Final Report to the
New Brunswick Department of Energy

on

"Strategic Environmental Assessment of In-Stream Tidal Energy Generation Development in New Brunswick's Bay of Fundy Coastal Waters"

by

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Executive Summary

The Bay of Fundy, half of which borders on New Brunswick, is considered to have the highest tides in the world, an immense potential energy resource. Recently developed in-stream tidal energy generation devices, which are seen as most appropriate for adaptation to the region, suggest a means of capturing some of this energy, both to meet current provincial energy demands and to move toward a greener energy mix. However, every new activity in the Bay will have some impact on the environment and existing users of its natural resources. The New Brunswick Department of Energy has therefore commissioned this Strategic Environmental Assessment (NB SEA) to consult with the public and marine stakeholders of the Bay, assess all factors in light of the recently produced Background Report covering existing pertinent information, and develop recommendations in support of proceeding toward a tidal energy development policy for New Brunswick.

The NB SEA process involved holding seven public forums throughout the New Brunswick side of the Bay during April, 2008, to consult with the public and marine stakeholders on their opinions and concerns with tidal in-stream energy development. Each followed the same format and provided the same background material, supported by a website for additional input. In all, 172 people participated in the forums covering nearly 9 hours, plus 12 submitted on-line concerns. A total of 820 concerns were recorded, 2/3 of which focused upon the general themes of potential impacts and this NB SEA process.

The full array of opinions/concerns readily fell into 32 categories. From a holistic perspective, support for tidal energy development would appear to be running at ten to one in favour among communities, but caveats exist. These categories were subsequently grouped into three major threads: namely, (1) balancing potential impacts and benefits, (2) improving processes and information, and (3) recognizing relevance/managing development.

The first of these categories constituted half of all concerns, principal among which were the concerns of fishermen over possible displacement, gear damage and impacts on the stocks they exploit. Also within this category, community benefits were seen to be essential to counter the additional burdens they would have to endure with local tidal power development. There were significant concerns for the ecosystem, but inadequate information to justify an opinion relative to the installation of this new tidal technology.

The second category related to the limited amount of information on tidal power technology and its applicability to the Bay, and to weakness in the NB SEA process itself, particularly the lack of consultation directly with fisheries stakeholders. This additional information should be provided, and consultations held with all stakeholders to overcome these limitations.

The third category focused on the management of tidal energy projects, and in particular, the involvement of all stakeholders in the process, a full-cost-accounting assessment, and a smaller-is-better perspective. It included a number of specific conditions seen as necessary for acceptable tidal development in the Bay, including a shut-down mechanism.

Previous studies identified in the Background Report suggest ten sites in New Brunswick coastal waters that might have development potential, although for financial and environmental reasons only three are identified as likely commercial candidates. The opinions/concerns collected in this NB SEA process do not endorse the applicability of tidal energy to these specific three sites, but additional data might alter this perspective.

An assessment of the public/stakeholder data gave rise to 19 recommendations to the New Brunswick Department of Energy. If followed, and if site-specific hydrodynamic circumstances warrant, it is suggested that tidal energy generation could become acceptable to stakeholders and a reality on New Brunswick shores of the Bay of Fundy.

Although this stage of the NB SEA process is now finished, it has identified through its public/stakeholder consultations that the NB SEA process should continue. The provision of further information and direct consultations with stakeholders by the New Brunswick Department of Energy prior to policy formulation are necessary to finalize this mission.

1. Introduction

1.1 Tidal Energy in New Brunswick

The cost, availability and dependence on conventional energy sources in New Brunswick as elsewhere have sparked an increase in activity focused on renewable energy sources, including ocean renewable energy. The significant tides and attendant currents of the Bay of Fundy provide a promising opportunity to produce energy from tidal turbines (in-stream generation). Demonstrated industry interest in this field has prompted the New Brunswick Department of Energy to begin the process of policy development within which to evaluate these expressions of interest, utilizing a Strategic Environmental Assessment (SEA) process.

1.2 Strategic Environmental Assessment

"A Strategic Environmental Assessment (SEA) process informs planners, decision-makers and affected public on the sustainability of strategic decisions, facilitates the search for the best alternative and ensures a democratic decision-making process. This enhances the credibility of decisions and leads to most cost- and time-effective Environmental Assessment at the project level." (IAIA 2002, SEA Performance Criteria. http://www.iaia.org/modx/assets/files/sp1.pdf)

The Bay of Fundy supports many environmental, social and economic resources. Any new developments must therefore be given careful consideration lest other activities be interfered with or other options closed. For these reasons, SEAs have begun on both the New Brunswick and Nova Scotia sides of the Bay. The first stage of this process was the joint commissioning of a Background Report by Jacques Whitford Associates in 2007.

1.3 The Jacques Whitford Background Report

The objective of this Background Report was to review existing information on the Bay and to provide an overall assessment of:

- the current energy situation,
- the bio-physical and socio-economic environment,
- the potential locations for ocean renewable energy and the types of technology that are available,
- potential development scenarios,
- potential interactions and their significance,
- cumulative effects and predicted residual effects,
- conflict mitigation options,
- contribution of renewable ocean energy to economic development in the two provinces, and
- information gaps.

This report was completed and made available to the public in early 2008, paving the way for the next stage of the SEA process, that of public/stakeholder consultations. New Brunswick and Nova Scotia are following separate consultation strategies; however, both rely on the same information provided by the Jacques Whitford report. This Background Report is available on the www.offshoreenergyresearch.ca website, and its findings will essentially not be duplicated in this document.

1.4 Finalizing the New Brunswick SEA Process

In February, 2008, the Marine Energy Working Group of the Bay of Fundy Ecosystem Partnership (BoFEP) submitted a proposal to the New Brunswick Department of Energy to finalize their SEA process, with Dr. Barry Jones as Project Manager. This proposal was accepted and the project was initiated later that same month.

The NB SEA was to provide recommendations based on public/stakeholder opinions/ comments and the Background Report on:

- Whether marine renewable energy technologies, and specifically tidal in-stream technology, can be developed in the Bay of Fundy without significant impacts on the marine ecosystem.

- Whether these technologies can be developed without significant socioeconomic impacts on fishermen and the fisheries and on other marine and coastal resource users.

- What contribution marine renewable energy technologies can make to community and regional economic development in New Brunswick.

- Whether, and under what conditions pilot projects should be permitted.

- What ongoing research and monitoring is required to gather the information needed to make decisions about commercial developments.

- Other steps required to determine whether, where and how commercial projects should be developed, regulated and managed.

Although all New Brunswickers constitute both the interested public and stakeholders in provincial Bay of Fundy waters in reality, in the context of this NB SEA process, the interested public are basically considered to be those living within the New Brunswick coastal region of the Bay, and the stakeholders are members of New Brunswick industries who derive their livelihoods from exploiting the natural resources of the Bay.

The public/stakeholder consultation phase was conducted during the first two weeks of April, 2008, an assessment of the results of which forms the basis of this report as further elaborated upon in Section 4. More operational data on this NB SEA process is posted on the BoFEP website at www.bofep.org. This NB SEA process made allowance for communications in French through translating its advertising and the Executive Summary of the Background Report, the use of a bilingual facilitator and having bilingual representation among supporting staff present at public/ stakeholder consultation meetings. No language issues were encountered in this process.

2. Energy in New Brunswick

2.1 Current Provincial Energy Situation

New Brunswick is an energy-intensive province and is home to a diverse energy mix that has the capacity to generate approximately 4000MW of electricity, and is home to the largest oil refinery in the country. Nuclear power provides approximately 15% of the potential electricity generation of the province. Fossil fuels make up the majority of energy and electricity in the province and these pose harmful environmental effects as well as increase our reliance on foreign energy resources. With hydroelectric power and biomass-based generation, New Brunswick currently obtains about 23% of its energy from renewable sources. In order to create a self-sufficient, sustainable energy future for New Brunswick, the province needs to balance the foreign resources that are needed with the abundant renewable resources available within the province.

Energy demand is growing world-wide. With many traditional forestry industries in the province, New Brunswick sees varying degrees of change in demand. Unexpected changes in the forestry sector including the pulp and paper industries can have large impacts on the energy demand in New Brunswick. New Brunswick is also in a unique position to provide electricity and balance demand on Prince Edward Island, as well as having inter-connected electricity grid ties to Quebec, Nova Scotia and Maine. Creating market rules for clean energy projects across jurisdictions will assist in the development of these projects in the region and help meet climate change targets in the future.

Fossil fuels which generate large amounts of green house gasses (GHGs) have a significant impact on climate change. Many provinces in Canada and countries around the world have recognized the negative impact traditional energy sources have had on the planet and are adopting mitigative measures and strategies to combat the effects of climate change. More than 80% of New Brunswick's green house gasses come from electricity generation, and the transportation and industrial sectors. Focusing on alternative electricity generation from renewable sources and moving away from fossil fuels, as well as investing in energy efficiency, are ways to lower our impact on the environment and create economic development opportunities.

New Brunswick passed the "Electricity from Renewable Resources" Regulation under the Electricity Act in 2005, which requires electric utilities in the province to acquire an additional 10% of renewable electricity by 2016; at 1% per year for 10 years. Under this regulation, this additional renewable electricity will be used within the province and will not be exported. Due to the rising cost of fossil fuels, the provincial government has requested that the provincial utility, NB Power, acquire 400MW of wind energy by 2010. This has accelerated the regulated target posed by the government in 2005. Announcements for over 300MW of wind energy in New Brunswick have been made by NB Power. One wind energy project of 96MW will be operational in 2008, with the remainder of projects delivering electricity in late 2009. Although wind energy has become increasingly economical with the rising cost of fossil fuels, New Brunswick sees additional opportunities for other renewable energy sources such as small-scale hydroelectric generation, biomass, solar, geothermal and marine energy; particularly in-stream tidal.

Grid capacity issues are a concern for the New Brunswick System Operator. Studies are currently underway to determine the amount of wind energy that can be safely and securely integrated onto the New Brunswick transmission system. Each renewable source of energy that is added to the New Brunswick system will have to undergo similar capacity and impact studies. There are some benefits with sources such as tidal energy as it is highly predictable and can be integrated easier than wind energy which is less predictable. Utilities with large hydroelectric resources will further benefit from wind energy as they will be better suited to balance the intermittency of wind energy by holding the flow of water back until the wind ceases.

2.2 The Contribution of Tidal Energy

The Province of New Brunswick recognizes the need to pursue alternative forms of electricity generation in order to further secure our electricity supply and help to curb price volatility that occurs in the fossil fuel sectors. In-Stream tidal energy has an opportunity to contribute to the provincial energy mix and provide clean, sustainable energy to New Brunswickers.

The marine energy industry has been around for decades working in the oil and gas sectors. Harnessing tides for electricity generation has been explored for centuries. New technologies to harness tidal streams for electricity generation have just recently come to a stage where countries are beginning to explore their potential for development. New Brunswick is in a unique position, along with Nova Scotia, to be home to some of the highest tides in the world. Although these vast tides pose development challenges, they also represent great opportunities for electricity generation.

New Brunswick is actively pursuing wind energy development in the province and will soon have over 300MW of wind energy. As NB Power approaches the target set out in the "Electricity from Renewable Resources" Regulation with wind energy, the province will be considering its options to increase the target and support investment in other forms of renewable energy, including in-stream tidal. Impacts on rate payers in the province will be a strong consideration in increasing the target for renewable energy. With the increasing cost of fossil fuels and the consideration of the federal government to impose a carbon tax, renewable energy is becoming more economical in all forms.

Early results of tidal energy studies of the Province of New Brunswick have shown good potential for development in the Bay of Fundy. Although there are no large commercial sites recognized to date, there are relatively small commercial applications that could be viable as the technology matures. The Department of Energy has recognized the need to pursue the industry in a cautious and sustainable manner through a series of research activities, while providing opportunities for public education and awareness. Further research will be required to determine the level of development that can be done in an economical and sustainable manner, while not displacing existing industries such as fishing and aquaculture.

Although the early indications do not see vast amounts of electricity supply coming from in-stream tidal energy in comparison to other forms of electricity generation in the province, New Brunswick recognizes the benefits of diversifying the electricity portfolio and investing in clean, sustainable forms of generation. Should the province decide to move towards increasing the renewable resources target from 10% to 20%, in-stream tidal energy could make up almost one-fifth of the new target.

Following the technology development and creating relationships across the Bay of Fundy and around the Globe will help to provide additional opportunities for this emerging industry in the region. Economic opportunities will be pursued and studied to determine what opportunities there are for New Brunswickers as this industry grows and develops.

3. Adapting Tidal Energy Technology to the Bay

3.1 Technological Development

This NB SEA process and report are only concerned with tidal in-stream energy technology, since it is deemed the most appropriate relative to the natural advantage of the Bay of Fundy, its extreme tidal range and associated currents. Essentially it consists of an underwater turbine in which moving water pushes past an apparatus causing it to turn, this movement turns a generator and thereby produces electricity which is fed via subsurface transmission lines to a power grid ashore. The apparatus could have blades or less intrusive rings, and move horizontally or vertically. They could be almost any size and there could be any number of units at one site to maximize the use of transmission facilities.

The tidal currents which drive such turbines are both regular and predictable, creating a known power capability. A minor drawback is their inactivity during the slack turning of the tides which occurs four times per day for a short period, but this can be accommodated in specific ways because it is also predictable.

The present state of technology for in-stream generation is still in its infancy. No specific device or design has emerged as a front-runner, and indeed, given the variance in underwater substrate, currents and other physical characteristics, different devices may suit different locations.

3.2 Turbine Site Selection

The Background Report identifies the following ten New Brunswick sites as possible locations for tidal in-stream turbine sites based on previous investigations/estimates (2) of significant current flow:

otential Rank	Location	ower Estimate (MW)
1	Clarks Ground	870/--
2	Cape Enrage (suggested as commercial)	--/216
3	Cumberland Basin (potential commercial)	61/24
4	Grand Manan Channel	56/--
5	Head Harbour Passage (suggested as commercial)	47/50
6	Shepody Bay	43/--
7	Western Passage	36/83
8	Letete Passage	14/--
9	Lubec Narrows	4/4
10	Saint John River	TBD/--

Based on higher power estimates, shorter distance from transmission lines, and minimal potential impacts, Cape Enrage and Head Harbour Passage are suggested as having commercial possibilities, while Cumberland Basin is seen as having potential value. All others are not recommended at this time for reasons also related to

those factors. Map locations and details can be found in the Background Report. New information on power potential, changing financial viability and presently unknown impacts could well change this picture significantly.

3.3 Potential Interactions

Some of the potential interactions identified in the Background Report which could impact on site selection for turbines are physical, reflecting the suitability for turbines of certain sizes, and others relate to interference with natural resources or other users of the Bay.

From the physical perspective, water depths at low tides are absolutely limiting in that minimum depths are required above the turbines for even the largest vessels to pass with an adequate margin of safety, and obviously the currents must be adequate to turn the turbines. In terms of viability, the turbines also have to be reasonably close to the power grid and there has to be access to shore facilities for repair and maintenance. The physical characteristics limit the site possibilities.

From the perspective of interactions with the environment, turbines should not be in areas of whale, seabird, or fish or shellfish concentrations or other areas of ecological significance, or displace or otherwise interfere with those other users of the marine environment whose livelihoods or pastimes rely on exploiting such natural resources in an active or passive manner. The environmental characteristics limit the site probabilities.

When these two factors come into alignment, a significant potential for tidal energy development is created. This NB SEA process seeks to identify where and under what conditions such an alignment might occur.

4. The NB SEA Process in Action

4.1 Project Implementation

Essentially the NB SEA process consisted of holding seven public forums/open houses on the New Brunswick side of the Bay, at locations deemed to be most relevant to the issue of tidal energy and prospective development areas identified in the Background Report. These locations consisted of Alma, Moncton, Saint John, Grand Manan Island, Campobello Island, Deer Island and St. George. During March, participating personnel were lined up, venues were located and booked, presentations were developed and advertising/invitations were sent out to the public and stakeholders (Appendices A & B). This process was conducted during the first two weeks of April, 2008, according to the schedule identified in Appendix B.

The sessions were overseen by a facilitator, whose job it was to see that all public/stakeholder participants had an opportunity to be heard. Following an introduction on the session objectives and process by the facilitator, a representative of the New Brunswick Department of Energy made a presentation on the departmental perspective of tidal energy, and a representative of Jacques Whitford, the consulting

company responsible for the Background Report, gave a summary of its findings (Appendix C). The rest of each session was open to public/stakeholder input, which was recorded and transcribed (for technical reasons only the public/ stakeholder input, not any responses from government departmental personnel), and is attached in Appendix D. Provisions were also made for submissions by mail, and on the BoFEP website to provide information on the NB SEA process and a further mechanism for input into the process guided by generic questions (Appendix E). Maps of the area and personnel were also made available by the New Brunswick Department of Natural Resources for participants to make known specific locations of concern. Personnel of the provincial Departments of Fisheries and of Environment were also available to respond to questions as required. All public/stakeholder participants who chose to identify themselves for future communications on this topic are noted in Appendix F.

4.2 Public/Stakeholder Participation

During this NB SEA process there were 172 people who attended the seven public/stakeholder meetings, ranging from 9 to 43 per meeting (Table 4.1), and twelve submitted written or electronic positions, for a total of 184 participants (although some of the meeting participants may have submitted additional written perspectives, but did not identify themselves). The meetings encompassed almost 9 hours in total, ranging from 49 to 111 minutes. Given the locations of the specific venues, it was not surprising that community interests might be reflected by a majority of fishermen, environmentalists, representatives of the tourism industry or just concerned citizens. As might also be expected, in some locations there were other important community meetings scheduled for the same time period, thereby reducing anticipated participation from a particular sector.

Table 4.1: Public Participation at NB Strategic Environmental Assessment Open Houses

Location	Public Participants	Notes on Participants	Meeting Duration
Alma	35	Largely fishing community	72 min.
Moncton	21	Mostly tourism and environmentally focused	66 min.
Saint John	43	Environmentally dominated	111 min.
Grand Manan Island	10	Largely fishing community	77 min.
Campobello Island	9	Coastal community focused	49 min.
St. George	32	Broad spectrum of interest	84 min.
Deer Island	22	ely fishing and aquaculture	75 min.
Total	**172**		**8 hr. 54 min.**

Project personnel included from 6-8 additional people at each meeting.

4.3 Summary/Highlights of Input

All transcripts and written submissions were reviewed to determine the full array of opinions/concerns of participants at the NB SEA meetings. In total, 32 seemingly distinct opinions/concerns were identified, but with the appreciation that there would obviously be a lot of overlap among them. These opinion/concern topics are elaborated upon as follows:

#1 "Is a renewable/green resource and is a good thing" – includes any support for tidal energy as a preferred renewable or green resource, and any indication that tidal energy development is a good thing to do, under the assumption that they are similar in intent.

#2 "Should be a replacement of non-renewable resources/conservation" – development should be done when it is employed as an opportunity to reduce the carbon footprint of current coal, oil and gas energy sources, thereby allowing the reduction of non-renewable energy use as a conservation measure.

#3 "Should contribute to communities and the Province" – the degree of benefits of development should be greatest closest to the source and lesser further away, meaning firstly to local communities, then near but inland communities, then the county, the Province, and Canada.

#4 "Put in the context of alternative energy sources/complement" – development should not be done in isolation of other renewable and non-renewable energy production, but done within the context of balancing/complementing such sources for the mix best suited to Provincial goals.

#5 "Has drawbacks and unknowns and is NOT a good thing" – not supported because there are definite impacts on current marine industries and communities, and too many unknowns in regard to remediation and the development of this technology.

#6 "Should not be developed for export at local cost" – against development just to increase exports to US, where coastal communities next to such development have to live with its impact and with no recompense or other benefit.

#7 "Should serve public good, not be a market/investment opportunity" – any development should only be done when it is seen to be an opportunity to serve the public good, not just because the energy market would make it financially worthwhile to do as a business investment opportunity.

#8 "Weak SEA/EIA processes contribute to public/stakeholder trust deficit" – this SEA process has weaknesses that should be addressed before it is considered to be completed, and is seen to be just an extension of the EIA process which currently is felt to lack public trust.

#9 "Should have definite community benefits" – coastal communities feel a sense of ownership and responsibility for the marine resources on their doorsteps, and will be

impacted directly and indirectly by its development, so such communities should definitely gain some benefits from exploitation of this resource to offset the additional burdens.

#10 "Should have greater availability, stability and lower cost power" – one of the desirable benefits of development to close coastal communities would be a greater stability of their power supply, additional sources/quantity of power and a decrease in power rates.

#11 "Should have greater employment and business opportunities" – all local tidal energy development should focus on training and utilizing local labour sources, and providing opportunities for local businesses to participate in construction, supply and maintenance of such development.

#12 "Should contribute toward better marine infrastructure" – development should lead to improvements in marine docks, wharves, supplies and related facilities, and should be a net improvement over and above additional needs rather than an additional burden.

#13 "Impact concerns for ecosystem, environment and natural resources" – development should have minimal impacts on the ecosystem, environment and the living/structural natural resources of the Bay, upon which coastal communities and marine industries depend.

#14 "Concerns about detrimental impacts on fisheries" – development should have minimal negative impacts on the fisheries of the Bay, notably its resources, exclusion areas, gear/equipment and supporting infrastructure.

#15 "Concerns about detrimental impacts on tourism" – development should have minimal negative impacts on tourism, and in particular, on the viewscape and access to natural resources both ashore and on the water.

#16 "Concerns about detrimental impacts on communities" – development should have minimal negative impacts on coastal communities's activities, constituents, resources, services/ infrastructure and lifestyle.

#17 "Concerns about detrimental impacts on whales" – development should have minimal impacts on the whales which frequent the Bay, which are both an endangered species and a significant source of tourism interest.

#18 "Concerns about detrimental impacts on aquaculture" – development should have minimal negative impacts on aquaculture, and in particular, cage siting, anchor fouling, changing hydrodynamics and infrastructure competition.

#19 "Should conduct direct/immediate stakeholder consultations" – marine stakeholders, principally fishermen, should be consulted directly and in depth in this SEA process rather than through a public process, since they have valuable information to contribute and a significant vested interest in offshore development.

#20 "Locals and aboriginals should be involved and supported" – coastal communities have a strong vested interest in local development, and aboriginals feel that they have special rights, both of which deserve their involvement in this SEA process, and have a requirement for financial support to do so.

#21 "Employ a clear and transparent consultative process" – due to the apparent public trust deficit associated with the EIA process, this SEA approach should employ a very clear and transparent consultative process in seeking public/stakeholder input, which is currently on less than firm ground.

#22 "Identify data gaps and research/monitoring requirements" – there were many unanswered questions brought by the public/stakeholders in this SEA process which need research/monitoring to provide a comfort level to their decision-making.

#23 "Focus on small scale and small size units" – development policy arising from this SEA process should focus on small scale development with small units to minimally impact current marine activities and communities, more of a local power contributor rather than a massive grid power source.

#24 "Provide more information on location, timing and process" – public/stakeholder contributions to this SEA process would be better served with more information on just where development in the Bay might be located, and how and in what timeframe development might unfold.

#25 "Consider the appropriateness of technology for the area" – since an array of different tidal energy technologies in different stages of development exist, but with a limited understanding as to how appropriate they might be to the Bay, the SEA process should seek and bring forth further information on this for public/stakeholder decision-making.

#26 "Should have strong stakeholder/public involvement/control" – since the public/ stakeholders feel a strong sense of ownership over the marine resources on their doorsteps, and are the lost likely to be impacted, they should be directly involved in the planning and management of tidal development in the Bay.

#27 "Should be incremental/harmonious/precautionary development" – in the interests of minimizing negative impacts on the Bay, its natural resources and communities, development should proceed in small stages in harmony with other marine activities and err on the side of caution, allowing time for adjustment.

#28 "Should have full-cost accounting for each project/cumulative impact" – all development projects should be fully assessed, not only as to their financial viability, but also as to their impact on coastal communities, other marine industries and the Bay itself, both singly and cumulatively in association with other such developments.

#29 "Should include short and long-term compensation in projects" – recognizing that every new marine activity will have some impact on the Bay and existing activities,

provision should be made in all development for both short and long-term compensation, and remediation projects.

#30 "Should have shut-down and removal standards/process in projects" – Included in any development project should be operational standards, obligations and plans which, if exceeded would trigger a shut-down and removal of the development in a pre-determined manner.

#31 "Need strong development regulations and enforcement" – in order to effectively manage development, appropriate regulations should be developed, approved and enforced, and adequate resources should be made available to do so.

#32 "Should be a clear assignment of responsibility and accountability" – in the management of development, and in all associated government activities and agencies, there should be a clear assignment of responsibility and accountability (who does what, when, where and how), and this information should be made available to all the public/stakeholders.

During the course of the Open Houses and in the written submissions 820 such opinions/ concerns were identified and assigned to their respective topics. Since most participants did not identify themselves when contributing opinions/concerns, it was impossible to say from the transcripts whether any particular opinion/concern was repeated by one participant or came from a hitherto unheard from participant. Unless it was obvious, it was therefore assumed that each opinion/concern was a new one. The opinion/concern topics were subsequently categorized into six broad themes as follows:

(a) Preferred Development Directions	(93	@	11.3%)
(b) Unacceptable Development Directions	(102	@	12.4%)
(c) Recognition of Potential Benefits	(53	@	6.5%)
(d) Concern About Direct/Indirect Impacts	(295	@	36.0%)
(e) Current SEA Process Involvement/Basis	(255	@	31.1%)
(f) Energy Development Involvement/Basis	(22	@	2.7%)

and the data for all venues and other submissions were put into a table format (Table 4.2). Across the board sums were then done for each opinion/concern. The numbers and percentages in brackets indicate the actual numbers of opinions/concerns per theme and their proportions respectively. It is evident that just over 2/3 of the opinions/ concerns were associated with only two themes, namely potential impacts and the SEA process itself.

