Project/Construction Phase	Interaction
Project/Cable Installation	• Sediment transport (suspension, scour)
Project Operation	• Reduced or altered current velocities • Reduced tidal size • Modified wave height, period or direction • Degradation of anti-fouling coatings into the marine ecosystem • Electro-Magnetic Fields (EMF) and noise
Maintenance	• New anti-fouling agents • Removal of marine life attached to the MRE unit • Spills from maintenance vessels • Re-introduction of lubricating oils
De-commissioning	• Similar to installation



Marine Renewable Energy Strategic Environmental Assessment for Cape Breton Coastal Regions and the Bras d'Or Lakes

9

Potential Socio-Economic Interactions:

There are three components identified as having potential interaction with marine renewable energy development: **physical, biological,** and **socio-economic.** For the socio-economic component, potential types of possible interactions were identified associated with each project phase: **project/ cable installation, project operation, maintenance,** and **decommissioning.**

Project/Construction Phase	Interaction
Project/Cable Installation	• Marine Transportation • Economic Development • Fisheries • Aquaculture • Tourism and Recreation
Project Operation	• Marine Transportation • Economic Development • Fisheries • Aquaculture • Tourism and Recreation
Maintenance	• Marine Transportation • Economic Development • Fisheries • Aquaculture • Tourism and Recreation
De-commissioning	• Similar to installation

Commercial Fisheries:

A diverse group of 14 members including business, environmental group, community, local to federal government agency, and Mi'kmaq representatives met to consider issues and concerns associated with Marine Renewable Energy in Cape Breton. This stakeholder roundtable will meet two more times to review public input and make recommendations.

During this meeting, the following Marine Renewable Energy development concerns were identified related to the **Commercial Fisheries:**

- Impacts to the lobster fishery
- Other fisheries such as the ground fishery and eel fishery
- Interface with fish and equipment resulting in fish mortalities (deaths)
- Interference with fisheries equipment
- Barriers to migratory fish created

Take a post-it!

How may Marine Renewable Energy development impact you and/or your community or organization?

Fish and Fish Habitat:

A diverse group of 14 members including business, environmental group, community, local to federal government agency, and Mi'kmaq representatives met to consider issues and concerns associated with Marine Renewable Energy in Cape Breton. This stakeholder roundtable will meet two more times to review public input and make recommendations.

During this meeting, the following Marine Renewable Energy development concerns were identified related to **Fish and Fish Habitat:**

- Loss of First Nation food, social and ceremonial (FSC) fishing
- Interface with fish and equipment resulting in fish mortalities (deaths)
- Barriers to migratory fish created
- Potential for hazardous materials from anti-fouling or equipment malfunction
- Noise production with unknown effects on biota (plant and animal life)

Take a post-it!

How may Marine Renewable Energy development impact you and/or your community or organization?

Tourism and Recreation:

A diverse group of 14 members including business, environmental group, community, local to federal government agency, and Mi'kmaq representatives met to consider issues and concerns associated with Marine Renewable Energy in Cape Breton. This stakeholder roundtable will meet two more times to review public input and make recommendations.

During this meeting, the following Marine Renewable Energy development concerns were identified related to **Tourism and Recreational Use:**

- Aesthetics may be unfavorable
- Impact to recreational diving in the Bras d'Or Lakes
- Interaction with other marine transportation users
- Exclusion zones effecting nautical navigation

Take a post-it!

How may Marine Renewable Energy development impact you and/or your community or organization?

Socio-Economic Opportunities:

A diverse group of 14 members including business, environmental group, community, local to federal government agency, and Mi'kmaq representatives met to consider issues and concerns associated with Marine Renewable Energy in Cape Breton. This stakeholder roundtable will meet two more times to review public input and make recommendations.

During this meeting, the following Marine Renewable Energy development opportunities were identified:

- Job creation in Cape Breton
- May present research opportunities
- Development of the marine industry and expanded or improved services

Take a post-it!

What opportunities do you see associated with Marine Renewable Energy Development in Cape Breton?

Welcome.