From a holistic perspective (looking at items #1 & #5), it is immediately obvious that support for tidal energy development is running at 10 to 1, so the potential for moving forward would appear to be well established in coastal communities. However, it should be cautioned that most of this support comes from venues/submissions with few fishermen participants, and fishermen's concerns were significant as will be seen in a later section.

In any categorization of data there is always the question of just how it should be structured, and inevitably cross-cutting themes exist which could yield additional information. If the overall support and non-support topics are removed, and the remaining ones (784) are redistributed on a more topic-oriented basis, selection criteria being as follows:

Balancing Potential Impacts and Benefits:
Industry Impacts (#14, 15, 18)..... 159
Community Impacts/Benefits (#3, 6, 7, 9, 10, 11, 12, 16)..... 133
Ecosystem Impacts (#13, 17)..... 107

Improving Processes and Information:
More Information (#24) 108
Weak SEA/EIA Processes (#8, 19, 20, 21)..... 104

Recognizing Relevance/Managing Development:
Managing Development (#2, 4, 26, 27, 28, 29, 30, 31, 32)..... 74
Appropriate Technology (# 23, 25)..... 68
Data Gaps/Research (# 22)..... 31

Table 4.2: Summary of NB SEA Tidal Energy Bay of Fundy Public/Stakeholder Opinions/Concerns

(A) Preferred Development Directions:

No.	Opinion/Concern	Alma	Moncton	Saint John	Grand Manan	ampobello	t. George	eer Island	ubmission	Totals
1	Is a renewable/green resource and is a good thing	1	3	9	0	7	3	1	9	33
2	Should be a replacement of non-renewable resources/conservation	2	6	7	0	3	1	6	3	28
3	Should contribute to communities and the Province	1	1	3	0	0	0	0	3	8
4	Put in the context of alternative energy sources/complement	3	2	6	1	1	2	7	2	24

(B) Unacceptable Development Directions:

No.	Opinion/Concern	Alma	Moncton	Saint John	Grand Manan	ampobello	t. George	eer Island	ubmission	Totals
5	Has drawbacks and unknowns and is NOT a good thing	1	0	1	0	0	1	0	0	3
6	Should not be developed for export at local cost	1	0	5	2	2	3	3	2	18
7	Should serve public good, not be a market/investment opportunity	3	1	13	0	0	2	5	1	25
8	Weak SEA/EIA processes contribute to public/stakeholder trust deficit	3	0	27	7	1	14	0	4	56

(C) Recognition of Potential Community Benefits:

No.	Opinion/Concern	Alma	Moncton	Saint John	Grand Manan	ampobello	t. George	eer Island	ubmission	Totals
9	Should have definite community benefits	0	1	8	3	4	3	3	4	26
10	Should have greater availability, stability and	1	1	5	0	2	3	0	6	18

	lower cost power									
11	Should have greater employment and business opportunities	0	4	2	0	0	0	0	2	8
12	Should contribute toward better marine infrastructure	0	1	0	0	0	0	0	0	1

(D) Concern About Direct/Indirect Impacts:

No.	Opinion/Concern	Alma	Moncton	Saint John	Grand Manan	ampobello	t. George	eer Island	ubmission	Totals
13	Impact concerns for the ecosystem, environment and natural resources	5	6	21	20	4	25	1	10	92
14	Concerns about impacts on fisheries	27	6	7	32	9	29	23	6	139
15	Concerns about impacts on tourism	4	2	1	0	3	2	0	3	15
16	Concerns about impacts on communities	5	2	6	3	0	9	2	2	29
17	Concerns about impacts on whales	0	0	1	2	4	3	0	5	15
18	Concerns about impacts on aquaculture	0	0	0	1	0	2	1	1	5

(E) Current SEA Process Involvement/Basis:

No.	Opinion/Concern	Alma	Moncton	Saint John	Grand Manan	ampobello	t. George	eer Island	ubmission	Totals
19	Should conduct direct/immediate stakeholder consultations	10	0	4	3	0	4	0	1	22
20	Locals and aboriginals	2	0	8	4	0	2	0	3	19

	should be involved and supported									
21	Employ a clear and transparent consultative process	4	0	3	0	0	0	0	0	7
22	Identify data gaps and research/ monitoring requirements	4	5	6	4	3	3	2	4	31
23	Focus on small scale and small size units	1	5	1	6	4	1	8	4	30
24	Provide more information on location, timing and process	10	11	9	13	6	30	29	0	108
25	Consider the appropriateness of technology for the area	0	1	2	4	3	8	20	0	38

(F) Energy Development Involvement/Basis:

No.	Opinion/Concern	Alma	Moncton	Saint John	Grand Manan	ampobello	t. George	eer Island	ubmission	Totals
26	Should have strong stakeholder/ public involvement/control	0	0	0	0	0	3	0	1	4
27	Should be incremental/ harmonious/ precautionary development	0	1	3	0	0	0	0	0	4
28	Should have full-cost accounting for each project/cumulative impact	2	1	0	0	0	0	0	0	3
29	Should include short and long-term compensation in projects	0	0	2	2	0	1	0	0	5
30	Should have shut-down and removal standards/process in projects	0	1	0	0	0	0	0	0	1
31	Need strong development	0	1	0	0	0	0	0	2	3

	regulations and enforcement									
32	Should be a clear assignment of responsibility and accountability	0	0	2	0	0	0	0	0	2

then a slightly different perspective emerges as per Figure 4.1. The numbers in parentheses are the opinion/concern topics, and the numbers following the dots are the totals of topics in that theme area.

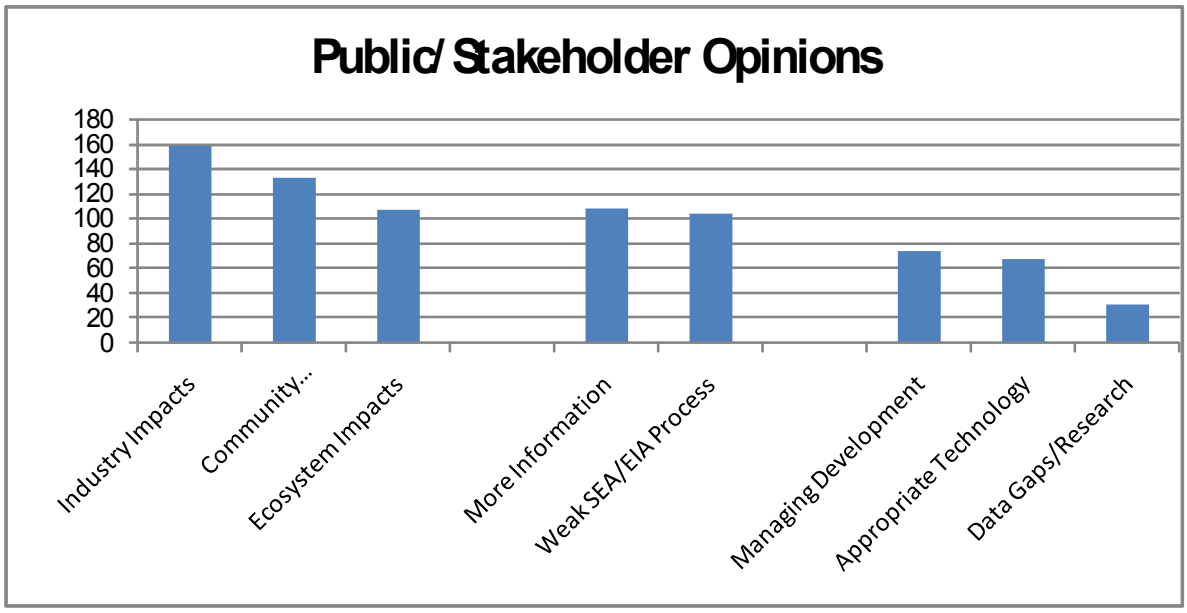

Figure 4.1: NB SEA Tidal Energy Public/Stakeholder Opinions/Concerns expressed during Open Houses in April, 2008.

As can be seen, the eight groups fall easily into three functional groups as follows:

(a) Balancing Potential Impacts and Benefits (399 @ 50.9%)
(b) Improving Processes and Information (212 @ 27.0%)
(c) Recognizing Relevance/Managing Development (173 @ 22.1%)

Again, the numbers and percentages in brackets indicate the actual numbers of opinions/ concerns per group and their proportions respectively. In this array more than half of the opinions/concerns relate to potential impacts and benefits of tidal development, while the rest are more or less evenly divided between public process and project management.

These groupings will be discussed in detail in the following three sections of this report, along with an assessment of their significance and recommendations for further action by the New Brunswick Department of Energy.

5. Balancing Potential Impacts and Benefits

5.1 Public/Stakeholders Opinions/Concerns

As indicated in Section 4 of this report, public/stakeholder opinion was greatest relative to perceived negative impacts on existing industries in the Bay of Fundy, and principally in regard to fisheries at 87.4%, with the rest focusing on tourism and aquaculture. Fully 159 opinions/ concerns were expressed on this topic. Concern for coastal communities in terms of negative impacts and off-setting benefits came in a close second at 133, followed by ecosystem/ environmental concerns at 107, for a group total of greater than half (50.9%) of the opinions/concerns expressed throughout this NB SEA process.

Industry impacts:

In terms of impacts on existing marine industries, opinions/concerns were brought forward with regard to fisheries, aquaculture and tourism.

Fishermen were particularly concerned over possible direct negative impacts on the stocks which they fish, being excluded from current fishing areas, damage to gear/ equipment and disruption of their normal fishing activities.

They specifically noted that fish behaviour/movements might change and thus affect fishing patterns, in particular, if tidal energy devices were placed in narrow channels through which fish or shellfish migrate seasonally. Also, they indicated that they fish everywhere throughout the Bay right now, but also that they move from area to area as the fish move/migrate, both within a season and from year to year, so that a defined tidal energy exclusion zone might not affect them one year, but the next year it might. They also noted that even their heavy gear can be moved by the same strong currents which might be desirable to tidal developers, so that the gear may run afoul of underwater turbines, possibly damaging or destroying one or both. Similarly they were concerned that the increased vessel traffic might interfere with their fishing activities at sea, and operational activities at dockside through competition for services and space.

They were also very cautious about marking areas of concern on the maps provided by the Department of Natural Resources, having had a long history with providing information to federal fisheries management and subsequently having it turned against them by such information being cast in stone rather than just being a generality. It must not be assumed that such identified stock areas or areas of concern for other reasons means that the areas of the maps not identified suggests that there is nothing of concern there. Quite the contrary, there may well be something there that individual fishermen may want to keep the information to themselves or might fish there in a subsequent year when stocks move. Fishermen do not want to be pushed into defining their own future limitations! To paraphrase their feelings, "been there and done that!"

On a limited positive side, fishermen could see the possible improvement in marine infrastructure to handle the vessels and equipment needed for tidal development and maintenance, and its benefit to themselves.

The only research issue that was brought up at the consultation sessions was related to concern for and the lack of information on the potential impact of vibrations/ noise/electromagnetism on fish and their movements from tidal energy devices and their attendant submerged transmission lines.

Aquaculturalists (actually, principally those practicing marine cage culture/grow-out of salmonids) were concerned over potential impacts on cage siting, anchor fouling, changing hydrodynamics and infrastructure competition.

In the application for aquaculture permits, sites must be identified which have the appropriate hydrodynamic conditions for marine cage culture, that is, non-depositional, having currents adequate to meet both the health of the stock and environmental maintenance. Although aquaculturalists did not see the likelihood of competition for specific sites with tidal energy developers since their current and depth requirements appeared to be quite different, they were concerned that tidal energy development might change the nature of local currents and impact the hydrodynamics of their sites. They were also concerned that the additional vessel traffic might result in greater fouling of their anchor lines, with subsequent damage to their cages and stock.

As with fisheries, aquaculturalists were concerned with their operational activities at dockside through competition with tidal energy developers for services and space, although they too could see possible improvements in marine infrastructure to handle the vessels and equipment needed for tidal development and maintenance, and its benefit to themselves.

On the other hand, the tourism industry, and particularly the eco-tourism industry, is based on selling the "natural experience" to the general public, and depends on healthy natural resources and environment, and the ability to encounter these openly and easily. Of principal importance is the viewscape, being able to see the natural scenery without the encumbrance of transmission towers, power lines and maintenance vessels. Similarly, tourists also want to enjoy sailing, whale watching, recreational fishing and the like without having to compete with additional vessel traffic at sea or at dockside. This industry is also concerned that marine turbines might change the local marine conditions such that the natural resources that they depend upon are reduced or their behaviour otherwise changed, so that they became inadequately or no longer present in a particular area.

<u>Community impacts and benefits</u>:

Coastal communities close to tidal development activities know that they will be affected by any such development in many ways, including their activities, constituents, resources, services, infrastructure and lifestyle. What

they fear most is that developers will, with the permission of the provincial government, conduct their business without regard for either the health of the ecosystem on which they depend or the welfare of the communities themselves. They fear that tidal energy will be allowed to be developed just for export purposes, leaving coastal communities to live with and to clean up the mess if they can, a not unusual natural resource development circumstance in past years.

The perspective of communities is that tidal energy development should be done for the right reasons and with the right motives. Since it is a public resource, tidal energy should only be developed when it is seen to be an opportunity to serve the public good, not just because the energy market would make it financially worthwhile to do as a business investment opportunity. In other words, there must be a better rationale to such development than just corporate financial gain, albeit with a tax contribution to government; although communities do recognize that developers have to make a profit from these ventures. In addition, the distribution of benefits should be a reflection of the proximity to the resource, that is, the closer one is to the resource, the greater the benefits. In this regard, it is felt that such benefits should firstly come to coastal communities which are most affected by the development, and then to communities further away and to other levels of government, such as the Province.

Since coastal communities feel a sense of ownership and responsibility over the marine resources on their doorsteps, and will be impacted directly and indirectly by tidal development, they feel that they should definitely gain some benefits from exploitation of this resource to offset the additional burdens. One obvious potential benefit would be relative to the power needs of such communities, as in a more stable source of energy supply, additional sources/quantity of energy and/or a decrease in power rates. It is, of course, anticipated that there would also be greater employment opportunities through training and utilizing local labour sources, and greater opportunities for local businesses to participate in construction, supply and maintenance of such development.

Given that the economies of coastal communities of the Bay are typically based upon marine industries such as fisheries, aquaculture and tourism, much of what impacts or benefits these industries also affects the communities in which their participants reside and are serviced. In support of these sectors, communities specifically provide marine docks, wharves, supplies and related facilities, much of which would also be required by tidal energy developers, thereby creating an additional burden on such resources.

<u>Ecosystem impacts</u>:

It is recognized that any human activity in the Bay is a disturbance of the ecosystem/ environment to some extent, and it is feared that energy development could be a significant disturbance. Such impacts could be on the

hydrodynamics and/or physical structure of the Bay, and on the living resources of the Bay, including the fish, shellfish and whales and their plankton food supplies which are the bases of many coastal community industries. Many of these resources are already considered to be endangered or in precarious states, and may not be able to endure any significant disturbance. The collapse of any components of the ecosystem of the Bay would in its own right be a tragedy from a diversity/food web perspective, but it would also almost assuredly have negative ramifications on coastal community economies.

5.2 Charting a Positive Course

If we start from the premise that tidal energy is a green and therefore desirable form of power, and that the Bay of Fundy because of the extent of its tides is an appropriate location to apply this technology, as was inferred in Section 4, then the objective becomes to develop a way to work toward tidal energy development, while at the same time also addressing negative perceptions and possible impacts.

From the public/stakeholder perspective, it is essential that the provincial government/ NB Energy decide upon and proclaim its priorities and approach relative to tidal energy development: For whose benefit is it being developed? How will it fit into the overall NB energy picture? How will it affect the public/stakeholders and their coastal communities? Articulating such priorities and approaches will provide the framework from which the public/ stakeholders can evaluate tidal energy development initiatives. If this is seen as positive, then public/stakeholder support will be enhanced, and development may proceed more smoothly.

At the ecosystem level, do we know enough to be able to evaluate whether or not it would be affected by the installation of a tidal turbine array? That obviously depends on the scale of application and the size of the turbines relative to the proposed location. This was a question that was asked by fishermen many times during the SEA process; "give us specifics and we will respond with specifics!" In this SEA process it was apparent that many participants may have been somewhat torn between moving toward green energy at the possible expense of some level of impact on the ecosystem. All in all it would appear that moving ahead cautiously by identifying specific areas of interest, consulting extensively with local fishermen, and collecting relevant ecosystem/environmental/natural resource information would be an

appropriate and positive beginning. This should then be followed up with further consultations with fishermen in terms of what the information indicated relative to ecosystem impacts, the proposed installation, operational monitoring and remediation work. In short, fishermen want to be involved in the process at all stages of development.

In support of these proposed directions, and to allay fishermen's concerns over possible impacts of vibrations, noise or electromagnetic interference to fish and their movements from tidal energy devices and their associated transmission lines, research should be carried out to make such determinations.

When adequate data and consultation with fishermen support the possibility of a particular tidal project being developed, relevant local coastal communities should be brought into the process in a significant way. Negotiations among the communities, the proponent and NB Energy should be undertaken to determine what is required of the communities, what benefits will accrue to them, and when and how this will happen. Because they are also an essential part of these communities, fishermen would obviously also be a part of these negotiations.

Fishermen are very protective of the resources from which they derive their livelihoods, and fully understand that they have a privilege not a right. However, everyone resents something being taken away, and that has already happened to fishermen when aquaculture came into being in the Bay several decades ago. They have learned to live with this intrusion, and could do so again with tidal power, but they want it done right and for the right reasons. If a process of involvement and cooperation among proponents, fishermen, communities and government exists in this tidal development process, then a positive outcome is more likely.

Similarly, tourism plays a very significant role in the regional economy of the Bay, and is a growing industry, particularly relative to whale-watching. Any installations which interfere with whale movements or behaviour should be avoided.

5.3 Recommendations

Recommendation 1: The Province of New Brunswick should establish and make public its priorities for tidal energy development in the Bay of Fundy in terms of how it will fit into the overall NB energy picture, the flow of benefits and how such development will affect communities. In particular, it should acknowledge that local benefits have priority in the Province and over exports, and should require that all proponents identify the type and extent of such benefits in their project proposals.

Recommendation 2: The Province of New Brunswick should immediately involve fishermen, and other marine industry representatives, in the process of site selection and approval at all stages, even at the beginning research level. On any new site application all relevant provincial departments should work with local fishermen and others to determine whether it should go ahead, and if so, the objectives and conditions under which it should do so. Such conditions should include as a standard element an oversight mechanism with fishermen members. This recommendation to be superseded by Recommendation 11 as sites progress beyond the research level.

Recommendation 3: On any site which is approved to go beyond the research level, the Province of New Brunswick should set up a process to consult/negotiate with local coastal communities and the proponent regarding the potential requirements of specific tidal development projects, and the possible benefits that might accrue, with specific recognition of the human and financial resource implications for all three parties; agreements to be ratified by the NB Bay of Fundy Marine Energy Development Committee (see Recommendation 11).

Recommendation 4: The Province of New Brunswick should specify within its tidal energy development policy that no areas which consist of narrow channels through which marine mammals, fish and/or shellfish migrate seasonally will be considered for tidal energy generation. Such areas should be defined in the near future, with the help of fishermen and the Southwest New Brunswick Marine Resources Initiative, and excluded from further consideration. Applications which come in prior to this determination should have to establish that such migrations do not occur in their areas of interest.

Recommendation 5: The Province of New Brunswick should instigate a research project to determine the possible impacts of vibrations, noise or electromagnetic interference on fish, shellfish and marine mammals and their movements from tidal energy devices and their associated transmission lines.

6. Improving Processes and Information

6.1 Public/Stakeholders Opinions/Concerns

As indicated in Section 4, public/stakeholder opinion/concerns in regard to processes and information constituted about 27.0% of their input into this SEA endeavour. These two sectors constituted 212 views in total, and were expressed in essentially equal amounts.

More information:

Many public/stakeholders expressed their frustration over the limited amount of information they received through this SEA process in order to make decisions and provide opinions on possible tidal development. They were particularly concerned about limited information on the location of potential development sites, the possible timing associated with any development activities, the types of equipment that might be employed and just how such development might unfold through all of its stages. The introductory presentations made by NB Energy and by Jacques Whitford provided a general background for tidal energy potential in the Bay, but were obviously found not to be adequate for the needs of the public/stakeholder participants. Although this was a deliberate balancing act on the part of the SEA process in order to give more time for public/ stakeholder input, perhaps the process design and time split were not well advised. Almost certainly part of the problem was that the SEA process was new to the public/stakeholders, and they did not understand its intent and what it brought to the table.

Weak SEA/EIA Processes:

Previous public/stakeholder consultations by government have typically been in regard to the Environmental Impact Assessment (EIA) process as it related to specific projects. Since many of these consultations have appeared to be foregone conclusions of "acceptance with remediation" from a public/stakeholder perspective, a significant public trust deficit exists in regard to the seriousness of such processes, recently reinforced by the regional LNG hearing process conducted in the lower Bay. At this stage of the hitherto unknown NB SEA process, the public does not distinguish between it and the EIA process, so their scepticism is thought to be well founded. However, with this initiative they are beginning to understand the SEA process and there were glimmers of appreciation and hope which could grow if they actually see their input making its way into policy relative to tidal development.

This possible improvement in the SEA consultative process relative to tidal energy will not likely translate into an improved public/ stakeholder perspective on EIAs for tidal energy projects unless that process also becomes more meaningful. In fact, it is more likely that if the EIA process remains disappointing, that it will spill over into the SEA realm and reduce its acceptance and effectiveness.

A current weakness of this SEA process in regard to tidal energy development is the lack of direct consultation with fishermen stakeholders, who have valuable information to contribute and a significant vested interest in offshore development. They were under the impression from communications with a previous New Brunswick Minister of Energy that they would be consulted directly on any proposed tidal energy development activity, and were not (yet). This is a simmering cauldron which should be dealt with on a priority basis before it has the opportunity to boil over and destroy the goodwill that this SEA process has stimulated to emerge.

Also in terms of participation in the consultative process, enhanced provision should be made for the direct involvement of coastal communities and aboriginals. They too have a vested interest in tidal development and should have the opportunity to express their views relative to if, how, where and when any such development will occur since it could very much impact their economies and lifestyles in many ways. The broadly-based public forum approach as used in this SEA process will not do justice to their needs. Like fishermen, both communities and aboriginals should be consulted directly on their turf, and if required, travel funding should be provided to allow them to participate effectively.

Another potentially harmful issue is one based on semantics: one that could be seen as a twisting of words relative to approved tidal energy activities. It was said directly to public/stakeholders at the SEA sessions that no "projects" had been approved, and in the absolute that was true. However, the questions from the public/stakeholders on this really meant has "anything" been approved yet, and indeed several research sites have been and were approved during the consultative process. Their concern was very likely based on their experience that test sites typically lead to commercial sites due to the investment put into them, and are difficult to stop once begun. This is another issue which should be clarified immediately before it is made public by the media, which might threaten the credibility of the SEA process.

In support of all of these possible issues, a clear and transparent process needs to be employed and needs to be seen to be employed in order to develop the credibility this SEA process requires to be successful.

An alternative element to this NB SEA process which could contribute a greater perspective might be the use of a "paired comparison matrix" as suggested by one aboriginal participant. Essentially it involves lining up traditional knowledge on one side and its comparative scientific counter-part on the other, and attempting to look at the two as though they were equal in weight. It would be an interesting exercise, and perhaps a good approach when considering more specific consultations with aboriginals in regard to tidal energy development.

6.2 Providing a Solid Foundation

What is important in order to establish a solid basis for possible tidal energy development is that the principal stakeholders are consulted in a meaningful manner, and that adequate information is provided to them so that their questions are answered and they can make rational decisions. The NB SEA process to date has been a good first step, but a second step needs to be done to complete the process.

From a pragmatic perspective there are really four groups involved: fishermen, coastal communities, aboriginals and the general public. The latter has essentially been addressed through this SEA process, although the provision of more information would be appropriate. As for fishermen, coastal communities and aboriginals, a significant void exists which should be filled as soon as possible with meaningful consultation on a group by group basis. Although tourism is a major player in this process, it is included within the coastal communities group.

In support of these consultations, additional information on the possible location of potential development sites, the timeframe associated with any development activities, the types of equipment that might be employed and just how such development might unfold should be collected and presented to the three focus groups noted. It should be kept in mind that each of these groups have different perspectives and information needs, so the presentations to each should be tailored accordingly.

Completion of these tasks should finish this NB SEA process, and provide a solid foundation for a provincial policy on tidal energy development in New Brunswick's Bay of Fundy coastal waters.

6.3 Recommendations

Recommendation 6: The Province of New Brunswick should compile all existing information on the possible location of potential development sites, the timeframe associated with any development activities, the types of equipment that might be employed and just how such development might unfold through all of its stages, and prepare presentations oriented toward each stakeholder group as a basis for the finalization of this SEA process.

Recommendation 7: The Province of New Brunswick should hold immediate consultations with stakeholders of all marine industry sectors (in particular with commercial fisheries) on an individual group basis throughout the Bay of Fundy to clarify government tidal energy development objectives and the SEA process, and solicit their opinions and involvement both now and in further development activities.