Community Meetings July 9-10, 2013

We want to hear from you about:

Marine Renewable Energy Strategic Environmental Assessment for Cape Breton Coastal Regions and the Bras d'Or Lakes

OERA Offshore Energy Research Association of Nova Scotia

Marine Renewable Energy Strategic Environmental Assessment for Cape Breton Coastal Regions and the Bras d'Or Lakes

WELCOME

Community Meetings July 9-10, 2013

One Team. Infinite Solutions

Stantec

OERA Offshore Energy Research Association of Nova Scotia

Today's Open House

- Purpose of Today's Meeting
- Outcomes of the Community Meetings
- Meeting Format

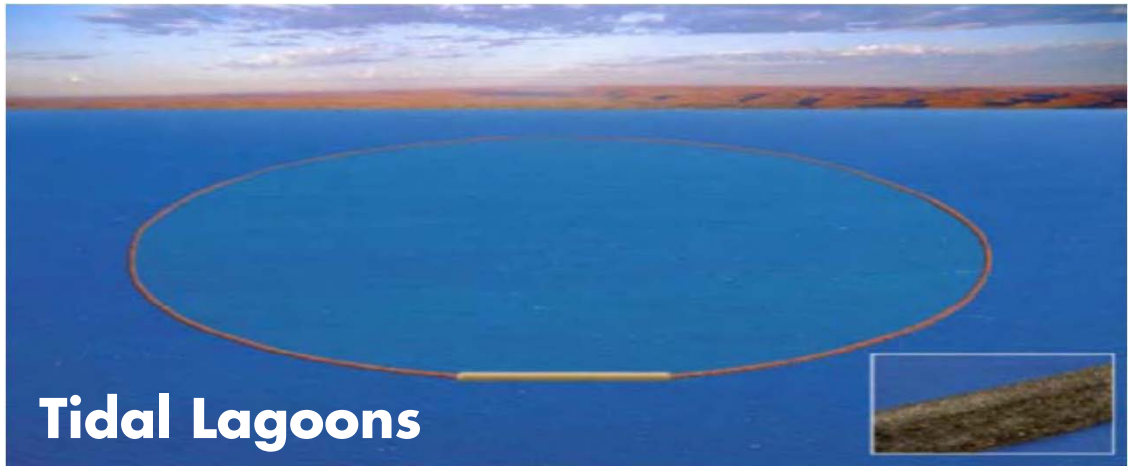
What is a Strategic Environmental Assessment?

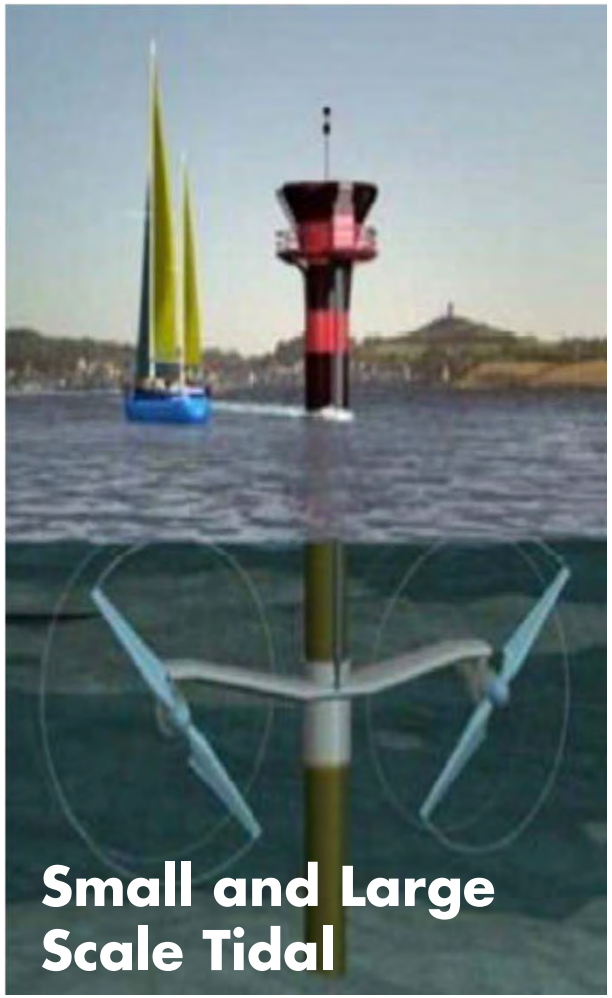
- An environmental assessment process carried out before decisions have to be made about specific projects.
- Seeks participation of a wide range of community members, stakeholders, and Mi'kmaq representatives.
- Will result in recommendations to the provincial government on whether, where and how to develop marine renewable energy in Cape Breton.

Marine Renewable Energy: Background Report to Support a Strategic Environmental Assessment (SEA) for the Cape Breton Coastal Region, inclusive of the Bras d'Or Lakes

OVERVIEW

Marine Renewable Energy Technology





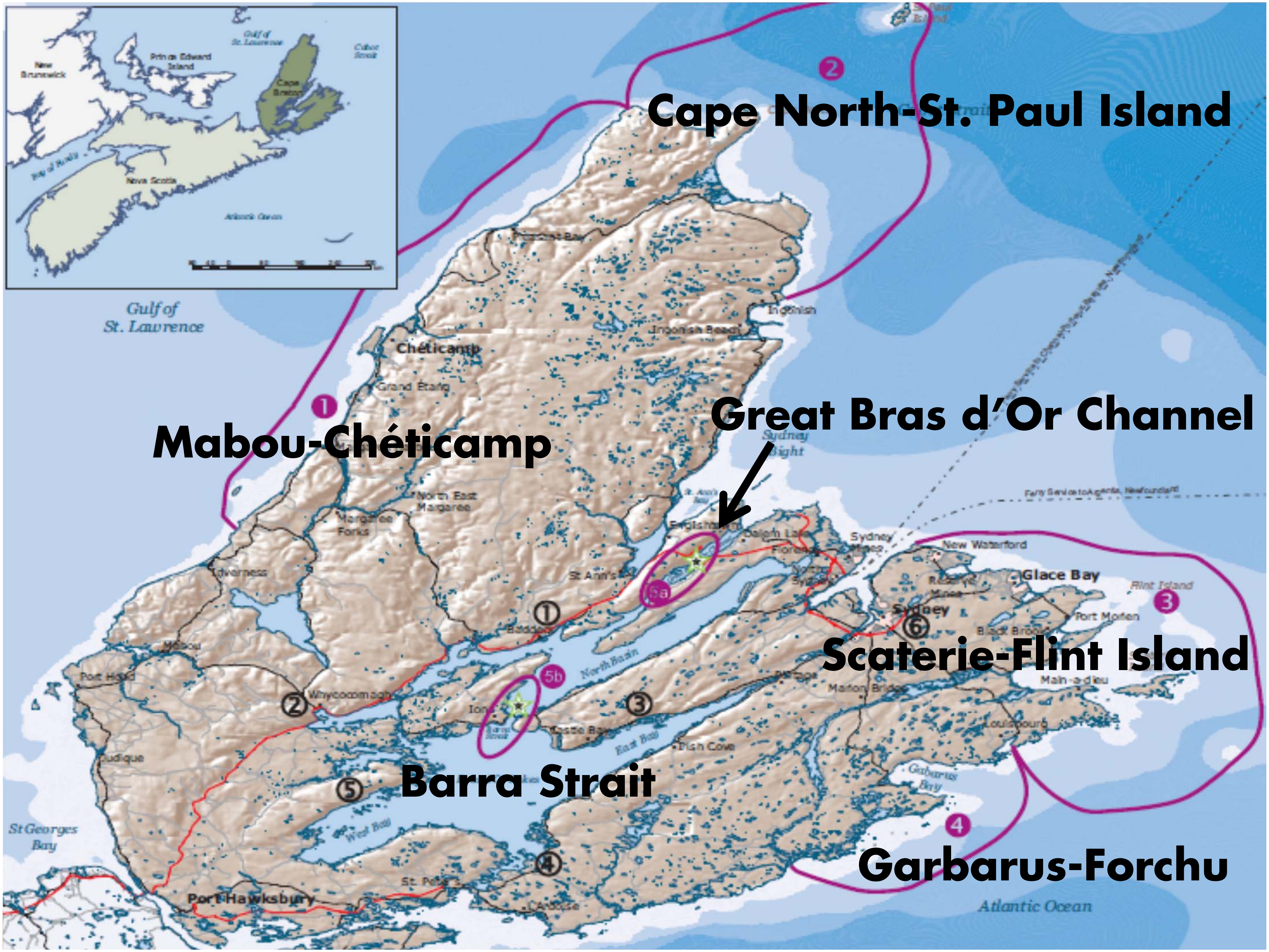
Marine Renewable Energy Technology

Operating Parameter	Offshore Wind (Fixed)	Small Scale Tidal	Large Scale Tidal	Wave
Average Water Depth	10 m – 60 m	10 m – 30 m	20 m – 80 m	10 m – 100 m
Maximum distance from shoreline (based on maximum distance for AC export cable	100 km	5 km	100 km	100 km
Necessary Threshold	>7.0 m/s mean annual wind speed at 100 m height	Peak Spring Current Flow >1.0 m/s	Peak Spring Current Flow >1.2 m/s	Mean annual wave power (kilowatts) per metre of wave crest >20 kW/mWC

Tidal Resources in Cape Breton and Bras d'Or Lakes

Six areas of interest have been identified:

- Coastal Cape Breton:
  - Mabou-Cheticamp
  - Cape North-St. Paul Island
  - Scaterie-Flint Island
  - Garbarus-Forchu
- Bras d'Or Lakes:
  - Great Bras d'Or Channel
  - Barra Strait


Cape North-St. Paul Island
Great Bras d'Or Channel
Mabou-Chéticamp
Scaterie-Flint Island
Barra Strait
Garbarus-Forchu
Gulf of St. Lawrence
Chéticamp
Grand Etang
Ingonish
Ingonish Beach
Sydney Bight
North East Margaree
Margaree Forks
Inverness
Mabou
Port Hood
Whycocomagh
Baddeck
St Ann's
North Basin
East Bay
West Bay
Fish Cove
New Waterford
Glace Bay
Sydney
Flint Island
Port Morien
Main-a-dieu
Louisbourg
Marion Bridge
Gabarus Bay
St Georges Bay
Port Hawksbury
St. Peter's
Atlantic Ocean
Prince Edward Island
New Brunswick
Nova Scotia
Cape Breton
Atlantic Ocean

Parameters Researched for each Area

Site Parameter	Operating Parameter	Mabou-Cheticamp	Cape North-St. Paul Island	Scarterie-Flint Island	Garbarus-Forchu	Bras d'Or Lakes