Recommendation 8: The Province of New Brunswick should immediately clarify with both Bay of Fundy stakeholders and coastal communities the current

process underway in terms of tidal energy permits for exploration and research, so that a transparency of process is supported and seen to be supported. In addition, some form of regular timely communications mechanism (possibly an electronic newsletter) should be developed to keep these stakeholders and communities informed of all further tidal energy development activities in the Bay, which would allow them to respond accordingly.

Recommendation 9: The Province of New Brunswick should, in the very near future, hold consultations with coastal communities and aboriginals on a group by group basis throughout the Bay of Fundy to clarify government tidal energy development objectives and the SEA process, and solicit their opinions and involvement both now and in further development activities.

7. Recognizing Relevance/Managing Development

7.1 Public/Stakeholders Opinions/Concerns

As indicated in Section 4, public/stakeholder opinion/concerns in regard to managing tidal energy development and its associated components constituted about 22.1% of their input into this SEA endeavour. The two principal sectors of management and technology constituted 142 views in essentially equal amounts, followed by data gaps/research with almost half of either at 31 views, for a total of 173.

Managing Development:

If tidal power is going to be developed, there was significant support for doing it for the right reasons, which meant that it should not be done in isolation of other renewable and non-renewable energy production, but done within the context of balancing/ complementing such sources for the mix best suited to provincial goals. From a more focused perspective, it should ideally be done when it can be taken as an opportunity to reduce the carbon footprint of current coal, oil and gas energy sources, thereby allowing the reduction of non-renewable energy use as part of a conservation strategy, as opposed to an export opportunity.

In the management of such tidal development, and in all associated government activities and agencies, there should be a clear assignment of responsibility and accountability (who does what, when, where and how), and this information should be made available to all the public/stakeholders. The public/stakeholders have often faced an anonymous government management regime in terms of natural resource development, and want to know who is making the decisions and on what basis, so that they can be held accountable. Simply pointing to the Minister's office as has often been the case is not good enough, unless it is the reality, but even that should be known if it is the situation. Another arm of this responsibility is the development of appropriate regulations which would have to be approved, implemented and enforced, and with the provision of adequate accompanying human and

financial resources available within NB Energy or other government agency to do so.

Since the public/ stakeholders feel a strong sense of ownership over the marine resources on their doorsteps, and are the most likely to be impacted, they feel a great need to be directly involved in the planning and management of tidal development in the Bay. Being fully in the loop and influential would go a long way toward having their full cooperation on the ground, which would be a great benefit to any development project, not to mention building greater trust in government.

As with the SEA process, the clear and transparent approach should obviously also be applied to any EIA processes which arise relative to tidal energy development. Although the EIA process is the responsibility of another provincial department, NB Energy should advocate for a tidal-project process that is done in a manner which meets public/stakeholder needs in the Bay.

In evaluating project development proposals, they should all be fully assessed, not only as to their financial viability, but also as to their impact on coastal communities, other marine industries and the Bay itself, both singly and cumulatively in association with other such developments. A full-cost-accounting protocol, including environmental impact, should be required as an essential component of each submission. Recognizing that every new marine activity will have some impact on the Bay and existing activities, provision should be made in all development proposals for both short and long-term compensation, and for remediation projects. Also, Included in any development project should be operational standards, obligations and plans which, if exceeded, would trigger a shut-down and removal of the installation in a pre-determined manner.

In the interests of minimizing negative impacts on the Bay, its natural resources and communities, the public/stakeholders feel that development should proceed in small stages in harmony with other marine activities and err on the side of caution. Such an approach would allow time for all sides to adjust to the emerging new circumstances. Similarly, it would allow time to assess impacts on the Bay itself so that installations could be withdrawn or alterations could be tried. It is suggested that these principles be basic to all tidal energy development in the Bay.

Appropriate Technology:

An array of different tidal energy technologies in different stages of development exist in the world, but there is limited understanding as to how applicable they might be to the Bay and its hydrodynamic circumstances. More information and testing should be required to assess their use both functionally relative to power goals and from the impact perspective.

Although at first glance larger power installations might seem more financially viable, from a coastal community perspective smaller units in smaller arrays may be preferable in order to minimize impacts and intrusions on existing marine activities and communities in the Bay, and to integrate with local development goals. In this context it was therefore suggested by public/stakeholders that development policy arising from this SEA process should focus on such small scale development, more of a local power contributor rather than a large grid power source.

Data gaps/research:

There were many unanswered questions relative to actual tidal installations brought up by the public/stakeholders in this SEA process which will need research/monitoring to provide a comfort level to project decision-making and management. However, other than the potential impacts of vibrations, noise and/or electromagnetics (Recommendation #5), no specific data gaps or necessary research activities were identified in this NB SEA process, although it was implied that more work would have to be done on the two areas that the Background Report suggested as potential commercial tidal energy development sites (Cape Enrage and Head Harbour Passage), in as much as several fishermen were against any such development as it appeared to conflict with their fishing activities.

In the Background Report there are some 56 recommendations in regard to more work that should be done to overcome data gaps and research needs, and it is acknowledged that the information that would be collected if all of this work was done would be very beneficial to future decision-making regarding tidal energy development. One significant component of this grand array notes the need to develop a much better temporal and spatial database on the currents of the Bay of Fundy. Another focuses upon the need for data from fishermen on their fishing patterns and grounds, and the behaviour of the stocks they exploit seasonally. As appropriate and useful as these data would be to tidal energy development, it is not practical for government to pursue them up front and Bay-wide. These, like most of the other recommendations, should be site specific, and therefore should be the responsibility of a proponent to both seek out and finance as part of business development.

7.2 Making the Right Choices

Go slow and go carefully! Involve us and make it relevant to us! These are the mantras of the people of the Bay relative to tidal power development. There is no other way to say it; the stakeholders of the Bay will be directly affected by tidal development and therefore want their say in the process. If the New Brunswick Department of Energy is serious about their participation, as this NB SEA process implies, it can make it happen.

With the advent of this new/greener energy possibility amid dwindling non-renewable resources, and with no shortage of interested

developers, the opportunity exists to create a significant model of government/stakeholder/developer cooperation to the benefit of all. From the perspective of stakeholders, making the right choices means involving them in all aspects of tidal development and management, with communities getting benefits from what they perceive as their resources, while at the same time minimizing impacts on the ecosystem from which they derive their livelihoods. They are sceptical, based on past history, yet not without hope.

7.3 Recommendations

Recommendation 10: This NB SEA process set up by the Province of New Brunswick is intended to provide the basis for tidal development policy. Such policy should focus upon incremental development, done in harmony with other marine stakeholders, and with due consideration of the precautionary principle, utilizing a small scale/small unit perspective to meet community need rather than export opportunity. Its overall objective should be to complement the mix of energy production in the Province, and to promote a reduction in the total carbon footprint.

Recommendation 11: The Province of New Brunswick should set up a permanent NB Bay of Fundy Marine Energy Development Committee, with representatives of all relevant provincial departments, all marine industry sectors (including energy) and major coastal communities, and establish a travel expense fund for those non-government members who required it for participation in committee meetings. The responsibilities of the committee should be two-fold: (1) to plan for the long-term development of marine energy, and (2) to consider all tidal energy development proposals for the Bay of Fundy and to which proponents would have to justify their evaluations. The committee would make recommendations on planning and on each proposal to the Province, which would take them under advisement in decision-making. Any request to change the status of a project, from research base, to pilot, to demonstration, to commercial, should be required to go through the committee again. This recommendation should be in place prior to any tidal energy development project going beyond the research level.

Recommendation 12: The Province of New Brunswick should work to improve the EIA process to enhance public confidence so that, when applied to all tidal development projects in the Bay, they are seen to be more open and transparent, and decision-making is done based on known principles and adequate information.

Recommendation 13: The Province of New Brunswick should make a clear assignment of responsibility and accountability for tidal energy development within its structure (who does what, when, where and how), including that which might be the responsibility of other agencies, and this information should be made available to all the public/stakeholders; and appropriate regulations

should be developed, approved, implemented and enforced, with the resources identified within departmental budgets to do so.

Recommendation 14: In tidal energy development in the Bay of Fundy at any scale, whether pilot, demonstration or commercial, the Province of New Brunswick should require that every development proposal demonstrate its feasibility on a full-cost accounting basis, which would include not only its commercial investment potential, but also the financial impact of such development on the ecosystem, on other marine stakeholders, on coastal communities and on the province-wide energy situation. This assessment should include any anticipated offset by potential local benefits from such development.

Recommendation 15: The Province of New Brunswick should require that tidal energy developers indicate, within their project proposals, specifically how they will assess the effectiveness of the technology they intend to employ, and how they will assess the possible impacts of that technology on the Bay of Fundy ecosystem (both living and non-living components), and be required to submit that data and information on a timely basis to relevant provincial departments and the NB Bay of Fundy Marine Energy Development Committee.

Recommendation 16: The Province of New Brunswick should anticipate that any tidal energy development in the Bay of Fundy will entail some level of impact, directly or indirectly, on the ecosystem, on other marine stakeholders and on coastal communities. On a project by project basis, it should require that proponents establish a compensation fund to remediate such impacts, and that an impartial group be set up to assess ecosystem impacts and associated remediation projects, and to assess short and long-term compensation to affected stakeholders and communities, with a timely delivery process and an independent appeal process.

Recommendation 17: The Province of New Brunswick should require that all tidal energy development proposals for the Bay of Fundy include a shut down and removal process based on specific physical, biological and financial criteria, and that each such proposal also include a monitoring and reporting process to address these criteria, such information to be delivered in a timely manner to provincial personnel who have the assigned responsibility to manage this process.

8. Integrated Management of the Bay of Fundy

8.1 The Process and Its Parts

Integrated management means understanding all of the resources/parameters that are to be managed, and involving all of the stakeholders in the process of working toward the long-term betterment of the Bay. It is a slow and complicated process because it takes all factors and perspectives into account in its decision-making; even the decision-making process itself and its operational principles must be agreed upon. Consensus is the goal.

In the Bay of Fundy, tidal energy development would be only one among many players, a group which also includes fisheries, aquaculture, tourism, recreation, shipping, transportation, research, communications, military and others. In addition, the natural resources on which these sectors depend must be considered, and include the fish and shellfish, whales and other marine mammals, birds, the marine food web, coastline features and the dynamics of the Bay itself plus other characteristics. Nor are these aspects static. They change both over time seasonally and long term, and over space; different areas in the Bay have different hydrodynamic characteristics and are populated by different organisms. Human activities also change in time, place and interests.

So, what type of structure can bring these diverse elements together and produce meaningful goals and achievements in the best interests of the Bay and its inhabitants? Obviously it would require a multi-facetted group, with many topic-oriented sub-groups, with substantial resources supporting its operation. All levels of government would be involved, as well as stakeholders and other relevant groups. And significant time would be needed to arrive at common goals and objectives, not to mention their acceptance and implementation.

This is a long term and expensive process. For this reason it cannot be part of the near term plans of tidal energy development, but one that must ultimately happen in the best interests of all elements of the ecosystem. The federal Department of Fisheries and Oceans (DFO) has been considering integrated management in the Bay of Fundy for years, but has yet to pursue it in total, although several groups are currently attempting to oversee parts of this process in different parts of the Bay. In fact, DFO and the New Brunswick Department of Agriculture and Aquaculture are jointly sponsoring an initiative of this nature entitled the Southwest New Brunswick Marine Resources Initiative covering the area from Saint John to the US border. As tidal energy develops, NB Energy and proponents should become participants in or more so and supporters of Bay of Fundy integrated management processes.

8.2 Cumulative Impacts

A basic element of integrated management is the consideration of cumulative impact; the holistic picture. Tidal energy proponents cannot be

expected to assess their particular projects as contributing elements toward the cumulative impact of all tidal energy projects on the Bay of Fundy, much less of the impacts of all activities on the Bay of Fundy. Such proponents should only be required to tailor their possible impacts to meet certain guidelines set by government. The broad perspective must remain a government responsibility, in support of which, studies should be carried out to determine the overall carrying capacity of the New Brunswick side of the Bay in terms of various tidal energy development technologies. This work must also be coordinated with other agencies at all levels, especially with the Province of Nova Scotia and the State of Maine relative to their sides of the Bay, to see that all marine activities are accommodated as appropriate to changing government priorities.

8.3 Recommendations

Recommendation 18: As tidal energy develops, the Province of New Brunswick and tidal energy industry proponents should promote and become a part of or more involved in the integrated management process within the Bay of Fundy, and work toward the betterment of the Bay as a whole, rather than the more-limited interests of the tidal energy sector, starting with participation in existing groups working toward such goals in their operational regions.

Recommendation 19: The Province of New Brunswick should work with the Province of Nova Scotia, the State of Maine and appropriate federal agencies to initiate a cumulative impact assessment process for tidal energy development in the Bay of Fundy, upon the results of which to base its tidal energy development capacity guidelines and future planning initiatives.

9. Fulfilling the NB SEA Mandate

To fulfill the NB SEA mandate taken on in this project as laid out in Section 1, this project would have to have answered all of the six questions asked, and therefore completed the intended process as laid out in the BoFEP proposal which was accepted by the New Brunswick Department of Energy. For reasons that will be explained relative to each of the questions, this project could not fully answer them all. The questions and their answers are as follows:

- Whether marine renewable energy technologies, and specifically tidal in-stream technology, can be developed in the Bay of Fundy without significant impacts on the marine ecosystem.

Yes, but only under the full array of conditions recommended. In particular, turbines should be kept out of ecologically sensitive areas where whales congregate, and narrow passages through which marine mammals, fish and shellfish migrate seasonally. Cumulative impacts must also be taken into consideration in the longer term.

- Whether these technologies can be developed without significant socioeconomic impacts on fishermen and the fisheries and on other marine and coastal resource users.

Yes, but only under the full array of conditions recommended. The full/ meaningful involvement and cooperation of fishermen in all stages of development and management is essential to accomplish this.

- What contribution marine renewable energy technologies can make to community and regional economic development in New Brunswick.

They can make significant financial, employment and business contributions to communities and regional economic development if the benefits are distributed in the manner as recommended. A strong sense of "local consumption at preferred rates" exists among coastal communities.

- Whether, and under what conditions pilot projects should be permitted.

Pilot projects should be permitted when their antecedent research projects indicate minimal impacts on the ecosystem and other marine industries, and their proposals fall within the guidelines recommended.

- What ongoing research and monitoring is required to gather the information needed to make decisions about commercial developments.

This question cannot really be answered. It depends on data from the research, pilot and demonstration project permits. Obviously collecting environmental, hydrodynamic and financial data would be required. The only research issue that was brought up at the consultation sessions was that of potential vibrations/noise/electromagnetic impacts on fish and their movements from tidal energy devices and their attendant submerged transmission lines.

- Other steps required to determine whether, where and how commercial projects should be developed, regulated and managed.

These steps cannot be determined up front, but will be determined through the process as put forth in the recommendations.

Even though not all questions were answered completely, this project has completed the process it undertook. However, with the implementation of the attached recommendations, this NB SEA process should be finalized.

Summary of Recommendations

These recommendations are individually directed to the Province of New Brunswick, since that is where the authority ultimately resides, but it should be recognized that the NB Department of Energy or another provincial

department may bear the responsibility to implement any particular recommendation if adopted by the Province.

Recommendation 1: The Province of New Brunswick should establish and make public its priorities for tidal energy development in the Bay of Fundy in terms of how it will fit into the overall NB energy picture, the flow of benefits and how such development will affect communities. In particular, it should acknowledge that local benefits have priority in the Province and over exports, and should require that all proponents identify the type and extent of such benefits in their project proposals.

Recommendation 2: The Province of New Brunswick should immediately involve fishermen, and other marine industry representatives, in the process of site selection and approval at all stages, even at the beginning research level. On any new site application all relevant provincial departments should work with local fishermen and others to determine whether it should go ahead, and if so, the objectives and conditions under which it should do so. Such conditions should include as a standard element an oversight mechanism with fishermen members. This recommendation to be superseded by Recommendation 11 as sites progress beyond the research level.

Recommendation 3: On any site which is approved to go beyond the research level, the Province of New Brunswick should set up a process to consult/negotiate with local coastal communities and the proponent regarding the potential requirements of specific tidal development projects, and the possible benefits that might accrue, with specific recognition of the human and financial resource implications for all three parties; agreements to be ratified by the NB Bay of Fundy Marine Energy Development Committee (see Recommendation 11).

Recommendation 4: The Province of New Brunswick should specify within its tidal energy development policy that no areas which consist of narrow channels through which marine mammals, fish and/or shellfish migrate seasonally will be considered for tidal energy generation. Such areas should be defined in the near future, with the help of fishermen and the Southwest New Brunswick Marine Resources Initiative, and excluded from further consideration. Applications which come in prior to this determination should have to establish that such migrations do not occur in their areas of interest.

Recommendation 5: The Province of New Brunswick should instigate a research project to determine the possible impacts of vibrations, noise or electromagnetic interference on fish, shellfish and marine mammals and their movements from tidal energy devices and their associated transmission lines.

Recommendation 6: The Province of New Brunswick should compile all existing information on the possible location of potential development sites, the timeframe associated with any development activities, the types of equipment

that might be employed and just how such development might unfold through all of its stages, and prepare presentations oriented toward each stakeholder group as a basis for the finalization of this SEA process.

Recommendation 7: The Province of New Brunswick should hold immediate consultations with stakeholders of all marine industry sectors (in particular with commercial fisheries) on an individual group basis throughout the Bay of Fundy to clarify government tidal energy development objectives and the SEA process, and solicit their opinions and involvement both now and in further development activities.

Recommendation 8: The Province of New Brunswick should immediately clarify with both Bay of Fundy stakeholders and coastal communities the current process underway in terms of tidal energy permits for exploration and research, so that a transparency of process is supported and seen to be supported. In addition, some form of regular timely communications mechanism (possibly an electronic newsletter) should be developed to keep these stakeholders and communities informed of all further tidal energy development activities in the Bay, which would allow them to respond accordingly.

Recommendation 9: The Province of New Brunswick should, in the very near future, hold consultations with coastal communities and aboriginals on a group by group basis throughout the Bay of Fundy to clarify government tidal energy development objectives and the SEA process, and solicit their opinions and involvement both now and in further development activities.

Recommendation 10: This NB SEA process set up by the Province of New Brunswick is intended to provide the basis for tidal development policy. Such policy should focus upon incremental development, done in harmony with other marine stakeholders, and with due consideration of the precautionary principle, utilizing a small scale/small unit perspective to meet community need rather than export opportunity. Its overall objective should be to complement the mix of energy production in the Province, and to promote a reduction in the total carbon footprint.

Recommendation 11: The Province of New Brunswick should set up a permanent NB Bay of Fundy Marine Energy Development Committee, with representatives of all relevant provincial departments, all marine industry sectors (including energy) and major coastal communities, and establish a travel expense fund for those non-government members who required it for participation in committee meetings. The responsibilities of the committee should be two-fold: (1) to plan for the long-term development of marine energy, and (2) to consider all tidal energy development proposals for the Bay of Fundy and to which proponents would have to justify their evaluations. The committee would make recommendations on planning and on each proposal to the Province, which

would take them under advisement in decision-making. Any request to change the status of a project, from research base, to pilot, to demonstration, to commercial, should be required to go through the committee again. This recommendation should be in place prior to any tidal energy development project going beyond the research level.

Recommendation 12: The Province of New Brunswick should work to improve the EIA process to enhance public confidence so that, when applied to all tidal development projects in the Bay, they are seen to be more open and transparent, and decision-making is done based on known principles and adequate information.

Recommendation 13: The Province of New Brunswick should make a clear assignment of responsibility and accountability for tidal energy development within its structure (who does what, when, where and how), including that which might be the responsibility of other agencies, and this information should be made available to all the public/stakeholders; and appropriate regulations should be developed, approved, implemented and enforced, with the resources identified within departmental budgets to do so.

Recommendation 14: In tidal energy development in the Bay of Fundy at any scale, whether pilot, demonstration or commercial, the Province of New Brunswick should require that every development proposal demonstrate its feasibility on a full-cost accounting basis, which would include not only its commercial investment potential, but also the financial impact of such development on the ecosystem, on other marine stakeholders, on coastal communities and on the province-wide energy situation. This assessment should include any anticipated offset by potential local benefits from such development.

Recommendation 15: The Province of New Brunswick should require that tidal energy developers indicate, within their project proposals, specifically how they will assess the effectiveness of the technology they intend to employ, and how they will assess the possible impacts of that technology on the Bay of Fundy ecosystem (both living and non-living components), and be required to submit that data and information on a timely basis to relevant provincial departments and the NB Bay of Fundy Marine Energy Development Committee.

Recommendation 16: The Province of New Brunswick should anticipate that any tidal energy development in the Bay of Fundy will entail some level of impact, directly or indirectly, on the ecosystem, on other marine stakeholders and on coastal communities. On a project by project basis, it should require that proponents establish a compensation fund to remediate such impacts, and that an impartial group be set up to assess ecosystem impacts and associated

remediation projects, and to assess short and long-term compensation to affected stakeholders and communities, with a timely delivery process and an independent appeal process.

Recommendation 17: The Province of New Brunswick should require that all tidal energy development proposals for the Bay of Fundy include a shut down and removal process based on specific physical, biological and financial criteria, and that each such proposal also include a monitoring and reporting process to address these criteria, such information to be delivered in a timely manner to provincial personnel who have the assigned responsibility to manage this process.

Recommendation 18: As tidal energy develops, the Province of New Brunswick and tidal energy industry proponents should promote and become a part of or more involved in the integrated management process within the Bay of Fundy, and work toward the betterment of the Bay as a whole, rather than the more-limited interests of the tidal energy sector, starting with participation in existing groups working toward such goals in their operational regions.

Recommendation 19: The Province of New Brunswick should work with the Province of Nova Scotia, the State of Maine and appropriate federal agencies to initiate a cumulative impact assessment process for tidal energy development in the Bay of Fundy, upon the results of which to base its tidal energy development capacity guidelines and future planning initiatives.

Appendices

A Participating Personnel

B Venues, Schedule and Notice

C Introductory Presentations

D Open House Transcripts

E Submitted Positions

F Public Participants

Appendix A

Participating Personnel

Appendix A

Participating Personnel

Open House Participants:

Barry Jones	Gryffyn Coastal Management, BoFEP Project Manager
Arthur Bull	Open House Facilitator
Heather Quinn	NB Department of Energy, Project Liaison & Presenter
Tony Daye	Jacques Whitford, Background Report Presenter
John Antworth	NB Department of Natural Resources, Map Coordinator
Pierre Doucet	NB Department of Environment
Bill Breckenridge	NB Department of Energy
David Maguire	NB Department of Environment
Russell Henry	NB Department of Fisheries
David Whyte	NB Department of Environment

Supporting Personnel:

Jon Percy	Seapen Communications, BoFEP Website Coordinator
Patricia Hinch	BoFEP Treasurer, Account Manager
Judy Hiscock	Skyline Transcription Services
Susan Farquharson	NB Department of Fisheries

New Brunswick Departmental Oversight Team:

Heather Quinn	Department of Energy
John Antworth	Department of Natural Resources
Pierre Doucet & David Maguire	Department of Environment
Russell Henry & Susan Farquharson	Department of Fisheries

BoFEP Project Review Team:

Marianne Janowicz	NB Department of Environment
Owen Washburn	Washburn & Associates
Peter Fenety	Fenety & Associates
Peter Wells	BoFEP Chair

Appendix B

Venues, Schedule and Notice

NB Tidal Energy Public Consultation Itinerary (7 Sites)

Week 1:

Alma	**April 1**, Tuesday (7:00 – 9:00 pm) Conference Room, Community Centre Main Street, Alma (ph. 887-6123)
Moncton	**April 2**, Wednesday, (7:00 – 9:00 pm) Lounge, Lions Senior Citizens Centre 473 St. George Blvd., Moncton (ph. 382-8560)
Saint John	**April 3**, Thursday (7:00 – 9:00 pm) Bayside Middle School 75 Bayside Drive, Saint John (ph. 658-5331)

Week 2:

Grand Manan Island	**April 7**, Monday (7:00 – 9:00 pm) Great Hall, Grand Manan Community School 1144 Rte. 776, Grand Manan (ph. 662-7000)
Campobello Island	**April 8**, Tuesday (7:00 – 9:00 pm) Campobello Island Consolidated School 1722 Rte. 774, Wilson's Beach (ph. 752-7000)
St. George	**April 9**, Wednesday (7:00 – 9:00 pm) Theatre, Fundy High School 44 Mt. Pleasant Rd., St. George (ph. 755-4005)

Week 3:

Deer Island	**April 15**, Tuesday (7:00 – 9:00 pm) Cafeteria, Deer Island Community School Lord's Cove (ph. 747-7003)

Tidal Power in the Bay Fundy? Be a part of it!

The Province of New Brunswick wants to hear your views

The Province of New Brunswick invites you to learn more about tidal power research and opportunities in the Bay of Fundy and to voice your opinion at an open house in your community. As part of the Strategic Environmental Assessment (SEA) on possible tidal power development in the Bay of Fundy, the New Brunswick Department of Energy has partnered with the Bay of Fundy Ecosystem Partnership (BoFEP) to conduct a series of open houses and consultations around coastal communities in the province to which the general public and marine stakeholders are invited.

All public forums will be held between 7:00 pm and 9:00 pm on the below dates.

The dates and location of these open houses are as follows:

Community	Date	Location
Alma	April 1	Community Centre, Main Street
Moncton	April 2	Lions Senior Citizens Centre, 473 St. George Blvd.
Saint John	April 3	Bayside Middle School, 75 Bayside Drive
Grand Manan Island	April 7	Grand Manan Community School, 1144 Rte. 776
Campobello Island	April 8	Campobello Island Consolidated School, 1722 Rte. 774
St. George	April 9	Fundy High School, 44 Mt. Pleasant Rd.
Deer Island	April 15	Deer Island Community School, Lord's Cove

Background materials will be available at these sessions, and will be placed in local libraries and municipal offices. Further information can also be found on the BoFEP website at *www.bofep.org.*

The public is also encouraged to provide written submissions expressing their opinions and views directly to BoFEP. Written submission's should be sent to the following address;

NB SEA Project
626 Churchill Row
Fredericton, NB, E3B 1P6.

Submissions can also be posted on line at the BoFEP website.

Please share your thoughts with us. This is your opportunity to influence the direction of possible tidal development in our coastal waters!

New Nouveau Brunswick
Be...in this place • Être...ici on le peut

Appendix C

Introductory Presentations

NB SEA TIDAL ENERGY
Open House Presentation

Facilitator (Arthur Bull)

So first of all, I'd like to welcome you and thank you for coming out this evening. My name's Arthur Bull, and I'm going to be facilitating the session this evening. This is the first open house in a series of six about tidal energy in the Bay of Fundy. So, we're just starting out. We may be getting the bugs out a little bit of the system as we go, so bear with us.

This process of talking about tidal energy in the Bay of Fundy is part of something called a strategic environmental assessment, SEA, and it's being put on by the province of New Brunswick, Department of Energy, in partnership with the organization that I'm working with. It's called the Bay of Fundy Ecosystem Project. And so we're convening these workshops working with the department. And I'll say a little bit about that strategic environmental assessment process in a minute, and I think we'll hear more about that later too.

But let me just tell you a little bit about this organization that's putting it on so you'll know where we're coming from. The Bay of Fundy Ecosystem Partnership, it's something that's called BOFEP, is a non-profit, non-governmental organization that some people call a virtual institute. But the main thing that they're involved with is promoting healthy ecosystems and biodiversity and productivity in the Bay of Fundy. But also, they do a lot of convening and communication, bringing people together around issues relating to the Bay of Fundy ecosystem. So, that's how we get involved in this.

And really, this is part of — These open houses are part of this process called Strategic Environmental Assessment, or SEA. Some of the people call it a sea-a, and it's all about tidal energy in the Bay of Fundy. What's interesting about this process is it's a little different from what we're used to in coastal communities in that it's — usually there's a particular project, a particular company putting together a particular proposal to do something and we react to that. What's different about this is it's actually about this whole notion of tidal energy in the Bay of Fundy, and it's really a way of finding out what people in the coastal communities of the Bay of Fundy area of New Brunswick think about this whole idea. You know, the ideas that have, the concerns they have, the questions they have, and it's a way of looking at this more broadly, first of all. So, it's not just, should we put a turbine in this Bay, yes or no.

So this is part of a process that's about getting that heard and getting that to the provincial government so that they can make their deliberations. So part of that is these open house, so called, that we're having. As I say, actually, there's seven altogether, by the time we're done.

And, as well as that, people can also put in written comments, and there's information at the back about where you can put that in, and there's

also some questions with that. There's a sheet at the back. You don't' have to answer the questions. They're just there to kind of get you started thinking and talking, the kind of questions like: what do you think about this idea in general? Do you have concerns? Are there places you think this would be okay or places where you think it wouldn't be okay? Those kind of questions. But there is that way of putting in your input, as well as there's an online way of doing it on a website, and that information's at the back too.

So, there's a number of ways for the citizens of the coastal communities of the Bay of Fundy to give their input into this process. And what's going to happen then is our organization is going to write a report based on all of that and submit it to the province. And so that's really our job, is to make sure your voices are heard and all your questions, concerns, are taken and reflected in that report.

As well, I should mention that, just to make sure that happens, we're actually going to record all these open house sessions, and transcribe them. That is, we're going to take this word for word and put it on paper. And so that will be part of it, and so you know, that's really our job and our responsibility is to ensure that all those concerns and voices get into that report. And so I should tell you, actually, the way we're doing that is using these mics. The mics, I just learned, are actually attached to the PA system, so you still have to speak up. The mics are for the recording. So when we get to the point where we're asking you to speak, we'll ask you to actually come up to the mics, because if you're not speaking to the mic, it won't get recorded. And I think it's important to get your comments on paper and into the report.

So that's really our job, and I'm going to mention one other way to give input, which I think is a really interesting way, and that is that there's maps at the back. I think most of you have seen them at the back. And we encourage you to actually write on the maps, draw on the maps, whether it be general things, like lobster bottom or whatever, or specific things like here's a place I'm concerned about, whatever. We really encourage you to do that as well. That will also be rolled into this overall process. I know it's hard to mess up a map, but somebody should go first and do it, just so you can jump in there and show. Because sometimes when we're talking about places, it's really important to say specific places and show us what you mean.

So I'm going to get to the agenda in a second. There's not really a complicated agenda. But before I do that, I just want to introduce a couple of people who are up here. One is Heather Quinn from the Department of Energy, and Heather's going to give us some background information. And Tony Daye is here from Jacques Whitford. And this is something I didn't mention is that an important part of the SEA process is a report that was done for Nova Scotia and New Brunswick, that was a background report, so the purpose of that was to inform this process. And that report is at the back. There's a limited number of copies. It's also online. It's quite a big report, but there's a very good executive summary, so I encourage you to see that. And also, if you're with an

organization, fishermen's association, because there's a few copies, you could maybe take one or take the digital version and share it. But it is back there and it's an important part of this whole discussion.

So I think we'll just — What I'd like to do is actually, before we go any further, just maybe go around the room just to get a sense — I have a feeling most of you know each other, but it would be good just to get a sense of who's here, and maybe just your name and where you're from, and if you're with an organization, association, or whatever, then just let us know. So if we could quickly do that, I think that would be helpful to give us a bit of background.

NB SEA TIDAL ENERGY
Open House Presentation

Jacques Whitford (Tony Daye)

Okay, maybe I'll just start out by telling those of you who are here a little bit about Jacques Whitford and our role in this process. Jacques Whitford is an environmental engineering firm, and we were retained to write this report and develop the report along with some of our other partners. It was commissioned jointly by the Offshore Energy Environmental Research Association, which is an association out of Nova Scotia, and also the New Brunswick Department of Energy.

Our project partners on this, we had Huntsman Marine Science Centre, Acadia Centre for Estuarine Research, Devine Tarbell & Associates, W.F. Baird & Associates, and J. Calvesbert Consulting. So we did have input from a number of experienced engineers, marine scientists, fisheries and so on. There's more on the next slide there.

The key study objectives of our report really were to establish the baseline work that's been conducted. The report did not acquire any new data, or any new information. It was a consolidation of existing information to identify gaps and inconsistencies in what is available, and review technology development and alternatives, as well as a few more. Address potential environmental and socio-economic interactions. So, by that, looking at what potential economic benefits could exist, what the interactions may be, including environmental, as well. Also, look at potential mitigative measure, to avoid, reduce and offset any adverse effect. Just to make sure that we looked at the data that we had on hand, and if there was anything that definitely stood out, we could comment on. As well as identify approaches to enhance the socio-economic benefits. So potential infrastructure, upgrades to roads, potential creation of jobs, local activity that could enhance community involvement, for those communities that are associated ------ potential developments. And also advise on scope of potential monitoring, so basically, as these projects unfold, what that might entail.

This is the study area. You can see it's the Bay of Fundy on both the New Brunswick and the Nova Scotia sides. There is a faint, grey line that runs between the two provinces and down towards Maine. Those are both provincial jurisdictions, and that area that's blocked in is the complete study area for the SEA, which is the Strategic Environmental Assessment, and our report is the background report to support the SEA and to feed information and public consultations that follow from that.

So we did encounter a number of study limitations within the background report. Obviously, readily available data. Some information was not easy to come by, and some data still requires some research. Information gaps, environmental, socioeconomic conditions, so potential environmental

interactions, as well. When we say environmental interactions, that would be potential effects of technology development on the environment, and no vice versa, so we did not look at all on how the environment might affect the devices, it was more along how the devices, or potential development and construction could affect what interactions they would have with the environment.

It's also important to note that this is not environmental assessment. All projects, should any go forward, would still be subject to a full environmental assessment, which is a federal and provincial regulatory process, which is very rigorous to go through, and no project, certainly, would be able to proceed without that. It was also not intended as impact assessment. We looked at potential interactions as the key focus.

Our study methodology. The way we proceeded was that we looked at relevant issues, concerns. Through this, we came up with what were called VECs. So these are Valued Environmental Components and Valued Socioeconomic Components. So the key environmental issues and the key socioeconomic issues, so what might be a potential interaction with the environment and how might the local communities benefit, or what might the impact and interactions be. As well as to outline historical trends for both of these that could possibly relate to projects and activities within the region.

In addition to that, we looked at establishing thresholds for acceptable developments, so as to not rush into anything, what the predicted interactions would be, and of course, mitigation monitoring requirements, and establish best practices to ensure, like the resource management for future development, should development proceed.

Basically, as I mentioned, the background report to the SEA was intended to facilitate the SEA process, or the Strategic Environmental Assessment process, which was being conducted through OEER, which again was the Offshore Energy Environmental Research Association. I should mention that a copy of the background report is available on the OEER website if anyone's interested. You can certainly reach it through that. As well as key components were identified through the keys, so that's the key environmental interactions and data gaps and recommendations for future work.

The main uncertainties with TISEC. TISEC is Tidal In-stream Energy Conversion development in the Bay of Fundy. We found the main uncertainties were attributed to the new technologies and the limited experience. This is a new technology area that we're going into. When wind turbines first came out, there was a similar uncertainty as far as available data, how long they could last, what the effects would be and what the procedures would be. So this certainly is a new type of technology. It's a new type of generation. Also, the absence of monitoring programs, and what would have to be done as part of that, as well as continuing change in the Bay of Fundy. It used to be you could go back years and years ago and the icescape would be considerably — as a lot of you are aware — It's really different. This year, there wasn't as much ice for some

individuals that were trying to observe ice flows and so on. So the bay does continue to observe changes, and as well as fisheries. And then lack of site specific information. So data for specific sites, specific current flows, specific marine life information, there's still some gaps, which means, that is information that has to be acquired and feedback from communities on specific areas, as well.

So if anyone has any questions, certainly feel free to contact me. Those are my coordinates, and again, we were responsible for the background report to the SEA, and we have worked closely with both the New Brunswick and Nova Scotia Departments of Energy to facilitate the process.

NB SEA TIDAL ENERGY
Open House Presentation

NB Dept. of Energy (Heather Quinn)

Well, good evening, everyone, and I do appreciate the people that have travelled a little further than Alma for coming, and everyone in Alma for taking time to visit with us. I will apologize if it looks like I'm reading. If I don't, I will get off topic and take up more time than I intended. So I would rather hear from all of you. So I'm just going to give you a little bit of background information. I made a short presentation just because there's a lot of reports and titles. So this way, you can see them and you might visually pick them up a little better than if I just spill it out.

So, I guess, as Arthur said, my name is Heather Quinn. I am with the Department of Energy. My contact information is at the end of the presentation. And I do encourage you, at any time, even after this evening, if you want to talk one-on-one about anything, even after this process is over, or what the results were, you can call me anytime.

So, just to begin, I want to give you an overview of the network, governments and government departments that, both provincially and federally, that are working to develop marine energy in Canada. On the federal side, we've been working with a number of departments to ensure we comply with legislation and regulations, as well as identify any new regulations or legislations that might need to be written. There will be a number of permits and approvals required, as with any other project, federally as the industry grows and pursues development opportunities in the Bay of Fundy. Provincial governments have been working cooperatively as well, basically, all the coastal provinces in Quebec. You might wonder why Quebec, but there's a lot — When we say marine energy now, it's not just ocean. There's in-stream opportunities and rivers and large waterways, so Quebec has expressed their interest.

In addition to the general cooperation, we have been working extensively with Nova Scotia, and particularly, on the strategic environmental assessment process. In Nova Scotia, the Offshore Energy Environmental Research Association has been contracted to complete the SEA. And they have been extremely helpful to us in sharing the information that they've obtained through their public meetings and stuff. Together, we contracted for the background report from Jacques Whitford, that Tony will speak to.

Within New Brunswick, we've been working with a lot of different departments to identity opportunities for the development of the industry. The Department of the Environment, as Pierre Doucette mentioned, he's from Environment here tonight. They'll be looking at the project specific, environmental assessment, so if a project does gets proposed, it would go to Environment for EA approval. And the Department of Natural Resources, who

John Antworth is here tonight, will be the main allocator for development in the future.

The development of a strategic policy for land allocation is critical to sustainable development of any new industries in the Bay. We've brought maps here, as Arthur mentioned, and you are encouraged to participate in the mapping exercise. There's some sheets in the front to give descriptions of what you're marking on there and why.

Both departments of aquaculture and fisheries play an important role in identifying concerns of their industries. The Southwest Bay of Fundy marine resource's planning initiative, which I know doesn't really affect this area, but even that initiative has been a critical component of this whole process. And we incorporate their concerns, and consider tidal energy as a potential planning component as they develop their plan in future.

Business New Brunswick has a role in identifying these opportunities for New Brunswick, and the region and the supply chain and business diversification areas.

So, I guess, why are we talking about tidal energy once again, since it's been something that has revolved for centuries, really? As everyone here knows, we're home to some of the highest tides in the world. There's a vast amount of energy potential in those tides, and people have been exploring ways to use that energy for decades. Tidal energy currently promotes a number of international opportunities, cooperation and partnership, as the industry is building quickly in Europe. Clean, sustainable and indigenous forms of electricity generation are becoming increasingly important and valuable. And tidal power has the potential to contribute to lowering our carbon footprint and increasing our security of electricity supply. It can also help to maintain electricity rates once it's in. It wouldn't necessarily help to lower them.

There are also a number of business and economic opportunities associated with this emerging industry, from research to manufacturing, and spin-off opportunities, to the development of new technologies and exploring innovation. New Brunswick has the potential to develop a cluster of economic development around marine energy in the future.

The Department of Energy has found unique ways to support emerging industries, where normally it's a policy department and regulation and legislation, but we can help to support through research. In the last few years, we have invested in a number of research projects. The Electric Power Research Institute, Tidal and Stream Energy Conversion Projects was probably the first report to get the focussed attention of provincial ministries and the public. The report identified eight sites with potential for tidal power development, but recommended further research, as there were gaps in the data and information they obtained.

The Department of Energy then contacted the Huntsman Marine Science Centre, and a team of researchers to do a characterization of Head Harbour Passage, as it was one of the sites identified in the EPRI report. That report has been submitted, in draft, to the Department for review, and the final report is expected to be completed shortly.

New Brunswick and Nova Scotia were approached by the National Research Council, which is a federal department, to partner on the study that would look closer at the resource in certain areas in the Bay of Fundy, and both the provinces agreed to participate in that resource assessment. We should be getting preliminary results this spring.

The process of which everyone here is currently participating in is contributing to the development of Fundy tidal energy's strategic environmental assessment, and it began with the background report that Tony is going to speak to. It was completed in cooperation, as I said, with the province of Nova Scotia through the Offshore Energy Environmental Research Association. They also have a really good website about strategic environmental assessment, and a lot of the feedback and things that they've heard on the Nova Scotia side, which I'm sure are a lot of the same concerns as many of you have. So, it would be in your interest, if you are looking on the website for BOFEP, to also look at their website and read some of the information they've received.

So, we're now completing the SEA process through this series of events, and the Bay of Fundy Ecosystem Partnership has agreed to facilitate them, complete the report on the outcomes of these events and then write the final strategic environmental assessment for New Brunswick. It should be completed and available by summer, I would suspect.

In addition, the Department of Natural Resources has developed an interim policy that will help facilitate industry investment in research in the Bay of Fundy. Through an RFP process, DNR will permit proponents whose sights satisfy requirements to remain 1000m from existing allocated sights, to conduct research in a 25 hectare area. I would like to stress that no devices will be installed under this policy and no electricity will be generated for the grid; this also means no transmission will be constructed or cables lain in the water. Proponents will be permitted to collect data on water currents, bathymetry, general environmental data, and other physical characteristics of the areas they have been allocated to study. The data will then be submitted to DNR on a regular basis and added to their information for the purpose of developing a final policy on crown land allocation for tidal power in the Bay of Fundy.

So, I don't want to get into too much about the technology, but I did want to briefly mention it and give just a few visuals of things that are popping out as potential devices that may go in the water in the future. I can tell you that the United Kingdom has developed a marine energy testing area known as the European Marine Energy Center, or EMAC. The website at the top is basically there to give you a link to device developers, and it has a lot of information on all the different devices. There's new ones popping out almost

daily. People are still in testing in private phases. The Ocean Real Energy Group is a group in Canada that also has a lot of information on tidal energy and general background reports. So some of the devices you see in the pictures are just a sample of the vast number of technologies being developed around the world. As you can see, some have ducted turbines, and are the ones that have the tubes in the water can speed up through them. Others have open rotors like windmills, and others have enclosed, rotating devices that appear to have no blades. The one in your top left is open hydro, and it rotates within that casing, so it actually doesn't have any open blades.

Presently, there are no commercial scale applications anywhere in the world on any of these devices. Verdant Power, on the bottom left, has a pilot project in the East River in New York, and Clean Current on the bottom right, is actually a Canadian company, in B.C. that has completed a round of testing, and they're going for their second round of testing soon. Other devices are being tested at various stages around the world, with commercial applications on the books, but nothing developed yet.

One thing to note about the technology is that, unlike wind, the blades and the rotation of them is much slower, just due to the dense medium that it's rotating in. So, if you see the speed of a wind turbine spinning, you can imagine these would be much slower.

So, with the background I just mentioned, we now ask what's next for tidal power in New Brunswick. The Department of Energy will be reviewing the results of the current studies that are underway, as well as the feedback from the public through this series of events. The recommendations made by the Bay of Fundy Ecosystem Partnership will also be reviewed, and decisions made for direct next steps. In principle, the next steps may include additional research on the economics of this emerging industry, as well as reviewing what technology currently exists around the world and in Canada, the stages of development it is in, and the research capacity in Canada to pursue this industry as these questions are yet to be answered.

These events and public input on tidal energy is timely as the Department of Energy is currently reviewing its energy policy. There are mechanisms through provincial policy development that can support the emerging industry and guide its development in a sustainable manner.

In addition to policy development, regulations and legislation have to be reviewed at the provincial and federal level to determine if any new policies or regulations and legislation need to be written or passed, and if there's provisions in current regulations to permit development in the future. There are also international committees formed that are looking at developing codes and standards for the industry. These standards can take years to develop and cover everything from safety to terminology standards for the industry.

As Arthur mentioned, there's a questionnaire here this evening that may be useful in guiding your feedback. We do encourage you to read the questions, but as he said, it's not necessary to specifically answer the questions. If there's something not addressed in the questions that you have concerns about, we encourage you to write something to BOFEP about what specifically you would like to see addressed and any policies or regulations.

I do appreciate your time this evening and I do look forward to hearing what comes out of this. I've been fortunate to work on tidal energy for about three and a half years with the Department, essentially since the EPRI report started, which was the beginning of this whole process for us. I feel, actually, very fortunate to follow through a whole process and work through everything. It's rare for provincial departments to keep people that long, I think, to go through those processes.

If you have any further questions, like I said, please feel to come and see me after, write down my contact information. I have business cards. Even after this whole process is over, I'm hoping to still be there and still working on it. Thank you.

Appendix D

Open House Transcripts

Please note that for technical reasons only the public input portion of each session has been transcribed and is attached here.

NB SEA TIDAL ENERGY - ALMA
April 1, 2008

Alma CD1

Facilitator
Jacques Whitford
NB Energy

(Introductions)

Public Respondent: My name is Commander Dusty Miller. I'm a retired, senior military officer. And it would really be nice, as my friends here were talking, it would be nice, finally, to be in a community where we're on the leading edge of technology, but at what cost? I certainly applaud this group looking for alternative energy sources. What a great idea. We can't rely on fossil fuels. I don't want to appear to be the guy that's, you know, not in my backyard. We don't want this thing. But I was stationed in Annapolis Royal in 1980-81. Now, you guys were just little kids then. That tidal power project, I was there, I attended the same meeting that's happening here, and that thing turned into a bag of snakes. It was a disaster. Now, the problems were that it wasn't well planned, that it blocked the fishery. The striped bass that were coming in and out of the Annapolis River, a world class fishery, virtually destroyed. A friend of mine has a farm, 200 feet of his banks were eroded. The River caved in. The siltation problems. They had to shut down the program. It changed the dynamics of the bay. It changed the dynamics of the river. It changed the dynamics of the land.
My concerns are: What are the possible effects here? What is the possible environmental degradation to this area? To the Bay of Fundy? You haven't said anything about that. You haven't told us that. Before the people in this room are going to agree to it, they're going to want to know the impact on the fishery. Our source of income in this village, tourism, the park and the fishery. And most of the money comes from the fishery. Most of our lives depend on that. If you do something that destroys that, what the hell are we going to do then?

We rely on tourism. What's the visual impact? What are people — There are 400 houses being built, $1 million houses, just down the road. Are they going to come and want to see something that's not natural. They came here to see the natural part of New Brunswick. That's going to be important to us. So if the visual impact is negative, are we really going to want that?

Nova Scotia, in my understanding, from the research I've done, is Nova Scotia has a project that's been approved. Now, although we'd like to be on the leading edge of this technology, maybe

we'd be smart to wait and see how that works out. Don't jump in quite yet. Let them make the mistakes. They made the mistakes on the Annapolis tidal power project.

There are alternatives, and whether you like it or not, nuclear energy is clean. There's always wind power, there's solar power, there are other things we can do. You're going to have to do some convincing to get me on side.

Facilitator:

Public Respondent: I only got a couple of questions, and it's on the process. We know right now, does the province of New Brunswick have a proposal in? Does somebody want to develop something here? No. Okay. So Nova Scotia has a project in? It has been approved?

NB Energy:

Public Respondent: Okay. So their pilot project, did it go through a full environmental assessment?

NB Energy:

Public Respondent: It will have to before it starts? Or is it part of the environmental assessment process?

Jacques Whitford:

Public Respondent: Okay. So it hasn't technically been approved yet.

NB Energy:

Public Respondent: We find when things are announced politically, generally they go through.

NB Energy:

Public Respondent: Okay. So you guys have been tasked by the province to collect data that will determine whether they move forward with the project or don't move forward with the project, or will make up part of and environmental assessment if a project is proposed? Did I get that right?

NB Energy:

Public Respondent: Okay.

Public Respondent: ------ how you get the power from the turbine to wherever it's going?

NB Energy:

Public Respondent: It lays on the bottom? Just lays on the floor?

NB Energy:

Public Respondent: Okay. You introduced everybody from government departments. How come there's nobody here from the provincial Department of Fisheries?

NB Energy:

Public Respondent: One comment for the gentleman over there. Nuclear energy may be clean when it's being produced, but we still don't know what we're going to do with the waste and we don't want them mining uranium in our province.

Facilitator:

Public Respondent: I'm wondering if anybody here can tell me how much percent of the electricity that's produced in New Brunswick is used by the people of New Brunswick and how much is exported.

?

Public Respondent: Where do we import it from?

?

Public Respondent: When it's all done at the end of the year, are we to 100% of what we make or are we — Do we produce enough if we consumed it all ourselves in the province? I know we sell it and I know we buy it, but when it's all said and done, is the amount of energy being produced in the province, right now, more than the people of New Brunswick need?

NB Energy:

Public Respondent: Now, we're there already?

NB Energy:

Public Respondent: When Point Lepreau goes online, the second one, what do they project? Are they going to close, like Colson Cove and the one up north that's dirtier or are they just going to sell more juice?

What concerns me, is it appears to me from the second plant going in, the old one being refurbished, talk of tidal power; we have the wind stuff going in on the hills over here, we have uranium cats wondering all over the place in the woods here, claiming it all because it went up 10 times in so long, you know. It appears to me that some people in New Brunswick are getting into the business of selling electricity in the future because they think it's going to be a wise thing to do. I think we have to start off with the approach that we're not talking about providing the people of New Brunswick with energy when we're sitting here talking. We're talking about exporting energy to a whole bunch of cats down in the northern States, who need it and aren't willing to make it happen where they're at, by having nuclear power plants or something in the water, or whatever. Do you think that's true?

NB Energy:

Public Respondent: Do you agree with me that the energy being produced in New Brunswick is always going to be surplus in the future in order to have an export market into the northern United States?

NB Energy:

Public Respondent: How about any of you guys? Do any of you guys have an opinion about that?

Facilitator:

Public Respondent: I think I know the answer already ------

Facilitator:

Public Respondent: Karen Townsend. I'd like to make sure the word conservation is there in capital letters because I've noticed that as people — like somebody who's building a house — as they maybe find an alternative way to get energy, like some sort of geo-thermal heating or whatever, that instead of going, yah hoo, we can save so many thousand dollars a year heating our house, instead, they are building a house that's twice as big, because for that same amount of money, now they can heat that many more square feet. I don't think that's going to work getting us into the next decades with energy.

Facilitator:

NB Energy:

Public Respondent: As a fisherman, I'm just curious. Are you going to run a cable from here to Grand Manan or is it going to come inshore?

NB Energy:

Public Respondent: There's another concern as a fisherman. I know some of the questions are asked by some of the fisherman, like before this started, to a fella, I'm not sure who he was, on so-called buffer zones and stuff, of the turbines or whatever. What is the — Is there any set distance now to say how far you can't be fishing towards that turbine?