Water Depth	10 m – 100m	60 m – 100 m	200 m	40 m – 80 m	100 m	no data
Wave Heights Greater than 2 m (% of time)	N/A	20%	31%	26%	18%	no data
Wave Height Great than 3m (% of time)	N/A	7%	11%	9%	7%	no data
Tidal Currents	>1.0 m/s (small scale) >1.2 m/s (large scale)	2 m/s	0.15 m/s – 0.21 m/s	no data	no data	Carey Point at 2.19 m/s Barra Strait at 0.07-0.26 m/s
Winds higher than 5.6 m/s (% of time)	>7.0 m/s mean annual wind speed at 100 m height	66%	68%	68%	68%	no data
Winds higher than 9.7 m/s (% of time)	>7.0 m/s mean annual wind speed at 100 m height	28%	30%	30%	30%	no data

Low potential Moderate potential High potential No data

Potential Physical Process Interaction

Project/Construction Phase	Interaction
Project/Cable Installation	• Sediment transport (suspension, scour)
Project Operation	• Reduced or altered current velocities • Reduced tidal amplitude • Modified wave height, period or direction • Degradation of anti-fouling coatings into the marine ecosystem • Electro-Magnetic Fields (EMF) and noise
Maintenance	• New anti-fouling agents • Removal of marine life affixed to the MRE unit • Spills from maintenance vessels • Re-introduction of lubricating oils
De-commissioning	• Similar to installation

Potential Biological Component Interaction

Project/Construction Phase	Interaction
Project/Cable Installation	• Marine Benthic (Bottom) Habitat and Communities • Marine Mammals (temporary displacement) • Fish and Fish Habitat
Project Operation	• Marine Pelagic (Open Water) and Benthic Habitats and Biological Communities • Marine Mammals • Fish and Fish Habitat • Sea Birds
Maintenance	• Marine Benthic Habitat and Communities
De-commissioning	• Similar to installation