NB Energy:

Public Respondent: That happens to be a concern of ours of how much ground can it take up and where these so-called proposed eight sites are and —

NB Energy:

Public Respondent: I have seen it online there, but —

NB Energy:

Public Respondent: Is that also part of the assessment? Like say a buffer zone on these things?

NB Energy:

Facilitator:

Public Respondent: One of the proposed sites where they were talking, I'll say Cape Enrage, and that is not real wide across there anyway, and it's a very ------ fishing ground. I'll say, it's all good up there, so we don't know who's in it.

Jacques Whitford:

Facilitator:

Public Respondent: See, our whole shoreline, as well as the Nova Scotia shoreline is fished in along the shore. Like, from shore to shore.

Public Respondent: The whole upper bay is fished.

Public Respondent: Yeah, from one rock to the other, it's fished.

Public Respondent: Yeah, like you could set in along rocks, you could set in the middle, you know.

Facilitator:

Public Respondent: Low water ------

Public Respondent: Yeah, like we can only go to where the water will let us, but up there, you can put the boat right to shore.

Facilitator:

NB Energy:

Public Respondent: If you fellas are here in the summer, whoever done the assessment, you'll obviously see because you'll see where the traps are. I mean, it's obvious where we fish.

Facilitator:

Public Respondent: Yeah, there's scallops too, and that's where the cables and stuff would be a big factor.

NB Energy:

Public Respondent: ------ go there very far to drag.

NB Energy:

Public Respondent: That's the other concern with the cables. We don't want cables.

Jacques Whitford:

Facilitator:

Jacques Whitford:

Public Respondent: I've got a question about the cables and perhaps you can answer it. The cables that are transmitting electricity. Has there been any modelling or studies done on the effect that'll have on the fishery?

Jacques Whitford:

<u>Alma CD2</u>

Public Respondent: There would be AC or DC cables.

Public Respondent: I'll direct you to a study in the natural gas pipeline that was proposed from Washington state to Vancouver Island. And one of the reasons it was cancelled is because the movement of the liquid natural gas through that pipeline would disrupt all the bottom fish and all the crabs and clams and everything, anything that would move at all. It had a great effect on it. One of the reasons they cancelled it, so you're going to have to look at that.

Facilitator:

Public Respondent: Where tourism is so important in this area, I just wanted to make it a point to mention that in 2005, Cape Enrage was listed as the most scenic spot in Canada, and I don't think it would be a good idea to have big transmission lines and blinking lights out in the water there anymore than it would be in Lake Louise or a similar tourist spot.

I'm also wondering if your study is looking at wave action generation, maybe in the outer bay, like they use in Europe.

NB Energy:

Facilitator:

Public Respondent: How much extra traffic would be put out there in the Bay of Fundy if we started ------? They got to ------ they got to get it out there, so is it going to go out by ship, by helicopter? If we get gear out there and they start bringing ships up, it's going to start cutting gear up.

Facilitator:

NB Energy:

Public Respondent: It's like David said, we got traps all over the bay area everywhere. If they start running ships up here, it's just going to start cutting gear ------.

Jacques Whitford:

Public Respondent: So, bottom line, we're talking about — The only place we really have in New Brunswick that's got a lot of tidal current going through, we're really here talking about Cape Enrage, more or less?

Facilitator:

NB Energy:

Public Respondent: What about the St. John River?

NB Energy:

Public Respondent: Well, is it fair that after everything is done, you base a decision on the lease opposition?

NB Energy:

Facilitator:

Public Respondent: Just so it's recorded what a lobster bottom is. It's only about six miles off the end of Cape Enrage to Nova Scotia. It's 9 miles from Alma to ------ River. We got about 25 miles to Apohaqui, 20 miles up the bay that whole bottom we fish, ------. So we want that recorded.

Public Respondent: And I'm sure where you hit where he doesn't fish, I'm sure ------ running through the another string of fishermen who fish from there down.

Facilitator:

Public Respondent: Just more or less, the whole Bay of Fundy is fished, probably from shore to shore, from tip to tip, and you don't — You guys are saying you don't want to affect the fishing to get this, but any place that you're going to run into with a lot of tidal current, there's obviously a mass amount of fish and ocean life there. So you're more or less, from what I can see, you're going ------ for the other.

Facilitator:

Public Respondent: So, right to the Maine border, and then you're going to run into the Maine fisherman. But, it's just like you said, there's so much that's produced from the ocean, and you guys are trying to find ways to put stuff in the ocean. It's not probably going to help, as far as I'm concerned, the fishing. But I'm sure there's other concerns that I'm not aware of or concerned about.

Public Respondent: Yeah, just looking around the table here, I see hydro's represented, the provincial government, tourism, but I fail to see any lobster or fishermen's organizations represented from the ground level. You've been dong this for two years, you say, three years? Where's the fishermen participation from inside? Do I see lobster representation working with you folks right now? I don't see any here. There's no mention of it.

And lobster stocks are migratory, and what affects the Minas Basis affects us also. Lobsters caught in the Minas Basin can also be caught, the same stocks migrating. So what happens over there, affects us here also, so NB Power and the provincial government should bring that to Nova Scotia's attention.

But I'd like to see some fishing representation. A lot of the questions being answered could be brought forward in a forum with you folks from the ground level. ------ We should be in here. There is a Fundy North, ------ 36, Grand Manan, Alma Fishing Association, the Minas Basin. There's fishermen's associations from all over. Where are they ------ within your meetings? How many fisherman's organizations have been involved from the get-go?

Facilitator:

Public Respondent: We're the most knowledgeable. We use that — We might lack in education. You might consider us stupid, but we know that bay. We work that. We haven't seen any input ------.

Facilitator:

Public Respondent: ------ before we come out? A lot of questions could be brought forward ------ with you folks before you even go to the public. We could answer all of these questions, as a fishermen's organizations, and you would have the answers. You should, before you ------ forum.

Facilitator:

Public Respondent: Where are they? How come there's no fishermen sitting at the front table out here with you folks?

Facilitator:

Public Respondent: We should have an input with you folks. You guys all working together, I assume, in conjunction ------,but there's no fishermen's representation. Like, we're not in with you guys, proceeding with the process. We're finding this out after, and you're asking us what we think. Well, why can't we get in before that all starts? There's a number of fishing organizations. We should have some ------ with you folks, sitting at the table, the same meetings and the same questions, and the same — And then we know what you guys are doing and you know what we're doing, if you understand what I'm saying.

Public Respondent: What he's trying to tell you is that you should have somebody from the fishing association on your board ------ when you come out to these ------.

Facilitator:

Public Respondent: NB Power's here, which is nice, but we're the biggest users of the Bay of Fundy, and especially in Cape Enrage, if that's what you ------ We can tell you more about the tides up there than — You represent a consulting company? We can tell you more in a day than you will ever learn up there in a year. So we do know what we're doing, but we should be in the process. ------, not just the ------ Grand Manan, the Minas Basin, Digby, ------ Yarmouth. That's part of their — We all should have a say in this because it is our ------. We know the information that's out there in regards ------ DFO might know, they might not either, but we can point you in directions that you may wish to go to find this information. Like I say, we should be there.

Facilitator:

Public Respondent: My name is Ted Curry. I work for the Department of Fisheries and Oceans. I've been following the tidal power story for the last two years or so. I attended a meting about a year ago at Acadia and they were looking at Nova Scotia tidal power development on that side. And the same kinds of questions were raised then. There were a number of fishermen in attendance and they raised the same kinds of questions. I've been talking to fishermen in Nova Scotia for the last year and a bit. I guess where we are right now, it's just a concept, it's just an idea to generate electricity. We don't have a firm location. We're not even certain of the technology, or if the technology will work. But the constraints, whether it's fishing activity or navigational hazards, these are all kinds of things that will be considered in the planning. It's still very conceptual right now. We're not trying to exclude anyone.

Public Respondent: Yeah, but moving forward with the stakeholders, DNR in regards to property, the DFO in regards to this. Well, where's the fishermen? You say we're going to part of the ------ We should be sitting at the table above ------.

Jacques Whitford:

Public Respondent: No, I mean the whole organization should be involved ------ trust DFO, I don't ------ No offence. ------

Facilitator:

Public Respondent: There's also a native community up there that is not represented by an organization at the head of the bay. There's two or three fishermen that's not represented by an organization.

Facilitator:

Public Respondent: So, I don't know what First Nations it is, but ------

Facilitator:

Public Respondent: ------

Facilitator:

Public Respondent: Just regards to the lobsters migrating and stuff, what you guys do may affect it, it may not. But there are lobsters who get tagged, say ------ And I know in Maine, that do end up coming up in our bay towards Cape Enrage and stuff like that. And I believe some of them I tagged, it was only two or three months, and they've come 200 or 300 miles ------ come to the bay, just for the particular bottom, or whatever reason. Just so you guys know that there's affecting more than just us and surrounding area.

Facilitator:

Public Respondent: I have a question. Just how much power do you expect to generate? There's precious little said in the reports. How much power do you expect to generate? Obviously, you have examples in the UK, California, across the Bay here. I mean, nothing has really being said. This is another Lepreau-type of capability? What is it?

Jacques Whitford:

Public Respondent: Does it have the potential to surpass wind power, for instance?

NB Energy:

Jacques Whitford:

Public Respondent: So this is very conceptual, is it?

Jacques Whitford:

Facilitator:

NB Energy:

Public Respondent: Do you have target dates? At what point do you decide it's feasible or it's not feasible? At what point do you decide whether you'll go ahead with a test station, or whatever the case may be? You must have some form of a target date.

NB Energy:

Public Respondent: How many are they going to have sink down there to make it worth their while to do all this? They ain't going to do it with just one.

NB Energy:

Facilitator:

Public Respondent: I don't think we think that it's going to bring in enough economic value to this community or us fishermen. We think we're only going to stand to lose because they're not going to give us money for putting it up there. They're not going to hand out money and put it in our pocket for putting — Taking ------ from us. Can you say that we're going to be an economic gain in this community from that? Like are we going to get cheap hydro?

Facilitator:

Public Respondent: For the province, I think.

Facilitator:

NB Energy:

Facilitator:

Public Respondent: You have identified Cape Enrage as a tidal area that's to be developed.

Jacques Whitford:

NB Energy:

Jacques Whitford:

Public Respondent: When you put these things in the water, how are you going to transmit that from there? Are you going to have two or three telephone polls or will we see these big, metal giant transmission lines? Will there be sub-stations built? There's private property. It's not all DNR. There's a great deal of private ------ Will you be

expropriating property to facilitate this power line? What's in your plans here?

NB Energy:

Public Respondent: For a project of this scale, what I would assume ------

NB Energy:

Public Respondent: ------ transmission.

NB Energy:

Facilitator:

Jacques Whitford:

Public Respondent: So you guys are more or less looking for an experimental spot for New Brunswick to proceed on the whole tidal energy thing in the future. Because you can say you guys have already said that there's not any mass-produce of energy being produced out of any of these things for anything. So you guys are more or less looking for an experimental something to start to expand upon hopefully in the future. Like I said, if we could agree to something ------ small, is it later on going to come back and bite us in the ass?

NB Energy:

Public Respondent: Yeah, I know. ------

NB Energy:

Facilitator:

Public Respondent: So you said New Brunswick is not trying to expand upon the whole tidal energy. What are you guys trying to accomplish by these meetings then?

NB Energy:

Facilitator:

Public Respondent: I'd like to see — I'd like to ask about the possibility of how did this study be — a more clear comparison of these different methods of generating energy. I think we all know that they all have their drawbacks and benefits, and in order for us to make informed decisions as to where we stand, where we'd like to get our energy from, we really need to have as clear and accurate information as

possible. And I don't know if that's the intention as part of this study to, in some stage appear, all the effects, the known effects and benefits of ------ without other options.

Facilitator:

Jacques Whitford:

Public Respondent: Yes, I think, if it was generally seen that there were great benefits to some areas, and that maybe we would have to put up with their being certain problems in others, but to see that clearly, all these different technologies would ------ having suggested ------ and here's another one. How would we possibly compare it?

Jacques Whitford:

Public Respondent: Including the real costs to develop it versus the —

Facilitator:

Public Respondent: ------ real costs in the loss of the lobster fishery ------

Facilitator:

Public Respondent: And who is approaching the government? You say the government is approached to look into things, like tidal power, and you don't have the policies, ------

NB Energy:

Public Respondent: ------ say who those people are ------

NB Energy:

Public Respondent: Is it NB Power?

Public Respondent: The wind project is by a company in Alberta getting energy from New Brunswick ------ policies that ------- develop ------ wind technology. So if we go tidal power we could eventually ------ company ------. It wouldn't be New Brunswick necessarily, it could be opened to anybody to put in the technology.

Public Respondent: In the world.

Facilitator:

Public Respondent: What will it cost the people in the area?

Facilitator:

Public Respondent: Yes and experience ------ You said the government isn't interested in proceeding.

Facilitator:

NB Energy:

Public Respondent: But tidal power projects would be very expensive.

NB Energy:

Public Respondent: But the real costs are to the people in the area.
NB Energy:

Facilitator:

Public Respondent: ------ still going to get tourists at Cape Enrage everyday.

Public Respondent: And if it proves economical, our government might start ------

NB Energy:

Facilitator:

Public Respondent: I'd like to just express my appreciation for the way you're doing this by actually coming and talking to people long before there's something already announced, or whatever. I think it's a really impressive opportunity for people to get this and talk about it ahead of time. And I also appreciate that the province of New Brunswick is even sort of open to the idea of alternate energy phase and whatever, whoever else is involved in that. That's good stuff.

Public Respondent: ------

Facilitator:

End.

Facilitator
Jacques Whitford
NB Energy

(Introductions)

Moncton CD1

Public Respondent: So I thank everyone for this opportunity to express my comments here. It's nice to be consulted very early in the process like this. I'm a physics graduate from the University of Moncton and a mechanically-minded person, and I grew up here in Moncton, and I find the generation of electricity from the tidal movements we have here has always been a turn-on for me since I was a young boy. So I'm very excited to see that now is the time we're starting to see the possibilities of it.

But here tonight for the record, I am Marc Theriault; I am here on behalf of the Southeastern Chapter of the Conservation Council. We support the idea of potential of tidal energy and investment by the government of New Brunswick, possibly with other Maritime provinces. This energy being generated, what are we going to do with it, is one of the concerns — is it to be sold? Is it to be used? This energy should be first and foremost an investment for the energy needs of New Brunswick communities, and other provinces. This investment should always be predicated on no harm being done to the current practices of fishers and their families in the region. This investment should be based on using the available resources, machines developed and manufactured in this province, or at least in the Maritimes. This investment should incorporate principles of local community development, so New Brunswick can take charge of its economic future in terms of energy: thinking locally, growing organically, maximizing local human potential.

We graduate here in the region, and in the province, engineers, business people, technicians who have great capacities and abilities, so we want to see those resources being used. These people should have the opportunity to stay in their own province and take charge in this exciting future. So investment in tidal is good, but under the conditions which I just outlined. Thank you for your attention.

Facilitator:

Public Respondent: Dennison Tate, Executive Director at Cape Enrage. We exist at Cape Enrage, at least in that tourism project, partly because of the highest tides in the world. And the idea of harnessing the tides for hydro power is an interesting one and one which, I believe, could be very successful. There are some concerns that I have, and I don't know the answers to these, so I'm just passing on my concerns. One is the effect that harnessing energy will have actually on the resonance of the Bay itself. We know that the high tides that we're trying to harness, or thinking of harnessing, are due to the particular dimensions of the Bay with the length of the Bay and its period of rotation with the moon and so on. And sometimes when we try to harness something, we destroy what it is we're harnessing. If we have the fastest horse in the world, and we think that we might harness that horse to drag a plough, we no longer have the fastest horse in the world. So I have some questions about that, whether the equipment itself will change the dynamics of the Bay, the resonance of the Bay.

My second concern is the effect that it will have on the sea bottom, and in particular, the lobster fishery near Cape Enrage, which is the lifeblood of the village of Alma, and having been there last night, I'm sure you heard — I wasn't there, but I can imagine that that topic came up.

A third concern, question, is how it would affect the tourism industry in that area. There are three kayaking companies that depend entirely upon the tides for their livelihood. And I'm wondering if the location is going to preclude the operation of kayaking and so on there. I think those are all my concerns. Thank you.

Facilitator:

Public Respondent: I was glad to hear all my major concerns addressed by the previous persons. I was just thinking, having a bit of a mechanical mind myself, whether consideration would be given by the engineering teams to using several small and conspicuous, non-lethal to fishery and so on, or to the resonance of the Bay, which is a grave concern. Having several instead of, you know, a few huge ones, or if, you know, breaking it down into something manageable by the immediate ecology, you know.

Facilitator:

Public Respondent: Oh yeah, for sure.

Facilitator:

Public Respondent: Peter Etheridge, Fundy Biosphere Reserve. Bo ------ and Fisheries and Oceans have already done an inventory of the Bay, and they know where the ecological sensitive areas are, so I don't think I have to reiterate that, but it certainly should be taken into account. I guess what I'm not getting from the information that's been presented already has been reference to the scale, and the pace of development. What I'm getting from what was introduced at the start here was that there's going to be some research and experimentation. How long of a period is that going to occur over? And again, relating to the scale, if I relate it to wind energy, there's a certain number of windmills per site that makes an insulation, a wind farm economically viable.

Now the scale is certainly going to have an impact. The larger the insulation, the more significant the impact. I guess I'm not getting a lot of information as regards to the technology either. Is that — I'm not mechanically inclined, but I know what the volume — or got a good idea of the volume and the debris that comes out through the Bay of Fundy on a daily basis. And I don't know if it's been done anywhere else in the world, but I just have a hard time envisioning how mechanical equipment is going to stand up to that type of force and abrasion.

But again, before a position can be taken, our concern is the effect on the habitat and the biodiversity, which we feel has been significantly under stressed, overstressed for a number of years. There's a lot of species that are endangered, and a lot of species that have already dropped out of the system. Is that a — it's the overall impact on the biodiversity and the habitat of the Bay of Fundy that we're primarily interested in. But I don't think there's enough information been presented here tonight that really gives us enough to form an opinion on it at this time. So I guess I'll shut — I'll finish by saying that — what's the scale of the development per site? What's the research period that's going go on? And how, where's the development going to take place? Is it at the head of the Bay? Is it all along the Bay, both sides of the Bay of Fundy? Just how is it going to proceed?

Facilitator:

NB Energy:

Facilitator:

NB Energy:

Facilitator:

NB Energy:

Public Respondent: ------ about technology? Is there a place people can go if they want to — A couple of them mentioned engineer. If they want a little bit more on, say, let's see what these machines look like and they are. I mean, either of you: Is there a place where they can go to kind of get state-of-the-art?

NB Energy:

Public Respondent: Is this developing technology or is this technology that's already been applied and ------

NB Energy:

Public Respondent: Well, actually there are some. EMEC has some operational for the last two years.

NB Energy:

Facilitator:

NB Energy:

Public Respondent: Charles Reilly again, with the ------ group, CHS at the Bedford Institute. I just kind of throw out a bunch of comments, not only my own, but some I've heard in the last year, where we had the original proponents for the Minas Channel, to deal with some questions being asked. So these aren't official statements on behalf of ------, everybody — This is all new to everybody. So, I will start with the last one first: scale of social economic issues.

As I understood the proponents a year ago, when we first met at BIO, the European group, it was the one with the turbine with no centre axis.

NB Energy:

Public Respondent: Okay. That one is ------ It looked very promising, at least on paper, it sounded great. Nova Scotia Power is behind that. Some things have changed since, but at any rate, they've had cameras on the — where the axis was supposed to be. Apparently, they are looking very well, from an engineering point of view. Again, I am regurgitating that. They've yet to see one fish swim through the turbine, the whole time its been operating, again, according to them. They're only spinning at 25 rpm, so it's not something that's going to chop up the fish, and there's a lot of — People in Nova Scotia were concerned on that point. That's not really an issue

here. The issue of damage to environment that stems from dams — The tidal power ------ through the 30s, 50s and 60s and into the 70s was all about dams. Dams and environmental issues are a bad mix. There's a lot of interest, and again, from my perception. The idea of turbines is very appealing to a lot of environmental groups, not that they're not without problems.

The issue of scale, from what I've been told, this doesn't work unless you are dealing with hundreds of turbines. It's not one or two in a few channels, and they don't have to be in channels. They can be — They don't have to have the extreme large — They have to have reliable, predictable currents, and that could be along shore, but they don't want them to conflict with lobster and fishers, etc. etc. Also, the collation. They can't have one here and one there, they have to be clustered in order to node them together so that — It's an economy of scale. You don't want to have 20 turbines with 20 cables coming ashore. They would like to link them all together and have one cable coming ashore.

So basically, the locations are going to be dictated by sufficient current, not maximum current, the availability to the grid. Whether you use it as a New Brunswicker or whether you sell it to a New Yorker and you use that money to buy coal or whatever you're going to do, the benefit would still be here in New Brunswick, so how that economy works out, you can ask the bean counters. Don't ask me. But tidal power comes in slugs, and if you have enough turbines in enough places, it's really — You have to talk in terms of a distributed grid and selling and sharing energy.

Someone asked a question about resonance. If you're talking about dams all the model had done work on this issue at the ------, would say yes, you can increase the resonance of the Bay of Fundy. It's really the Bay of Fundy/Gulf of Maine complex. It's not the Bay of Fundy that's ------ resonance. The Bay of Fundy, if I can give a quick little background on it. The tides of the Bay of Fundy got big in the last 3 or 4,000 years where people living in the Bay of Fundy when the tides were only a metre and a half, 5,000 years ago. When they built the pyramids, you had small tides here. They only got big recently, and they are still growing. In other words, you have to establish a baseline. Naturally the Bay of Fundy tides are still going further into resonance. At some point, they may stop that. Who knows when that's going to occur?
Turbines are not likely to affect that, like a dam would. However, that is an issue, and I think the most concern about turbines would be that of localized effects.

Issues of — What are the cables going to do to the large fishing industry? Are they going to be in the way? Also, if you put turbines

in channels, you have a big problem with boats, because you don't want to be hitting turbines. Don't forget, turbines have to have a surface expression. In other words, they're not totally submerged. Most of them have to be raised up for maintenance purposes, which leads me to a very interesting point, and somebody here touched on that, which is: If you're building these turbines by the 100s, there's big money in the building of them and there's big money in maintaining them. So basically, you're going to need shipyards to maintain them. I've been told that about 10% of them would be in for servicing at any given point in time This is big money whether you talk about Halifax shipyards or you talk to Saint John shipyards, so there's secondary economic benefits to this. And indeed, if these turbines are actually built in Canada, need I go on about that. You're probably talking in the 100s of millions of dollars, but you've got Jacques Whitford, I'm sure, would address this issue better than I can.

So I think I'll wind down there, but other than the fact that I'm here to really — I didn't mean to be speaking. I wanted to listen but I'm regurgitating a lot of concerns that I've heard on the Nova Scotia side. And by the way, an interesting point you made is that we were told last year there's going to be a turbine in Minas Channel this year, so if there's not —

NB Energy:

Public Respondent: We didn't really believe that when we heard that. But that turbine would likely to go off Cape Sharp, and after — We still have a tide gauge running there, which showed us, in after four months, that the range of tide off of Cape Sharp, which is near Parrsboro, the average tide range was over a metre high than we thought it was. The information in the Minas Basin was abysmal. A lot of people don't realize that because there's not a lot of navigation in there. I suspect the same is true off Hopewell Cape. Most of your data around here is based on one-month records from before I was born, in some cases. That's true for Hopewell Cape. So really, if you're — You mentioned about gaps. There really are huge gaps in the baseline data here. But fortunately, that can be rectified, and not just by money, but you also need time. You need one-year records, and a lot of these sites before you truly can say you understand the current structure or the high ------ water tidal behaviour. In the Bay of Fundy you need very long records.. A one-month record in Halifax would translate to a 200-day record to the Minas Channel. Alright.

NB Energy:

Public Respondent: It's a maintenance issue if they are completely submerged so how would they get them out to fix them?

NB Energy:

Public Respondent: ------ shouldn't concern ------

NB Energy:

Public Respondent: ------ yellow submarine.

NB Energy:

Facilitator:

Public Respondent: Bob LeBlanc. It is just a comment. I'm originally from Nova Scotia but I have earned my living in New Brunswick, and the Bay seems to be between the two. I'm a bit concerned that both provinces being non-territorial, as governments are, take off on their own concerns rather than looking at the Bay. I think there should be some kind of a mechanism that would permit the Bay to be looked at as a bay, and not as the New Brunswick side or the Nova Scotia side or be that outlook. I think it should be looked at as an entity in itself, and both sides work on the same principles on each side of the Bay.

Facilitator:

NB Energy:

Public Respondent: I think what you'll see is the — New Brunswick, for instance, Natural Resources would be interested in the provincial land out in the Bay of Fundy, and likewise, Nova Scotia. But at a federal level, you're going to have Fisheries and Oceans, who are going to have regulatory requirements that are going to broker those barriers, the boundary, if you like, between New Brunswick and Nova Scotia. Likewise with Environment Canada, and the other regulatory agencies ------ an environmental impact, agency. They're going to have regulations, and they're going to be monitoring environmental impacts that are ------. They're going to consider the entire Bay interactions with these turbines and in one location, and how they're interacting with each other and with the environment. And you won't have the narrow focus, I don't think, in the broader perspective of any one individual province. I think that's a fair assessment.

Facilitator:

Public Respondent: Just a quick question — When are comments due?

NB Energy:

Public Respondent: Could I make one more comment? First of all, I'd like to thank Marc for his presentation. I think it summed up pretty well, and it does present a good position, I think, for communities or for individuals in the province. Just to add to that, those comments that were provided, is that — and this is coming as a recommendation. I know the technologies are developing at different rates, whether it's wind or whether it's tidal or whether it's solar. But my recommendation would be that the province, the Department of Energy, Department of Natural Resources, or whoever does that type of policy, should consider an objective of reducing the total net carbon print in the province, whether it's power sold or power exchange, or whatever, those things will still happen. But if you set an objective like that for communities, for the province, for all the residents in the province, and if you can include Nova Scotia, that's even greater. But set that as an objective to reduce the total carbon print, and I think you'll find there'll be a lot more support for this type of technology as it develops.

Facilitator:

Public Respondent: Larry McLaughlin. I, too, was impressed with Marc's comments. When he opened this up, it relaxed me quite a bit. Wind, tidal power and solar with fossil fuels, I guess we have to — are going to have to do something. The propellers in the turbines in water, I guess, fish have been living with propellers for many, many years and we're still fishing. It's we, the people, that are giving the fish trouble by over-harvesting, and maybe not the propellers. At least with these proposed water turbines, the fish will at least know where they are and possibly stay clear or get around them. If this turbine project, which I'm pleased it's starting or some looking at. If it ends up to be getting American funding, like these major projects seem to get into, will the megawatts be all channelled to the USA along with some of our water, maybe?

This is a huge money project, just to get this off the ground, and the research will be expensive. I don't know where all this money's coming from. And I'm not sure how we tie the voltage into the grid, whether it stays in the smaller communities offshore or whether it will go into the total system.

I play with solar and I have a solar home, and I have a wind generator, and the wind is very nasty and it's expensive to keep blades and things going. I'm interested in solar, but I'll never be

able to swim well enough to get too far along with that. At my age, I'll never see it developed, but I'm certainly pleased that somebody's coming forth and looking into it. I think it's going to be an interesting time. Thank you.

Facilitator:

Public Respondent: ------ with the Petitcodiac Water ------. I'm really happy New Brunswick is finally looking into tidal power. I just had a question to see if New Brunswick is kind of lagging behind Nova Scotia, to kind of learn from their mistakes and kind of save some money on the research. It's just a question to see if that's part of the plan.

Facilitator:

NB Energy:

Public Respondent: I wasn't meaning it negative.

NB Energy:

Public Respondent: Is this working?

NB Energy:

Public Respondent: Okay, Monique Arsenault is the one that lifted the mic. She forgot to give her name.

I'm Jean Paul Bourque, and I'm on the executive committee of the Sierra Club of Canada for Atlantic chapter. I guess all the comments I've heard so far, I don't know how the executive committee would feel, you know, to give an input before your 19th. We're meeting next week or the week after. But there's a couple of things that maybe I'd like to stress.

I was born and raised on the Memramcook River, and we were fishing there quite well until they put a barrier at College Bridge, and the whole thing just went kaput from there on. There's hardly any fish in the river left. The Bay of Fundy has a very strange and very powerful ecosystem, and the proof of that I found in a little book I had in my library, and I hadn't read it quite a while. It's called The Sea Around Us by Rachael Carson, 1960. She, in three or four pages, listed all the tidal sites in the world. The Bay of Fundy was at least four or five metres, or three or four metres above the others in China, or in France, or in UK. There might have been some elsewhere, but the ones that were most visible were China, France, UK, Es — including Scotland and the Bay of Fundy.

So there is this thing about power; in other words, it's a very powerful ecosystem, and some of the stuff that they're testing in some of the rivers in Scotland may not meet the very powerful force that we have in this Bay. I think the Sierra Club probably would go along with the biosphere person here, you know, the Bay of Fundy biosphere person that — Obviously, we would go with reducing our carbon footprint. We just launched a national petition today with 12 other organizations in Canada. The three opposition members in the House of Commons signed, and the other 12 organizations are very well known nationally and internationally. So we want to get beyond Kyoto. We want to reduce our carbon footprint and so forth.

And all the other things that either Marc said and other people said, that the biosphere person, this gentleman here, about the Bay of Fundy, you know, the — We should keep, we should make sure that, I think, probably we should come back to the people after we have a lot more data. We should come back to make sure that — This is a very good initiative. You're taking consultations. We should come back to the people at one point when there's a lot more data and you can identify sites and impacts on the environment. So that's about all I would have to say. If you wanted the executive committee to give you a feedback by the 19th, we could probably do that. Thank you.

Facilitator:

Public Respondent: I'm Tim Van------. Speaking for Petitcodiac Riverkeeper, I think there's just three things I want to comment on. The first is, I think, has really been spoken before by everybody here. Tidal energy really has certainly potential, right? There's no question. I think we wouldn't be here if there wasn't. That potential could come with significant benefits, but also significant costs. That's the first thing, and again, it's very difficult — this is kind of sub-parts of that — very difficult to form an opinion, like others have said, when really there's not too much to form an opinion on right now.

The second thing I will say is related to the costs and benefits. It's more of a question: Are we going to be looking at this from a full cost benefit accounting point of view? For example, you look at tidal energy and it probably has some pretty significant potential benefits on a greenhouse gas reduction point of view. It could have potential significant adverse costs on fisheries, ------ communities, X, Y, Z, and go down the list. Are we going to be taking a full cost benefit analysis approach on this type of development?

And I guess the third thing is: I've taken a look at the documents done by Jacques Whitford. They are some documents. But really what the document does, it doesn't necessarily provide too many answers. I think it provides just a series of more questions that need to be discussed, and that can be seen in the pages of data gaps, and I'm not going to talk too much about that because most people identified. And there's no need in going through all those gaps, just to know that it pretty much exists in every aspect of the policy development, of the project development. I mean, there isn't one section that doesn't have a data gap. That's no reason not to make a decision, but certainly, I'd probably stress the precautionary principle when we're dealing with these types of things. Thanks.

Facilitator:

Public Respondent: Grace Matthews. I didn't hear anything mentioned yet about conservation promotion. It seems to me that in our society, we're always looking for more energy to meet an insatiable need in our society, and I would like to see within any policies that are being created, that it's not promoted as we're going to have more energy and more to waste, but we want this energy here to be used in a viable way and in a way that is conservative. That's all I have to say.

Facilitator:

NB Energy:

Public Respondent: Gordon Smallwood. I would like to say that, first, I agree with Miss Matthews. We waste more energy than what we use. And it's fine to develop conservation in households and homeowners, but when we look at industry and if you go into a financial institutions and restaurants in the middle of the day and sunshine in the windows, all the lights are on. I was at a meeting last night in Sussex on community wind, a possibility of developing those projects instead of a large utility scale, so the community would be more involved in it. And you mentioned about the economies of scale with hundreds of in-stream turbines. It doesn't have to be a mega project. It doesn't have to be $50 million involved. It could be just distributed generation, with a turbine here and there. There's millions and millions of gallons of water traveling in and out of the Bay of Fundy every day, so it's not like you need turbines to virtually block it off.

The Bay of Fundy is just one source of water in our area, you know. There's the Northumberland Strait, there's ------ river opportunities where you don't have to put a dam up to collect hydro electricity.

It could be just a submerged turbine on a small scale in a river in the right situation. We need to look at, not just one — There's not just one silver bullet that's going to solve our problems, but with the mix of wind and tidal and solar voltaic and solar thermal energy to heat water and biomass and, you know. Our landfills, for example, in Europe and Scandinavia, they capture 80% - 90% of the energy that — waste that goes into the landfills and recapture that. We have to look at the whole scale. It's not like we're going to destroy the Bay of Fundy and solve our problems. There again, if turbines are put in a certain area in the Bay of Fundy, and it results in something negative, they can be removed. It's not like it's something like it's a permanent structure forever. And there again, whatever negative impacts that they could have are probably far less than what we're doing in the oil sands in Alberta. So that's my comment, thank you.

Facilitator:

Public Respondent: I concur with the lady's comments. The real issue, of course, is conversation, and we tend to get fixated on engineering issues. I used to work at an oil patch back in the 70s. When I first started out as an exploration ------ physicist, I was told, quite clearly that, by the year 2000, they anticipated a $100-per barrel for oil. In fact, and even though we're complaining about it, it's right on track. You will probably see oil in the $200-per-barrel within 30 years. That's what's really going to make the change as far as energy use goes. Unfortunately, all the regulation in the world — People are used to living the way they are. This is the problem.

Tidal power, and wind and solar, especially wind and solar make themselves amenable to be used locally, right up to a home. Tidal power is more different, in the sense that you can't have a $3-million turbine taking care of a small village. It just isn't in the works because the small village can't maintain that $3-million turbine. That can only work on a large scale. A somewhat similar analogy would be if you want a 3500 watt Honda generator in every home in Halifax, as opposed to one or two power generators both burning gasoline, it's far more efficient to have a centralized petro-chemical plant, if that's what you're after. It's a lot less efficient. Even though the electricity line rates if you're — You have minimal wiring if you have your own generator right in your own home. There's a huge loss of energy when you send electricity through wires, and so the grid is there. At three o'clock in the morning, when that small community's asleep, there's a huge surge of energy that's simply going to be wasted if you don't sell it.

Really, it's a communal thing, a societal thing, but again, this is not taking away from her comments. Both things have to happen, but

the thing that's going to drive energy efficiency is — Right at the moment you are paying what? 11 or 12 cents per kilowatt hour. One $5-million or $3-million turbine, they'd be lucky to get 20 cents per kilowatt hour out of it, but when you've got 100s of them, yes, it'll probably drop below what you pay for petro-chemical or hydrocarbon.

That hydrocarbon option won't be there unless they resort to oil sands and tar sands. If you're an environmentalist, that's where the real worry comes in, because it's dirty. Even so, it's going to be really expensive. So that's what's going to trigger efficiencies; it's what's going to trigger alternative energy evolution and tidal power is one of those things. So I think it's not an either/or thing. We are going to phase out of one way of living, within 50 years into another way of living, and that's personal opinion.

Facilitator:

Public Respondent: I would just like to, just for a second, take a quote from this bookmark that I kept. It's the southern Gulf of St. Lawrence Coalition of Sustainability, and I got it at a meeting one time and it says: We simply must balance our demand for energy with our rapidly shrinking resources. By acting now, we can control our future instead of letting the future control us. It's Jimmy Carter, 39th President of the United States, address to the nation, April 18, 1977. So those words still ring true today.

Facilitator:

End.

Facilitator
Jacques Whitford
NB Energy

Saint John CD1

(Introductions)

Public Respondent: It's Colin Seely, and I mentioned I live on the Bay of Fundy, right on the shore in Black River. I grew up there. I've been away for a long time, but I'm back, and I've — but I've followed the history of the bay, and I know some anecdotal stories, but — sorry, I thought this thing was hooked. I've followed the history, a bit, of the bay, and it's been assaulted many, many times in many ways. And, you know, we need to learn from those. I think of the Pedicodiac River issue, and I think we're all familiar with that. Now we're trying to undo it all.

There's been talk of tidal power for — ever since I was a kid growing up. And when you get up to the upper reaches of the bay, and the tidal areas, the flats, we all know those are extremely sensitive environmental areas. And if you're going to tamper with them, by putting in weirs or any kind of water hold-back devices to enhance these in place in the water-generating stations, I'm not so sure that I would even attempt that. I know you're talking about existing currents and one thing and another, but everything has an impact. Everything has a cause and effect. What's the electromagnetic issues with these things? Have we done studies on those? Are they parts of your terms of reference? And I apologize for not having seen what it is you're studying or what the consultants are looking at, but there's all — I would like to see that, and I'll add some comments to it at some point.

But the bay is not something that's — It's a fragile thing, and it's a valuable resource. Whatever we do, let's do it with care and caution, and if it can't be done with care and caution, and with good outcomes, then, let's not do it. And I would hope that these processes are not construed to be consent or consultation or whatever. I think there's a very early stage here, and I don't want to see things in the paper where the government has gone out and consulted, and now we are going to allow a bunch of developers in to put these things in the bay. So I'll end there and let somebody else have their say. Thank you.

Facilitator:

Public Respondent: ------. My question is, could somebody explain how a tidal power plant actually works? You have an incoming tide, and then you have slack, then you have an outgoing tide, and you have slack. Where do you get your electricity during the slack? I have heard of tidal power plants who have pumped storage, water storage, to use this during slack, with a different turbine, and I wonder if something like this is contemplated here.

Second, these turbines are around 20 metres in diameter. Say, you have to have enough water at slack tide—at low tide—that fishing boats and pleasure craft can go across this. How do you anchor these devices at the bottom of the sea, wherever you want to install it? Thank you.

Facilitator:

NB Energy:

Public Respondent: You have less power if you size down your turbines. No, what I wanted to — and I don't want to hog the microphone. What I wanted to point out is, I think it is extremely difficult for a power — let's say, a power generation plant to schedule the slack tides, labour-wise, because of — See, tide moves half an hour, so this means they would have working hours shifting half an hour or something like this, which — I don't know if it has been done anywhere.

Facilitator:

Public Respondent: My name's Jane Wilson. I'm a school teacher here in the city. I was recently to a talk on uranium mining in Moncton. I'm really upset to say there was no one from the media, to my knowledge, at that talk. I don't know that the government of New Brunswick did as many environmental assessments. I wonder how this young many can do — his company can do an environmental assessment when nobody from your comment has done it commercially anywhere. So, how can you say how it's going to affect us when nobody's actually done it? You're debating on even what it's going to look like, the size of it, how you're going to anchor it, where you're going to put it. We don't know how it's even going to work yet.

New Brunswick — if we're going to create energy, and we're going to take some risky endeavour that might affect the waterways of this province, or this coastline, I hope we're doing it for our benefit, and not to sell it to someone else. I don't want a company that's

looking for a patsy, if that's the term, that they're gong to come and use our water, affect our ecosystem, and then leave with their money. I am really concerned about that. If it's going to be to make my power less, or to generate electricity that's going to serve my home and everyone else's, and we're going to do research to better serve clean power to the province of New Brunswick, I applaud this provincial government. But my suspicion is that it's big business looking for a cheap place to anchor something brand new. And that frightens me. We have no experience. You said it over and over. There's no commercial program being done.

That uranium talk in Moncton horrified me, and to my knowledge, there was no discussion ahead of time. When the province of New Brunswick is selling Inco a huge tract of land in New Brunswick with exclusive rights, what power generating company is out there just waiting for us. I don't mean to be argumentative, or anything like that. I'm a school teacher. I teach the young children in this province. I want them to have a future. I want us to be thoughtful in the way we do things. I don't want us to take a huge public risk for a small private gain. We've got to think carefully. We have to have laws in place. We are not that advanced, I don't think, in New Brunswick, to be the leaders in this.

Like, I was in Sweden this summer. Wind energy, those people are head and shoulders beyond us. And I applaud that. Wind — there is enough evidence to know the benefits and the costs of it. Tidal — I'm worried and I want to make sure it isn't big business, just at our expense. That is a concern and I want that stated, and I'm glad that you're going to type this up. Thank you very much.

Facilitator:

Public Respondent: I am curious. There's a guy over there from the Environment. I can't wait to talk to him when this is over. Did this all happen with the uranium staking all those claims all over the province? Were there meetings to generate if we wanted a uranium mine in the centre of New Brunswick? Maybe I was asleep. I don't think so.

Facilitator:

Public Respondent: I applaud it. I applaud it, but I worry we don't have the expertise, and the people that do might want to take that power and sell it to somebody else. If that's where we're going, I want clearly, no, that it's ------ for us. You know, for us. Yes, for us, if it's safe, and we do everything we should do. But if it's to sell it, I'm not interested. I don't think we should go there.

Facilitator:

Public Respondent: Yeah. No huge public risk for small corporate gain. No, no, no.

Public Respondent: Yes, I'm really glad that that lady said some of the things that she said. I think there are a lot of people, or at least some of the people in this room, most of the ones locally, who have had a belly-full of environmental assessment in the last two or three years in Saint John. A lot of them have had a lot of experience with Jacques Whitford, too. And a lot of that experience hasn't been very pleasant. Am I right?

Public Respondent: Right on.

Public Respondent: So I think that a lot of people, before this moves ahead one step farther, need to have a lot of change. And one thing we have to have changed, is in the environmental assessment processes. They're not capable of looking after anything of any substance now. In fact, the group that I work for, the Conservation Council of New Brunswick, is taking the federal minister to court now because they are refusing to do an environmental assessment on Irving's new refinery.

Going to provincial environmental assessment, they've already started to test burn. And I say, test. Some of the environmental, sorry, the petroleum coke at Colson Cove for burning, and in spite of a meeting, much like this one here tonight, where people overwhelmingly requested the minister to have an environmental assessment on the burning — the test burning of the petroleum coke — the minister refused to do so. So there was no environmental assessment.

People also asked for environmental assessment for the unloading of the petroleum coke at the port of Saint John. They were told that the province wouldn't do that assessment because it fell under federal jurisdiction. We met with the port, who was going to be the people responsible for that environmental assessment, and asked them to have public consultations and public meetings. Under the low-level federal consultation, the screening level which that went, they can determine the level of public participation and consultation. There was none.

The next thing that happened was the first ship brought the petroleum coke into Saint John. This was after people were publicly told by NB Power that there would be no dust, there would be no spillage into the environment. The petroleum coke, in fact,

the people from NB Power who were bringing it in and buying it through the port, said that it would never see the light of day. When it was being unloaded, it was unloaded into the storage building there without even a hose long enough to put it down into the port holes in the top of the building. It was unloaded during a snowstorm the first day, so nobody saw it. And it was just pumped through the air with the dust blowing all over the place. This is all recorded by Bob Jones of the CBC, and was on provincial news. I think most people in the room have seen this. And there was no environmental assessment. Even if there had have been an environmental assessment, a federal assessment at the screening level — now I'll explain what screening means in a minute — there would have been no meaningful way for the public to participate, because at that level, there's no participant or intervener funding. So where the proponents and the government and others would be able to go out and bring in experts and hire people in all sorts of fields to give their version of the story, the public would have no way of countering that because they would be given no resources, and only one side of the story would be presented.

If it had been assessed at one of the other federal levels, which we know, the next one is comprehensive study, and that's what the — well, the docks for the refinery are going under now. The refinery's not going to be examined under the federal process. What the federal government has done, they've drawn a little circle around the docks in the Bay of Fundy where the tankers are going to unload. There are many concerns about this tanker traffic in the Bay of Fundy, another stream of super-tankers coming through the Bay of Fundy at the same time, all the tankers that are already there are there. It's going to double the number of ships in the Bay of Fundy. Plus, they're gong to be sailing through a stream of LNG tankers. And they've not included this. They've drawn a little circle around those docks, about a half a mile in diameter, and they've said that's the scope of the environmental assessment. We're not going to asses the other part of it. And it is equally as serious, or more serious than tidal power. And they're not doing it.

So, I think until we have the environmental assessment processes cleaned up, so that they work for people, I think — I know I'm very disturbed when people come, and they talk about environmental assessment. When we can't be assured that the public will be given any resources, we can't be assured of what the scope of the environmental assessment will be. Really, tonight here, and I'm not being critical of you, Arthur, or anyone else involved in particular, but we've come to something that's very — being very complex tonight. It was said we should round up by nine o'clock, and it's already eight o'clock.

I mean, I think that the kind of adventure we embarked on tonight would have been better if it was something like it was an all day workshop where people could effectively participate. The more participation that starts at the early stage of a process, the better. And I don't think we're even to the point where we can talk about tidal power yet. I think the first thing we have to talk about is public participation, and giving the public the ability to participate in an equal way with government and industry in it. And that's very important.

We've already seen the examples of these so-called energy hub projects in the Saint John area of the Bay of Fundy that are going ahead, and have gone ahead without proper public participation. I think a fundamental question though, here now, and I'll give this one to the energy department. What's the view of this tidal energy, anyway? Is it going to displace? Is it earmarked for displacing perhaps something like a second nuclear power plant? Is it earmarked for, perhaps, displacing petroleum coke? Or is it earmarked at displacing other fossil fuel being brought in in tankers? Or is it being looked at as just more energy to export or to sell or for people to use? What's it going to be used for? Is it going to be used to diminish energy or is it just going to be on top of all of these other projects? And I know that the premier of the province and the government, the government of New Brunswick is highly toting these other very polluting projects.

In principle, tidal power is good. I think everyone wants renewable energy, but it's where it's done, it's how it's carried out, and all these kind of things. Until the proper things are in place, where people can examine that, and participate in a meaningful way, then, perhaps, it's not going to work very well. And we just don't want more energy on top of what we've already got. We've got to move away, and we've got to look at something — What are we going to do about these other energy projects that we have on the go now? Where do they sit? Thank you.

Public Respondent: There's just a couple of other things I'd like to add. With some of the energy projects on the go now, people's communities are being uprooted. People are being forced with the choice to move out of their community or live along side of a major polluting source of energy, just out here at Mispec-Red Head area. And at the same time, fishermen who had their fishing gear destroyed for two years now by vessel traffic for LNG construction, have still not received any kind of compensation, which was stated would happen at the time of the environmental assessment. And I really think that for people to come and promise an environmental

assessment in front of people, especially in front of a lot of people who are in this room tonight, think you're going a long ways in thinking that that is going to be good enough until the environmental assessment processes are changed. They really have to be looked at. They have to provide resources for people to participate, and they have to comprehensively look at the whole project. We can't just look at one thing, an abstractions from the others.

Where does tidal energy sit in respect to not going ahead with Lepreau 2? Where does it sit in respect to phasing put pet coke? Where does it sit in respect to a second oil refinery? Thank you.

Facilitator:

NB Energy:

Public Respondent: Well, the ------ question is how are we going to use it to phase out these other things?

NB Energy:

Public Respondent: Well, my question would be then, to you, and to Arthur, and the people who are here tonight, to take it back and get the answers to these questions so people could really talk.

NB Energy:

Facilitator:

Public Respondent: I just want to make a brief couple of comments. Scott Stacey, concerned citizen. Since we're just in the early stages of developing policies and procedures and whatnot, my comment pertains to that. Do we need renewable resources of energy? Absolutely. I believe we do. But what I also believe we need is to develop a very concise chain of responsibility. If we're going to come in and develop these technologies, we need to have a chain of people and ministers that are responsible for overseeing this technology. And they need to know what level of responsibility they have, so that if a company comes in and destroys an ecosystem, these guys are going to be on the line, and they're going to be responsible, and they'll be held accountable. So, if they know that this is going to happen, they're going to oversee these things very stringently, and they're going to make sure that they're done properly. And with that in place, I think it'll run smoothly. That's my comments.

Facilitator:

Public Respondent: Well, I guess I should turn around and face people here rather than put my back to the audience. A few of you can hear me up here. There's several things. I'm a geologist, so I have an understanding, a little bit, about materials that get mined out of the earth. And there's one precedent here in New Brunswick that happened back in the early 1980's. All coal was provincialized by the provincial government, by a Tory government, by Bud Bird. And that's an important thing to understand. What the Tories thought, at that time, is that they needed all the coal reserves in the province to be in the — how can I say it? — the inventory of the New Brunswick Power Commission. So this has happened here in this province. There is already a precedent of a mineral resource being nationalized. Okay? I'll use the term, nationalized. It's provincialized, because the provinces control the natural resources.

So, the thing that's of importance here is that, again, we are about to develop or approaching a development of our common or a collective resource, and, for who? The example — and I'm from the Sussex area. So we have a gas deposit that was located in Sussex, or near Sussex, in a little community called Penobsquis, adjacent to the salt deposit. This gas deposit is a major deposit. In Alberta, to put it in comparison, there are 10 major gas deposits. This is one. So New Brunswick has one major gas deposit. And what did we do with it? The allegory, or the analogy, is very similar to that of the Delta in Nigeria, where the local people are not only suffering, but they've got no recompense from that gas. It's plugged into a gas line, while they have lost their water, and we can't even afford to build a water line to these people — some 48 and now probably around 51 — people who are losing their water. Then, of course, what happens is we export the gas down to the States, and lo and behold, down in the States, they generate electricity and sell it back to us with our gas.

So this is an absurd use of our resources. The Crown owns these resources and we should be using them for ourselves. So the point I'm trying to make here, I guess it's Arthur, is that there is a place for our control over our resources and there's a place for free enterprise. The place with energy is that we should control our energy systems. Now, the New Brunswick Power Commission, when it was first set up, was set up because there was a whole lot of small energy producers, electrical producers here in the city of Saint John, that were gouging the public. So what did we do? We set up the New Brunswick Power Commission. It wasn't called that in those days. In order to make a fair situation for the people of New Brunswick. And that's another precedent. That happened way back in around ------. So these things have happened before with

Tory governments or Liberal governments in those days, or what have you. So it is a possibility, and it's something that we should consider.

Now, this situation is a little bit like the tail wagging the dog. Finally, we're coming to a renewable energy that should have been looked at before Lepreau. Now, I know quite a lot about uranium mining, uranium exploration. As a matter of fact, before I understood the connection with nuclear weaponry, I did a fair amount of uranium exploration in the 1960's. Once I understood what the connections were, I stopped doing uranium exploration because, you know, all you have to do is just look at the history.

Now, once you understand the progeny of the elements that we have to deal with, in not only uranium mining, but out here at Lepreau, there's just no way that human beings can look after that kind of material for the kinds of times, in a politically unstable period, which probably we're going to dissipate in a 100 years. And yet, there's an ice age coming in probably 9,000 years. We've just had four ice ages at intervals of about 20,000 years. Now, what the hell do you think you're going to do with the Lepreau when an ice sheet a mile and a half high goes rolling over the top of it? It just doesn't make sense, that we would have invested billons and billions of dollars in these kinds of technology when we now, finally, 30 years later, we're getting around to wind energy and tidal energy.