Potential Socio-economic Component Interaction

Project/Construction Phase	Interaction
Project/Cable Installation	• Marine Transportation • Economic Development • Fisheries • Aquaculture • Tourism and Recreation
Project Operation	• Marine Transportation • Economic Development • Fisheries • Aquaculture • Tourism and Recreation
Maintenance	• Marine Transportation • Economic Development • Fisheries • Aquaculture • Tourism and Recreation
De-commissioning	• Similar to installation

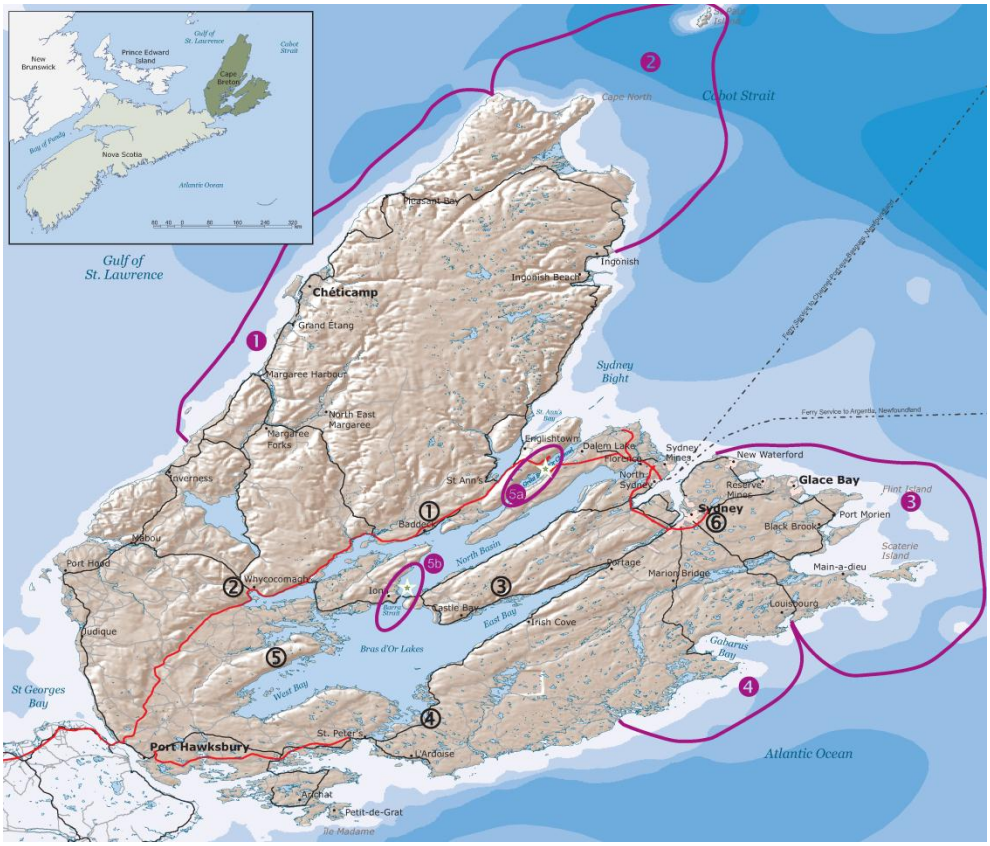
Additional Ways to Participate

- Community Survey
- Exit Survey
- Participate Support Fund

Appendix D Sample Survey

OERA: Community Engagement Survey

Prior to starting the survey, please review Figure 49 (below) in the Marine Renewable Energy: Background Report to Support a Strategic Environmental Assessment (SEA) for the Cape Breton Coastal Region, inclusive of the Bras d'Or Lakes. For additional Project details, the full Background Report can be found on the OERA website here [http://www.oera.ca/wp-content/uploads/2013/05/FINAL_CB-SEA_Background-Report_WEBSITE-COPY.pdf].



1. **Is Marine Renewable Energy (MRE) development in the public's interest over the long term? Check all that apply:**

☐ Is it in the interest of Cape Breton residents?

☐ Is it in the interest of the overall population of Nova Scotia?