Now, in the Philippines, I'm aware that there's a project being proposed called, I think it's by Blue Water. You guys probably understand that better than I do. And they're proposing to generate 16,000 megawatts of tidal power. In the area near Deer Island, I think there's an area there, and Dave, you probably know this better than I do, in which there is only a very short time of slack tide. Well, that means that the turbines could turn almost for the full period of the tides. It's just literally less than a half an hour, I believe, of slack tide, because it's funnelled through such a narrow strait. I'm pretty sure it's where the ferry goes, but I'm not certain of this.

These are the kinds of little technical things that I think could be very quickly worked out. And the business of putting a few million bucks into how you ground these turbines, is a very different game than putting in billions of dollars into a nuclear technology that we know is connected to the military. All of the uranium that's being shoved — that's being put through our reactors in Ontario — not all of it, but a large proportion of the depleted uranium goes to United States. What they do is make armoured plates out of it, and depleted uranium bullet heads, which they're spreading around through Iraq, Afghanistan, Bosnia and God-knows-where-else. And

the depleted uranium is not depleted. It's a nice, how can I say, ephemeral word that makes you think there are no progeny. There is progeny. There's polonium coming down from the uranium 238, which is a very short half-life, but extremely dangerous. That was the one that poisoned Yushchenko, you know, the spy.

And then it goes on down through a whole series of radium to radon to, I think, to polonium or radium again. Yeah, and then bismuth and lead and so on, and then back into bismuth, and finally, it ends up down in lead, where it's stable. Each one of those progeny — They now use the term, progeny, which is sex-free, which is, I think, a pretty good idea. Each one of those is dangerous to the environment. Now the small degree of risk that we're taking to the environment here is, I think, negligible, and it's just angering that finally, you guys are coming here with these proposals when they were discussed years and years ago. hen we rejected the barrage. By the way, in England, they're going ahead and repeating history, what we've already rejected back in the '80s, by putting a barrage across the Minas Basin for ------ for several reasons, including the fishery, that they realize was inoperable. Well, the people in England should be notified and let know, that those studies exist here, which essentially threw out the idea of barrage.

I think the underwater windmill is a very good idea, and it should be researched. But why in the hell are we putting all this money into nuclear energy. I suggest, if there's terrorism in the world, nuclear power is not a very good idea. If there's environmental problems in the world, nuclear power is not a very good idea, because it's probably one of the severest situations that we could embark upon. Whereas these are relatively benign, and I think you guys are doing the right thing, finally.

Now, with regard to Tony over here, and Jacques Whitford, I've sat on several dump committees. And for with Washburn Gillis Associates, and from Fredericton. There's a lot to consultants around Fredericton. I'm a consultant myself. I know what goes on. e tend to charge a lot of money for overhead, and the people of New Brunswick don't need to be charged a $1,000 a day to keep people here, or to keep people working. They should hire their own technical staff to do these jobs and get around the whole business of hiring a — You can hire Tony for an annual salary rather than like, pay Jacques Whitford 1,200 bucks a day, or whatever it is, so that he can get 300 or 400 bucks a day. I don't know what your salary is, and I'm not going to ask you, but that's generally what goes on with these consulting companies.

We are poor little province. What? We've got 700,000, about the size of a — the size of the city of Winnipeg, and it just does not make any sense that we drain the kitty by supporting this sort of, how can you say, carpetbag industry of professionals who essentially are taking us for a ride.

Now, when they spent the $1.6 million on that dump site up there in Sussex, there are Art Ruttenberg, who was a Department of Natural Resources geologist. He was a regional geologist. There's myself. I'm a consultant geologist. There was a hydrologist, and then Joe Wall, who is now in the energy sector with the housing business. We had an incredible board. Okay? Those guys came down and we knew more than they did. So we would send them back to do their work. Well now, as a consultant, when I make a mistake, the client does not pay. I pay, because I haven't done my work correctly. I'm supposed to be a professional. Therefore, I don't turn around and charge. These guys literally walked out of the room with a smile. $50,000 later, they came back and the bill went up. And this went on until we spent $1.6 million. The same thing went — in this case, it was Jacques Whitford up in Newcastle, and it's now called the Miramichi. Two geologists, Dr. Ben Baldwin, and Don Haddy, went up for the Miramichi environmental group up there, and for 500 bucks, they went and found a very good site.

Facilitator:

Public Respondent: Oh, one last thing. Local control. What happened in Penobsquis is the last people to benefit from that gas are the people of Penobsquis. Nobody in the Susses region gets any of that gas. Some people in Fredericton get some. I don't think there's anybody in New Brunswick other than that get gas from that Penobsquis deposit.

So when these things happen, if they do happen, they should be controlled locally. As the fisheries should be controlled by the community, so should the energy. It should be controlled by the people in that area, and they should get the maximum benefit, and the benefit then should cascade further, as you go further and further away. So the people in Edmunston get a little less, and, you know, and so on. Although, like I think the people in Edmunston should be treated fairly too, because they are part of this province. It's just good manners. Anyway, I've gone on long enough ------

Facilitator:

Public Respondent: My name is Joan Pierce. I have had some experience over the last two years with environmental assessments, and the word cumulative effects. Because I was absolutely horrified at the way

things happen in this province, finally I'm finding out how everything really works. Because I was horrified, I decided to sit in on an environmental law course at UNB, and I discover that New Brunswick has just about the worst environmental law legislation in the country, in Canada. It even has a little section that is unknown anywhere in the world, that gives benefit to industry. I'm really bothered when the minister of the environment, either federally or provincially, has the authority to allow people to pollute or to harm the environment if it's an economically feasible thing to do. You know, the province is so poor that government will go over backwards to let something happen that is really detrimentally affecting the people who live here.

I know that there is nothing that your group can do about all of that. We have to change the policies. We have to change the legislation. And we have to do that politically. So I'm not going to give a little political speech here for that. But it just concerns me that people are given the impression that they can be consulted when the consultation is not worth a dam. It just goes nowhere. You get yourself frustrated, and you put a lot of time and energy, and a lot of research, too, into a situation. You go and make a presentation. Everybody very nicely listens, all those people who are supposed to be listening to you, listen, but when the action comes, there's no sign of your input anywhere. And I know this, because, as I said, for the last two years, I've done nothing but attend public meetings on all of these issues.

I'm a member of the Saint John naturalist club, and in the last year, we have had two speakers who are directly connected to the bay. One of them is a marine biologist who was talking about the health of mammals in the Bay of Fundy. That population is really fragile due to already, the industrialization of, and the commercialism of both sides of the Bay of Fundy. She knows that, and she actually told all of us how serious the problem is. I bet any amount of money that no one ever consults that particular person on the effects of any more industry in the bay. Or, how about all that salt, that salt water from the potash mine that we just heard this week that's dumping into the bay. Now, can that be a good thing, even though the bay is salt water. Is it good to pour a whole bunch more salt into it? I don't think so.

The other speaker was a scientist from UNB in Fredericton, and he told us, because his main study is algae, and the growth of algae. It turns out that algae gives us oxygen. That's what we're actually breathing. You know the story about how our oxygen is coming from the rainforest. Algae produces more oxygen for the world to breathe than the rainforest does. And you know all the concerns that the people are having around the world, about the rainforests

being destroyed. Well, he says that the algae in the Bay of Fundy is so sick, it won't take very much more for anything to kill it. And that means another commercial salmon farm will do it. And who knows this warm water that's coming out from the proposed new oil refinery, and whatever else is coming out of Point Lepreau. All of that's going to affect it. So who's asking those people about what's happening in the bay? Maybe tidal power won't do anything to affect the algae, but who knows? Those are the concerns that I have. I don't think that anyone ever looks at the really big, big picture of everything that's happening in the bay.

So, the cumulative effects — I'll come back to that. Because every environmental assessment has a definition of what a cumulative effect is. What I learned from sitting in on that law class was, everything is like a salami, you slice and dice it. So the cumulative effects are just for this one little tiny section. Nobody's looking at the big picture. Nobody's looking at the whole bay. That's one of the things that really concerns me, so when you're talking about tidal power, don't be talking about just what's going to happen when you put down your anchors or whatever the heck you put down. Don't go looking at the sediment that gets thrown around during that time. Think about what's happening through the whole length of the bay, and whether that's going to have kind of effect. And I'll be really, truly surprised — I will be pleasantly surprised if, when the environmental assessment actually gets done for this project, that someone has really looked at the whole picture. That will really surprise me because the government does not want to hear. NB Power, I'm sure, does not want to hear what the cumulative effects are because that might mean that the project won't work. Because right here in your recommendations, it says there should be a cautionary staged approach, which is really a good recommendation. But it does say that this would allow for future expansion into demonstration and commercial scale developments, provided environmental and socioeconomic components in the Bay of Fundy are not compromised. But, to the satisfaction of government and local stakeholders. You see, the local stakeholders came second, government came first, and that's the story of our life, I'm afraid.

I just have three questions. How do you determine acceptable development, because that was a phrase that was in the presentation, and I don't remember whether it was Tony or Heather whose presentation it was in. It mentioned acceptable development. How do you determine that? You know, what's acceptable to NB Power and the government might not be acceptable to me. So, how do you determine that acceptable development?

How are you going to really work in a really fragile environment? Because the bay environment is fragile. And when you're doing your presentations, Heather, especially, I noticed that you used the words facilitate development, the economics of the industry, safety terminology, and there was another word, standards. Not a word about the environment. Not a peep in that particular section. When you read anything that's produced, there are these little words that you want to just be looking for: mitigation. Mitigation's a dandy one. Cumulative effects is another one. And economic, socioeconomic factors. Well, you know what? You don't ever get the social part. You only get the economic. Anyway, thank you.

Facilitator:

Jacques Whitford:

Public Respondent: Well, how is that that some of these other things are going ahead then, ------ environmental affects? So there was, I mentioned earlier in the meeting, that had no environmental affects, how are they going to ------?

Jacques Whitford:

Public Respondent: No, pertaining to having effects on the environment, detrimental effects.

Jacques Whitford:

Public Respondent: How are these other projects been approved? Some of them have been given go-ahead, or partial go-ahead? When there are not environmental effects.

Jacques Whitford:

Public Respondent: Here. Here. The ones that are in the energy -----. How are they going ahead?

Public Respondent: ------ Jacques Whitford develop the report for the LNG —

Public Respondent: Pipeline. Your company did this.

Public Respondent: The pipeline ------ preliminary on the refinery. And all the ------ insignificant ------ and the young gentleman here in the brown shirt has been at council, the last three council meetings, saying that, that for decades, the house in front of him shared the driveway. And he made a presentation how that wasn't fair that four cars would go up and down that once a day, and that he wasn't consulted and how unfair it was.

Facilitator:

Public Respondent: Yeah, hello there, Art. I've got a few questions and comments. One of them is a — Some of this, I guess, I'm overlapping already, what other people have already said tonight. But I was wondering how extensive will these developments be. And that's one of the big questions, and it interlocks with other questions that I'll be asking as well. We have to achieve a certain balance with existing uses, that already are in the Bay of Fundy. I know we went over this in a day-long workshop that we had about a month ago, with a lot of different stakeholders, fishermen and stuff, and as David has said tonight, there's already quite a number of threats to people's livelihoods as it is, with the LNG tankers. So, we really have to look at that openly, and not just make this in an empty, an empty tokenist exercise where people squander lots of good energy and time, and then have a report go through that just doesn't take into account all their concerns.

So, the other thing I have to ask is who will be the stakeholders in this? Who's going to be putting up the money and who's developing an interest in it? And actually, the second woman over there brought that up earlier. I really don't think we need to have the largest corporation in New Brunswick exert itself into yet another area of our lives, and hold us to the wall when things don't go their way.

We've got to diversify the things that matter most in this province. So, if we're going to have stakeholders, it has to be either a diversified private source or it should be, as Marc was saying, have it under

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Public Respondent: public ownership, so that the people have a direct say through their government in how it is run. We have to remember, also, that this is an opportunity, a real opportunity, to get into the ground floor and develop some of the technology, develop and create the technology, and manufacture it here in this province.

Public Respondent: Instead of bringing it from somewhere else.

Public Respondent: We don't need to have any more high-tech jobs shipped out of the province, either to Ontario or Quebec or down to the States. We've got a lot of skilled artisans and craftsmen here, a lot of engineers, and yes, it may take some investment, but for gosh sakes, let's stop having people from elsewhere drain the province by investing and then taking off with the profits.

What happens, as we all know, we've seen this case by case before, for decades. As soon as things run dry, they go off with their tail between their legs and they close down the plant. We've got to stop that pattern. That's what I'm trying to emphasize, is to keep it as much as we can, in public hands. We have to remember, that corporations — yes, it's their main goal to create profits for their stakeholders, any way they can.

And the most recent example of this is the blood coal that is being burnt in this province up at Belledune. Just, in this past week, the twelfth union leader was murdered — tortured and murdered, in Columbia. He was a union leader of the coal mines down there, and it's coal partly from the — It's part of the coal from Colombia that's sent to this province. It's blood coal. And they murdered hundreds of people last year. They murdered 12 this year. This fellow had a wife and four children. That's when money talks. That's the dark side. Think about that when you turn your lights on.

We need to have a clean energy source. Not just clean environmentally, but clean in the labour sense, and something that we can feel proud of, an investment that's part of our province, and doesn't squeeze people or harm them or harm the environment. And this is an opportunity right now to take it seriously.

The other thing I'd like to say, as that lady mentioned, also, the environmental investment process in this country is severely skewed. At this point, over 95% of environmental assessments are rubber-stamped. Now, right now, if you look at the book called Unnatural Law by David R. Boyd, he spells this out, that most of the laws, practically all the laws in Canada, are discretionary by nature. Now, as it stands right now, I know that my party is trying to change those laws so they become mandatory. If someone is found guilty of polluting or damaging the environment, the laws should be mandatory, not discretionary. Right now, it depends on the kind of government that we have in there. So that's one of the things we have to change. But, as I say, it's people that have to change the kind of governments we have, and force them to be accountable to us, and to us in the long term, not just now, but in the long term for our children. That's basically all I have to say. Thanks.

Facilitator:

NB Energy:

Facilitator:

Public Respondent: Well, I've sat here and listened tonight, and pretty well all the speakers have touched on items that are certainly in my mind. You talk about the processes, something you just mentioned here and how it's good to see it coming forward. Well, I can only say, as a citizen who was involved very much with the LNG, and let's be clear here. We got ruffed up pretty good on that. That, that — If that's what you call public consultation, please, don't waste my time. Don't waste the community's time. That was anything but public.

We hear a lot of talk about energy hub, and how this is somehow going to fit into the energy hub. The teacher who spoke, I believe the second speaker, she hit it bang on the head. This is starting to smell like, as a public, we're going to take and dump millions and millions and millions of dollars into this, so that fat cat corporations are going to get a break on their power bill, and I'm going to subsidize it. I will leave the province before that happens to me. I'm not going to stay. If this is going to be truly public, then it has to be completely transparent. It has to be completely without any vice, any agenda, and it has to be for the citizens in this province, not for corporations, not to export it to the States. I have friends in the States. I visit there a lot. I like the place, but you know what? Let's take care of us first. And as far as developing it, it's a great idea. One of the gentlemen spoke about nuclear technology. That is so old world. That is a time bomb waiting to go off. If we're not going to take and use new, more environmentally friendly ways of generating electricity, and at the same time, reducing our electricity, like, God forbid, we may to shut off some lights. I mean, holy smokes, geez, you know, what are we going to do? We can't see what we're doing? I can't watch my TV. Like, let's get real.

If, as part of the assessment, if an assessment gets done, does not really take a hold of the fact that — Look around. We're kicking the living crap out this earth, and I'm scared to death that we've got PET coke coming, which is a horrible product to burn and put into the atmosphere. We've got the coal, which — I hear all kinds of talk about how they're going to clean it up and how it's going to be a great, friendly thing and generate all kinds of electricity. Certainly, the United States. Well, talk is cheap. Meanwhile, the atmosphere is being more and more polluted.

So, I guess the gist of the comment is that this is the start. I sure hope this is just the start of the beginning to think about having public consultations — real, meaningful public consultations, where we have a say, where we have a stake, where we are equals, not disadvantaged, not being patronized, which is what happened during the LNG process. And I'm sorry if I keep touching on the LNG

process. If you knew me, you'd understand, it's an extremely sore point.

I want to touch on that just briefly, as well. The comment is that we're going take and put the turbines under the bay. I can save you all millions and millions of dollars. You can't do it. You know why you can't do it? Because we were told that there was no way they could lay a pipeline on the bottom of the Bay of Fundy. That just can't be done, no, we can't do that. That's environmentally impossible and technologically beyond our reach. Those are the words. So, you can't put turbines on the bottom. I can save you millions. Don't bother. Can't do it. It can't be done. Or, were we lied to? Good question. I know the answer. Right? We were lied to. (Applause) Let's be honest, we were lied to. Okay? It's all well and good to talk about public consultation. I remember the headline, and once again, LNG, I'm sorry. I remember the headline. There was going to be no way, ever, that that line that's going through our city, was going to be anything but an export line. The head guy that placed it — It's never going to be a spur line. Really? Funny thing is, because at the hearings, we're talking about spur lines.

So we sit here, and I think it's been made pretty clear, we're not interested in signing on to a project that has, certainly, I think, a big environmental impact, and being told, oh, yes, it's not going to go anywhere. It's for the province of New Brunswick, and then find out later that we've been sold a bad bill of goods. I guess what I'm saying is that, for me, and certainly for a lot of the people here, we've been once bitten, and we're going to twice shy. I'm sorry if it seems that we're a little hard-nosed, but you have to understand, we've been down this road before, and we really don't want to go down it again, if it's going to be meaningless. I've other things to do in my life. I really do, and so does everybody else here. The people that were involved in the LNG fight put one pile of time into it. And, as someone mentioned, we might as well have been spitting into the wind, because you know what Their minds were made up before we ever sat down.

So I guess, for my involvement in unions and labour circles and meetings with the boss, there's a word that came up was called consult. Well, I can tell you, I describe it in two ways. First, they con you and then they insult you. If you're going to consult with us, make it real. I realize you people had nothing to do with it, but there are people here, representatives of the provincial government. They need to take this stuff back. Because you know what? There's an election coming, and that's just about all you can say about it.

I think it's really good that we're talking about renewable resources. I'm not so sure that tidal power is that new. I remember them talking about it when I was 15 years old and that wasn't yesterday. I wish I was 15 again, but anyway. I don't understand why we're so slow to get on the bandwagon with wind generation. I understand wind generators have some type of — they have some issues around wildlife and the potential harm to wildlife. But Norway — someone mentioned Scandinavia — those countries have large wind farms and they're working, and they're working very well. Right? I mean, holy smokes, I don't know about you guys, but I don't think the wind ever stops blowing around here.

The turbine thing in the water, that's a great idea. I know it's something to look at, but we just don't seem to be paying enough attention to other forms of energy. I really think that — Are we going to spend millions and millions of dollars on this when, for the same amount of money, we could be so much further ahead in terms of generating real, renewable, non-polluting, environmentally friendly energy.

I hope this is just a start. I got a million questions and you really, really, really need to do us justice in this community. From here down to Blacks Harbour, St. Andrews, all up and down the coast, you really, really do — the province really, really needs to allow the people to have a real, real, real substantive say in what's going on, and be listened to and be taken at face value. And you know what? Maybe at the end of the day, the answer to the question is no, we don't want it. And that's okay too, because we live here. This is our town. This is our province. That's our bay. It doesn't belong to any one particular person, it belongs to the citizens, and it shouldn't be for sale. And that's the last thing I'm going to raise. Is this going to be a P3? Because we don't nothing to do with that, folks. I don't know if anybody here knows what P3s are. You want to stay away from them. Thanks.

Facilitator:

Public Respondent: Thank you. Tom Benjamin. I'm with the New Brunswick Salmon Council. It occurs to me that I should differentiate myself and explain that it's wild Atlantic salmon, not the aquaculture industry that I'm here to talk about. We do have some concerns. The Bay of Fundy particularly, the inner Bay of Fundy strain of wild Atlantic salmon, has really been decimated over the last few years. So we're concerned about a project like this.

While, in general, we're very supportive of any sort of a clean, sustainable energy source, this could also be damaging, potentially, to wild Atlantic salmon, particularly in the depressed,

inner Bay of Fundy species, that's currently listed under SARA. We're concerned about the potential aspects of the electromagnetic fields that might be given off by a system like this. That may be resolved and we may be able to deal with it. But I would like to get that on record, that we would like to see that addressed. And also, the positioning of this equipment, to be sure it doesn't interfere with the runs of wild Atlantic salmon.

At one point in time, we had 40,000 fish in the inner Bay of Fundy returning to their native streams. We're now down to handfuls of fish, hundreds in some cases, and some ------ totally ------. So that is something I would like to mention and have brought forward as this whole dialog continues. Thank you.

Facilitator:

Public Respondent: I don't mean any disrespect to any individuals here, but after reading the environmental impact assessment for the LNG plant, and being an intervener against the Emera pipeline going through the city of Saint John and Rockwood Park, and after reading the preliminaries about the proposed refinery, all reports done by Jacques Whitford, I could do a better balanced environmental report than any of those I've read. So, as individuals, I'm sure you're not bad people, but if the government of New Brunswick wants to be taken seriously, they really should find someone else to do work with.

Here in Saint John, with the LNG plant and the pipeline, and the burning of petroleum coke, as well as the proposed refinery, the greenhouse gas emissions from Saint John will be seven times the per capita levels for the rest of Canada. And with Canada being the highest per capita emitters of greenhouse gases in the world, or in the top three anyway. It depends on what you read, whether it's Canada or the US or Australia. We're way up there, and we'll have seven times that amount. And the government of New Brunswick, the Environment Department and Natural Resources, it's doesn't matter who you talk to, they seem to all think it's absolutely wonderful. I think it's disgraceful.

When we had the hearings for the pipeline here, the federal counterparts of the Department of the Environment, Natural Resources and whatnot, referred to the provincial departments as a joke. That came out to be the absolute truth. So, with all due respect, this is just another — This is just like Charlie Brown sitting in the classroom, listening to his teacher, and all you hear is wha, wha, wha. This is no more than that. I hope that things do become legitimate and balanced and fair, and time will tell.

Facilitator:

Public Respondent: Yeah, I'd just like to make just one very short little thing, in summing up of some of the feelings here. What I get is that the people, as citizens, feel really short-changed in this province. It's almost like a sadomasochist relationship between corporations and government and the people. What a really beautiful vision should be entailing is that the energy policies of any place, New Brunswick in particular, and which could be beautifully changed and turned around, is to make very home self-sufficient in energy, and every home have a greenhouse and have its garden. That should be the kind of vision in which everybody is out of debt. The kinds of opportunity that we've had, for instance, just with this gas deposit. That could have put the whole province in the black.

Louis Robichaud, and I really am an admirer of Louis Robichaud, because he shifted a whole lot of money up to the Acadian in the North Shore. But for 10 bucks and a million shares, he gave away the biggest zinc mine in the world, which generates approximately $1 million a day in gross revenues. Okay? That's over the last 55 years. With that million bucks a day, say if you took off 60,000, we could have repaired every barn. We could have supported every small fisherman, every small-like business, and we could have had a wonderful, little community of people, or series of communities, all knitted together, and in which you would plug in this green energy.

And so I'm really sorry to see you guys coming on, finally, with the right kind of approach after we've almost destroyed the fabric of society with this sort of banditry that's gone on between the corporations and the government. And they are one, one. The government is dysfunctional. It almost seems to me also that the civil servants, although I respect a lot of the people in the Department of Natural Resources, but when it comes to decision-making, they're dysfunctional. So the whole thing is in a state of collapse. But let's try to turn it around. And you guys could become one of the people to do that, you know, to start moving it so that all of these policies and all this energy goes for us, as citizens, rather than for a few corporations or whatever, power building bureaucrats. That's enough. I'm sorry for interrupting.

Facilitator:

Public Respondent: Yes, Randy Harquail from New Brunswick Aboriginal People's Council. I'm the zone director from St. Stephen clear down to St. Martins. All that shoreline is a territory of my own. That's my concern. A lot of this, what you're doing now, is great. I'd like to see a little bit more done. When it comes to fisheries, and when it

comes to environment, or marine mammals or anything, marine birds, there is — Nobody had any real idea of what the impact is going to be on any of this.

There's many things going on in Europe at the present time. A study can be done to find out the type of process they're doing and what they're going to do about it, how much impact does it have on to the environment and the fish in the area. If a study was done of that sort, and maybe a few people could come back, and we have another meeting, tell us, well, okay, this is what we've found. We've found that there's two, three, four different types that we have. This is going to be minimal bothered, it's going to be this, it's going to be that.

How much silt are you going to spread across? Like this gentleman was just saying, about the wild fishery, this is one of the things that's very important, and it's very important to the Aboriginal because that's there food. And not only that, the food has gone from the Bay of Fundy because of permission that was given to draggers that go out there and ruin it. Right now, we have no more hake in the river. The salmon are right down to almost nothing. We got no natural stuff because a lot of our wild salmon actually stay in the Bay of Fundy here, they don't leave. But the thing is, if they could come back and at least tell us what you're going to do.

As far as myself, and NBAPC in the Fredericton office, it would be very interesting if you could get back and let us know what's going on. Involve us in any way you can. We've got a whole group of people that are very interested, and we've got people that depend on their food fishery from one spot to the other, like I say.