Comments:

2. **What are the potential impacts that should be considered in the development of Marine Renewable Energy in the Cape Breton Coastal Region, inclusive of the Bra d'Or Lakes?**

3. **On a scale from 1 to 10, with 1 being the least supportive of and with 10 being the most supportive of, are you in favor of Marine Renewable Energy development in the Mabou-Chéticamp (Area 1) area of interest as shown on Figure 49 of the Background Report?**

   1 2 3 4 5 6 7 8 9 10

   Are there specific activities you are aware of that already occur in this area (Area 1) that might interact (positively or negatively) with Marine Renewable Energy?

4. **On a scale from 1 to 10, with 1 being the least supportive of and with 10 being the most supportive of, are you in favor of Marine Renewable Energy development in the Cape North-St. Paul Island area (Area 2) of interest as shown on Figure 49 of the Background Report?**

   1 2 3 4 5 6 7 8 9 10

   Are there specific activities you are aware of that already occur in this area (Area 2) that might interact (positively or negatively) with Marine Renewable Energy?

5. On a scale from 1 to 10, with 1 being the least supportive of and with 10 being the most supportive of, are you in favor of Marine Renewable Energy development in the Scaterie-Flint Island (Area 3) area of interest as shown on Figure 49 of the Background Report?

1 2 3 4 5 6 7 8 9 10

Are there specific activities you are aware of that already occur in this area (Area 3) that might interact (positively or negatively) with Marine Renewable Energy?

6. On a scale from 1 to 10, with 1 being the least supportive of and with 10 being the most supportive of, are you in favor of Marine Renewable Energy development in the Garbarus-Forchu (Area 4) area of interest as shown on Figure 49 of the Background Report?

1 2 3 4 5 6 7 8 9 10

Are there specific activities you are aware of that already occur in this area (Area 4) that might interact (positively or negatively) with Marine Renewable Energy?

7. On a scale from 1 to 10, with 1 being the least supportive of and with 10 being the most supportive of, are you in favor of Marine Renewable Energy development in the Great Bras d'Or Channel (Area 5a) area of interest as shown on Figure 49 of the Background Report?

1 2 3 4 5 6 7 8 9 10

Are there specific activities you are aware of that already occur in this area (Area 5a) that might interact (positively or negatively) with Marine Renewable Energy?

8. On a scale from 1 to 10, with 1 being the least supportive of and with 10 being the most supportive of, are you in favor of Marine Renewable Energy development in the Barra Strait (Area 5b) area of interest as shown on Figure 49 of the Background Report?

1 2 3 4 5 6 7 8 9 10

Are there specific activities you are aware of that already occur in this area (Area 5b) that might interact (positively or negatively) with Marine Renewable Energy?

9. On a scale of 1 to 10, with 1 being disagree and with 10 being agree, please rate the following statements:

Marine Renewable Energy development will assist in providing energy independence and promotion of renewable energy to Nova Scotians.	1	2	3	4	5	6	7	8	9	10
Marine Renewable Energy development will have positive effects to the local economy, taxation benefits and job creations.	1	2	3	4	5	6	7	8	9	10
Marine Renewable Energy development will help to reduce the effects of climate change.	1	2	3	4	5	6	7	8	9	10
Marine Renewable Energy development will increase port and harbour development in Cape Breton.	1	2	3	4	5	6	7	8	9	10
Marine Renewable Energy development will be damaging to the aesthetic qualities of the landscape.	1	2	3	4	5	6	7	8	9	10
Marine Renewable Energy development will interfere with nature conservation and natural ecosystem functions.	1	2	3	4	5	6	7	8	9	10
Marine Renewable Energy development will have negative effects on tourism.	1	2	3	4	5	6	7	8	9	10
Marine Renewable Energy development will have negative effects on fisheries.	1	2	3	4	5	6	7	8	9	10
Marine Renewable Energy development will have negative effects on shipping safety.	1	2	3	4	5	6	7	8	9	10

10. In general are there any activities that would be negatively or positively impacted by Marine Renewable Energy development?

11. Do you have any comments you would like to provide on the Background Report?

12. Do you have interest in participating in upcoming community meetings regarding Marine Renewable Energy development in the Cape Breton Coastal Region, inclusive of the Bras d'Or Lakes? Please provide your email address if you would like information in the upcoming meetings.