Facilitator:

Public Respondent: It's Jane Wilson again, the teacher. I'd like to say that I think that the idea of having a public discussion, and having it recorded and actually transcribed, I know someone's going to look at it, and I'm pleased. I remember hearing Ralph Klein speak one day, and he said: If one person calls and complains, I'm not doing anything, but if 300 or 400 do, I'll listen to them. So I think that the government going around collecting this data is a really positive step. I think looking at an energy source that might be good for us, as long as it's good for us, is a really positive step.

I have a problem with hiring a consulting company, from my understanding, that's been hired to work on two or three different projects, that didn't go properly, that we know favouritism was given to big business. We need to not be hiring the same guys to do the same study, or do different studies. There is often corporate

agendas with companies that are doing studies, like when you look at the connections spreading out over the distance. I'm really hesitant, when I see that name's come up a few times, that we shouldn't do that. We should be looking for spreading that work around. And to have a company do an environmental study, or whatever, investigation, when we don't have anything there to study yet, I'd like to know how much money it cost. Like, what did we pay? What did the province pay this company to write this? And I mean, what could you write? Because there isn't anything to actually study, so it's all speculative. That, I think, is questionable. We should not make friends with one company, and it should not be for the benefit of business. I think we are all in agreement that if it's going to benefit us, it's great, but if it's going to be for corporate — And I wonder what companies are out there looking at this project. Who's backing it? Who's pushing for tidal power? What big companies and what's their, what's their — how do they win in the end?

To have it transcribed and someone read it, and being a beginning step, is a really positive thing. I'm pleased that you're here and that it is being written. Thank you.

Facilitator:

NB Energy:

Public Respondent: But you know, with the government of New Brunswick, they've got something in their mind, but they're not going to tell us until it's already done. And that's the thing that I'm worried about. What do they really know that we don't know? That frightens me.

NB Energy:

Public Respondent: But that's the thing. The rights — don't give them the rights. We own it. We can do things with them, but don't sign off to them.

NB Energy:

Public Respondent: That's dangerous. But I guess when we look at the history of the studies that have been done on the other big projects that have not turned out to benefit us —

NB Energy:

Public Respondent: The history tells you to be leery, and we went again.

NB Energy:

Public Respondent: What did we pay for that, as a province? What was the cost? What was the cost of that study?

NB Energy:

Facilitator:

Public Respondent: Well, I guess when you look at it — She mentioned a UK company and an American company, and the other one was from BC, and nobody's doing it commercially yet. What are they coming to you with? What are they proposing? They're not doing it either, so why should we think they're the experts, if they're not doing it either?

NB Energy:

Public Respondent: Yeah, but we got a history with wind. Like the rest of ------

NB Energy:

Public Respondent: And who's EMEC?

NB Energy:

Facilitator:

Public Respondent: Okay. ------ I'll take this side over here. I've listened to everybody here tonight and I really appreciate the professional individuals that have come out, and made their points. I hope people listen. I don't know. Do people really listen? Is it just more placating? Well, we'll take this back, and we'll do this and then you hear the concerns. Well, this has been going on, and Heather says — Don't take this personally, because I'm sure that you must have — when you listen to some of these things, you must say: Well, gee, there we go again. Right? But you say this is new. This is something new. It's not new. It's just different. It almost seems like we need a template that's going to work in all these — When all these concerns come up, we need a template that, this is the way we do things. There's the accountability. There's the — You know, who, where we get our information from, and who we're going to hire, how much we're going to pay, and how are we going to do it? It's not new. It's the same; it's just different. That's all that it is.

You know, this room here tonight really should be filled, but it's not, and is it because people weren't informed? Or maybe they were informed, and for obvious reasons, they're not here. Right? Is this really maybe just an exercise of futility, raising people's stress levels,

maybe blowing a whole lot of hot air or just going through the motions?

Tony, really, I'll tell you, and again, don't take this personal, but it really concerned me when there was a few folks back here asked you a question, I forget what it was specifically, but your response was, you mean in other countries? I mean, the question was clear. It's here. We're talking about here. I mean, I don't think anybody here misunderstood the question. Then somebody said well, maybe you should be hired instead of Jacques Whitford or whatever it is. I don't know, maybe you wouldn't be the right person to be hired, I don't know. It was a question. It was simple. There's nothing complicated about any of this.

I don't know. I just see people that are committed to working inside the box. Receiving their salaries, doing the same old, same old, and not even realizing that it's their children and their children's children. I mean, we're all in this together. And then, again, with all due respect, I hear people say, well, this is our — Let's make sure we get it first. I thought the whole planet was ours. Somebody here said something about the planet we're turning in — You did. It's turning into a cesspool. Can we not look outside the box instead of just where we are at the moment?
So, it's tidal energy. You know, solar energy, wind energy. I don't know. We got a 10% agenda. We've got this, we've got that. Maybe we need to decrease the population. I've heard it said that a billion people on the planet would be perfect. You know?

Anyway, to me, it's just more smoke and mirrors. It's politics and money. It's the same old, same old. 'm glad I came out. I think I'll make a habit of it. I'll probably same the same old, same old, because it's nothing new. It's just a little different. That's all. Thank you.

Facilitator:

Public Respondent: I'll just make a couple of statements and a couple of questions. I guess the sentiment that I get, for the most part, is that there's a serious trust deficit when it comes to the current government with respect to environmental policy and how they're actually addressing local communities, in terms of asking them for input, and whether or not they're actually listening. I know that the mic is on and they're recording this, but is anyone actually listening to it?

I'm also curious whether or not Hector will get a copy of this. I bet he'd probably be curious to hear the amount of times that

Jacques Whitford came up tonight. It's kind of curious. I didn't expect to hear that name spoken as much tonight as it was.

I'm also kind of curious if it isn't somewhat disingenuous to talk about determining the ecological impacts of things like this, when there are so many very simple steps that can be taken, and they're not taken, to see to the health of our waterways and the health of the bay. Clearing existing waterways of obstructions, banning dredge fisheries, and that's just a couple. There's at least half a dozen others that I can't think of right off the top of my head. But these if simple measures are not taken and given the environment of that trust deficit that I talked about, what real expectation can we have that any sort of public discussion or environmental assessment will have any meaning whatsoever? That's it.

Facilitator:

Public Respondent: I really would like to applaud the people that came out tonight that are in the professional arena. I think we're all real concerned citizens. I think most of us are. I'll say it that way. But it's got to be really frustrating for you guys. It's got to be really frustrating. I mean, you've heard it more than once. I've only heard it once. I mean, I see it a lot on TV. I wanted to make that point, that you people that really are in the know, and you've got the knowledge under your belt and the experiences over the decades and you keep coming out, and you keep coming out. Hopefully, there's going to be a change somewhere. Thanks again.

Facilitator:

Public Respondent: If we have a written questions or comments, to whom do we address it?

Facilitator:

Public Respondent: I'd like to raise some final process ------ very important. One of them is that making transcripts of the meeting available to the people who put their names on the list tonight.

Another thing is that there's still a lot of people in our society who don't have computers. So, you know, all of the material that comes from this, if it moves along any further, should be available to people in hard copy, in documents which they could receive in the mail and take home. I'm one of those people who don't enjoy the computer. Many of the people in these little communities are going to be affected by the tidal power and don't have them.

The other thing that I want to ------ say is that if it moves along any further, the consultation, it should be done more fully with workshops, as well as this kind of — I'm glad that it wasn't an open house tonight. It's been the practice of large corporations in New Brunswick and the government recently, to hold open houses, where people trottle in through the day and talk to the nice man or lady with the coffee and the donuts, and your neighbours can't hear what's said, and they don't hear what their neighbours said, and the media don't hear anything except the one or two people who happen to be trottling in and out when they're there. So it isn't recorded in the community. So the openness, the transparency, and sharing of the knowledge you gather at public forums is important. I just want to say this because in almost everything the province, the large corporations of the province, and NB Power are supplanting a couple of meetings with open houses. I mean, it's ------

The other thing that I'd like to ask is that, in the future, when it comes down to the environmental assessments that have been done at a level — You know, the federal environmental assessment that intervener ------ funding is made available to the public, so that other people don't come there ------ consultants and lawyers and geologists and biologists, where the communities, small communities and public interest groups have to go out and hold yard sales and bake sales to try and raise enough money to get a little bit of professional advice, or someone can't make it there that day because they can't afford someone to do their daycare. So the public's support is important in this, and all stakeholders should come to the table with the same level of support.

Then there are a host of other things. One which was brought up tonight, and we should move away from hiring corporate consultants any further. One of them was discussed quite a bit in the room here tonight, that any of these large corporate consultants have a long history in the region of a — Well, I guess writing regularly reports that the proponents of the project usually pay them ------. I participated in every major environmental assessment in New Brunswick and most of the Maritimes over the last 25 or 30 years, and I have yet to ------ an environmental assessment on any project that a proponent pay your consultant to do, which spoke against going ahead with the project, or that they — any significant large recommendations of changing the project. I think if we can move away from this with — from professional corporate consultants, and do it with — in another way ------.

So anyway, I'll leave you with those things, and I'm sure that they are based on the ------ any other meetings, that ------ as well. These are just some of them. There are minor things that, I suppose, like ---

--- and other kinds of things, although I do find this group ------ tonight. It certainly has been a lot worse. ------ It is important to check out facilities ahead of time.

Someone wondered, I guess, if the gentleman ------. And my name's Dave ------ meeting tonight, I think he summed up very well what a lot of people said in the room, in the hope that he's able to join with some of the community groups and some of the environmental groups. I'd be proud to have him as a member of the Conversation Council.

Anyhow, I think that a lot of things that were said here tonight in the meeting, have to be looked at quite thoroughly in the process of this, because the process is the most important thing. It's more important than tidal power or anything else right now. This community has had things imposed upon it which have not been good economically for the community; socially for the community; health-wise for the community or the environment. And the province of New Brunswick, just because of environmental assessments that were distorted because of the whims of government. You know, being able to — or pressure from corporate interests or Crown corporations in the past. Certainly, everyone in this room has felt it. There's people in this room, right tonight ,who are being pushed out of their homes and properties which their families have lived on for generations, just a few miles out here at Red Head and Mispec. And they're forced to leave because they can't live under those kind of conditions. And if those projects go ahead; then of course, one of them already is going ahead, the Liquefied Natural Gas project.

So, we're seeing all kinds of — The people that might like to hear about environmental assessment might think, well, it's not too bad a thing, the kind of environmental assessments that have happened in New Brunswick here, are the people who don't know about them, have never participated in them. Those who have are thoroughly fed up, and so, we have to look at doing this in a different kind of forum. Thank you.

Facilitator:

End.

Facilitator
Jacques Whitford
NB Energy

Grand Manan CD1

(Introductions)

Public Respondent: Claus Sonnenberg, Grand Manan Fishermen's Association. I have been asked to come partly because we have a letter from the minister. I guess he wrote it, which basically guarantees stakeholders specific consultative processes. One of my questions is, " Is this consultative process for the stakeholders involved". Maybe you can answer that at some future time. The letter is fairly specific and I guess you are familiar with it.

NB Energy:

Public Respondent: Does it change by date?

NB Energy:

Public Respondent: June 9, 2006. I hope that promise does not change with the date.

NB Energy:

Public Respondent: I have a couple of questions. Maybe I can go through them, Arthur. I might start with you. Why hire Arthur and his group to come to Grand Manan to talk about tidal energy? Is it because this is an effort to talk to the environmental concerns? If it is, you have not done a very good job. The coastline of New Brunswick has a lot of stakeholders and stakeholder representatives; none of them include this group. So I'm curious why that eco-group from, I guess it's still Cornwallis. I do not need an answer, and I know Arthur personally, so it is not addressed at Arthur; it is more addressed at you, the Department of Energy. If you are the ones who are conducting this, why you would go outside the province to help you hold community meetings. It seems strange to me. Maybe there is a reason.

You mentioned that the study, the Whitford study, talks about measures to reduce mitigating the problems. Can you explain to us what those measures are that you developed, because I find it difficult to understand what measures you would take in Head Harbour Passage for something that occurs there versus, let's say, a weir that is situated in White Head, where there is a lot of tide off there, which might be an obvious location. Have you determined what mitigation measures you would take because it sounds to me like that's what the purpose of the study was?

You talk about a threshold in terms of what you could do and still do it. Can you explain that a little bit more to us?

You talk about one of the problems being the lack of identified site. I have a big problem, because I do not even know what kind of a scale you are talking about. Are you talking about turbines across the Bay? Are you talking about turbines in a 100-yard location eventually? It is very important to my group, before we can have meaningful dialogue, to understand where and at what scale, and the kind of technologies, and we are worried that the session you're having like tonight will be used for your consultative process, when in fact, it is difficult for us to give you consultation input without knowing those important things.

Facilitator:

NB Energy:

Facilitator:

NB Energy:

Public Respondent: From what I understand from the presentation, it's going to come out with mitigating ------. Tell us examples of how you are going to mitigate ------

Jacques Whitford:

Public Respondent: I guess what I was interested ------ mitigate effects in terms of the fishery.

Jacques Whitford:

Public Respondent: ------ from the association's point of view, get an idea of what mitigating effects you are considering in terms of the fishery and how it's been arrived at.

Facilitator:

Jacques Whitford:

Facilitator:

NB Energy:

Public Respondent: Heather, I think the reason for the question should be obvious. You are quite capable of coming here, or Tony, or whoever and running a meeting. Why do it this way? Is it because of the term eco in his group's name? You are trying to pretend that this is somehow an eco-friendly thing? Which, I believe, it is. I think, personally, tidal power is probably a good thing to research, but I have to wonder why, because Arthur's role isn't very large in this, from what I can see.

Facilitator:

Public Respondent: I don't want to belabour it, but I think it would be better to see the Department of Energy come and call a meeting just for myself.

Facilitator:

Public Respondent: Because this was two years ago ------.

Facilitator:

Public Respondent: I think it certainly goes without saying, that in a community which relies on fishing to the extent that Grand Manan does, sharing the water that fishermen use with tidal energy is something that fishermen don't want to have to give up anything, which I think is a fair comments, isn't it Claus?

Looking at the current technologies that are out there, virtually all of them would interact fairly negatively with fishing equipment. Fair comment? I would like to know, and really it is a question that is directed to fishermen's associations and so on. What are some of the key obstacles that need to be mitigated in terms of technology? If there were a technology, for example, that would not foul equipment or fish, I know that Verdant, in installing the one in the East River, had to go through quite a lot of hoops because of the whirling turbines—even though they go slowly — to prove that they weren't — They had video cameras and all sorts of things watching the fish. And East River is probably not a really prolific fishing area – New York, you know. Obviously, the actual turbines do not lend themselves to being friendly to fishing areas or types of fishing. Has the fishermen's association thought about the key,

critical factors that you say are technologies have to overcome in order to coexist in an area where fishing is very important? Has any thought been given to that, Claus?

Public Respondent: Our thought is very clearly based on location and size. If you talk about a site on Long Island, we have a different fishery than you have out at the Proprietor. Again, it's very difficult until you get site specific. I think the Whitford study mentioned that as a constraint. I wonder how or to what scale these kinds of discussions will be fruitful without having that kind of information. Obviously, our concerns are based on displacement, on gear fouling as you say, on the resource, those kinds of things.

Public Respondent: That is more or less what I was wondering about, like gear fouling and the resource. Have you looked at which are the things —

Public Respondent: We don't know of any studies that have been done, for example, on underwater sounds and how they affect the fishery. There's an example. I don't know if Whitford did that, did he?

NB Energy:

Public Respondent: There is some information out there. Certainly that would be a serious thing, but again without knowing the mechanics, the instrument, how do you arrive at that? Impossible.

Public Respondent: I was just wondering if you had identified the kinds of concerns, but you have mentioned two or three: sound, fouling, displacement and the resource.

Public Respondent: Should it not also be gauged against the benefit to the community? Fishermen would probably be willing to give up a little bit if they knew that their community was going to benefit, but if all the power was going to be shipped to the U.S, I am sure that they would have a different opinion on how much they are going to give up to have energy supplied to their community. I think that is also in a measure of scale. Maybe we can give up this little bottom, but if you are going to take up the entire area, and it's all going to be shipped to the U.S., then it may be something that we are not interested in at all. Again, that comes to scale. What is the scale of the project?

Facilitator:

Public Respondent: I am not sure, Lori, that the fishermen are willing to give up anything. When you talk like that, who wants to give up their fishery? Raise your hand. Who wants to be put on the breadline?

Raise your hand. Some of these things are very specific in terms of geography. As we found out with aquaculture, we are willing, and we have promoted aquaculture sites in certain areas where people have moved their resource gathering, whatever it is, down the Bay somewhere, but eventually there is a limit. Of course, the province seems to have a problem with that. The idea that one person would give up his livelihood in that particular area, I don't think, speaking for fishermen, I am ready to say that.

If the Department of Energy thinks that they're going to put something somewhere that displaces someone, then there is going to have to be some kind of reimbursement, I would think. I think the more the Department of Energy thinks that way, the more acceptable it will be as it goes down the line, and it is not a small amount. Just putting one weir out of production, if it is the right weir, can be $100,000 a year and more in terms of lost wages to the community. More.

Facilitator:

DNR:

Public Respondent: It would be nice, though, if the Department of Energy focused this consultation on one or two sites that they are thinking about. Why map the entire coastline when probably 98% of it is unsuitable for tidal energy production.

DNR:

Public Respondent: You see, you can't do that. That is my problem with Crown Lands. What is happening on the coastline of New Brunswick is different from what happened last year, and it is going to be different next year? It was not very long ago that we did not have a sea urchin fishery, for example. Today, we do not have a very strong scallop fishery, but one time we did. Etcetera and so forth.

DNR:

Public Respondent: You see, we don't want you to do that. We want you to tell us where you are thinking about, and we'll say, look, we will give you all the information because you will never get all that information until you identify the area.

DNR:

Public Respondent: But with this process should not be used, then ------ said: Well we had consultation in the high school on Grand Manan, and by

the way, nobody identified that site as being important to them. That is what we don't want.

DNR:

Facilitator:

Public Respondent: I read part of the background document, the parts that I felt that I should because it is a fairly large document. One of the tables stands out and that is Table 4.1 where it actually identifies some of the sites in Bay of Fundy. When you look at this, it's like there's very few places you are actually going to try. The two Grand Manan sites that are indicated, there is a no beside it. Are they going to select for commercial use? No. It is actually right whales that the reason is, not fishing, not any other thing. That is fine, if you want to use right whales, that's good. We need all the help we can get with them.

It is very, very small of the actual areas that are even going to be considered. Coming to Grand Manan, it is nice to talk to us. But when we are not even going o be considered in these projects at this level, although you do have that maybe there are small places where they can be done, you wonder why the process is going on. If Head Harbour is the place in New Brunswick where it is going to be tried, or up at Cape Enrage, then why are you coming to us at this point to talk about these things, when we have already, essentially, been written off.

It does come back to the question of scale. If you can have a little wave generator that can sit in Flagg's Cove by the wharf, and is not going to affect any fishing and things like that, then you are probably going to get a better response than if you are going to put it in an area where there is a lot of activity. You'd be hard-pressed to find any place around Grand Manan that isn't used by something. It is just widespread in the entire area that people are allowed to fish.

NB Energy:

Facilitator:

NB Energy:

Facilitator:

Public Respondent: That being said, I can also see benefit to looking at background data, which we desperately need in a lot of areas. In particular, Claus has already mentioned acoustic. That is

something that is often ignored because we just don't know a lot about it. To have some moorings where you could put some hydrophones down and actually get baseline data would be amazing. It would also help in a lot of ways because we are trying to figure out where are right whales, and are there right whales that are going to be impacted by expansion of the lobster fishery or by changing the amount of traffic that is going in a shipping lane, and things like that. I think it is important to get that background information before anything really happens so that you can have something to compare to. In the long term, to also add on the environmental monitoring in any of these projects.

With Head Harbour, there was talk of putting in a demonstration or a test turbine. What stage is that at? Minas Basin, I think, is in the process or is already there.

I couldn't tell you which, but I know there was talk of putting a demonstration turbine in.

NB Energy:

Public Respondent: So what is the status with the Minas Basin demonstration or test?

NB Energy:

Public Respondent: You brought something up that I really completely disagree with — an EIA. An EIA is just somebody with a wallet to get things to go their way. I think you need to start using the right tools to actually compare and actually give somebody who does not have as big a wallet or doesn't have a wallet at, which is wildlife, a chance at being represented and actually taken into consideration.

There is a paired comparison matrix, which could be used as a tool instead of your EIA, and if you took into consideration a couple of things that we would like in it, that would be grandfathering and tradition. I know the EIAs are profit and sustainability, but you can work that out of anything. You can work backwards. An EIA can be worked backwards to work out. And the fact that we don't have — Like I say, I have seven daughters on this island, who I would love to be able to see in two generations live here. We go back clear to the Passamaquoddy Indians, who are not even recognized anymore, and we actually had to do a DNA hunting for the Native North American haploid in our fishermen to prove that we were here because the government didn't want to hear that we were that white and that still Native aboriginal descendents. It is not something they want to hear, and they are not paying any

attention. They are saying: Oh yeah, you can be Passamaquoddy, and you can actually be as white as you are, and you can have rights to the shoreline as long as you go down across the border in Maine. But you cannot be in your actual, traditional Canadian land, and be still here, because we have decided that we are going to deal with what we consider Maliseet and Micmac. Now I got back also to the Tomas and the Micmac in Nova Scotia, but I know we do not get any consideration to live here forever and ever.

And in my time, I saw a capelin run on Grand Manan, which is very — Everybody says it never happened. But I was about 12 years old, Seal Cove sand beach below the Devil's Oven, sturgeon in Seal Cove Creek, and they told us that there used to be sturgeon on a regular basis. But when the logging went through, they basically wiped out any sturgeon coming up the Seal Cove Brook and the Deep Cove Brook apparently, also.

The other things was tommy cod. When they put in the new bridges, they brought the cement up so high that the tommy cod never went back up into the brooks. As far as I know, nobody else — My kids, I have taken them down several times to where they could cut tommy cod out of the ice, take them home and have them come alive. I have never been able to find the tommy cod.

There are a whole lot of people who are not represented, and an EIA doesn't represent anybody except for a big wallet. I think the EIA should be absolutely stricken, and any tool should be stricken that doesn't benefit both parties or three parties as a measurement tool. An EIA is not a measurement tool; it is an advantage for people with money.

Facilitator:

Jacques Whitford:

Public Respondent: ------ terrible. I go down the shore and put my kids five out in five directions. I say: Take 10 steps away and pick up what you can coming back to me, because we only had notice that there was a Huntsman's meeting about rockweed, and I might have been able to catch the boat if I could get there within 20 minutes. So I put the kids out on the beach, on the rockweed. They came back, and we had 61 different species. They didn't pick them up going away from me; they picked them up coming back to me. We had 61 different species in that bag. We took them up there, and they told us there was nothing of any concern that grew on that rockweed. But by the time we've taken it up with the rake, moved it into a dory, taken them on a rack, moved it up into a truck, and then

take to your drying rack and do your by-product or whatever else might be in that thing. Most of it is shaken out, and if it isn't, you are not seeing any amount of what was actually in that rockweed. And I had a rockweeder come to me and say: I go in rockweed anywhere I want, and then I go back to where my boss is, and he points his finger and he says: Sign that you rockweeded there. And when they go back and check it, it was how good the cut is. Oh yes, it's coming back fine because he never really cut there.

Jacques Whitford:

Public Respondent: ------ rockweeding on Grand Manan. And they increased it, and they increased it, and they are going to continue to increase it. The scallop — What do you call it? Oh, the things from scallops. There was small spat on it, there was razor clams, we had small octopus, we had all this stuff, and they are saying to me when I go up to this meeting, you are just a housewife. And yes, I'm just a housewife, but there have been housewives here for centuries, even if we were in a wigwam. And there is some reason that the rest of you guys are here is because there's housewives. But we ------ anyway.

The thing is, if you do not care for the ------, which was a Passamaquoddy tradition, you do not have anything else. Eventually you will eat yourself. You are cannibalizing yourself. If we can't take care of the other species, we have no right to say, okay, we need to take care of ourselves first, because it always ends up down the line until there's — you're eating ------ the little guy until there's nothing else to eat. There's no capelin here. I can't get smoked herring here. I can't get all kinds of things here.

They knew the fourth herring was gone, and they didn't do anything about it but discuss it for three more years, until now they are in herring trouble. And they are thinking it doesn't affect us on my level. It affects me. It affects the industry my kids can go into, the ability to stay on traditional land, the ability to grow up as a person whose family ties go back here longer than anybody else's. And it's like a — The tradition of putting that slice, I guess. I don't know whether it's slice, but the stuff they put in the salmon feed to delouse the salmon. I don't know whether that — I know the two types of salmon delouser actually took the larvae off the lobster, which has been a traditional mainstay on Grand Manan, but we'll get the government to come in and take ------ putting in processing plants and salmon, but they won't say: Okay, the lobster industry has really protected us for this long. We've got to protect it first. Instead, they lose the larvae off our lobsters, and wonder about it years later. Nobody talked about it. Rather than say: Okay, this

business to get Oprah or somebody her salmon is not good enough to keep our people still getting their lobsters.

Jacques Whitford:

Public Respondent: Harvesting rockweed.

Jacques Whitford:

Public Respondent: Yes, I believe it did.

Jacques Whitford:

Public Respondent: When Canadian Seafoods went to harvest they, there was — A proposal was done here. A proposal was done. With a small amount down here, and then it was increased and now it's — The kids protested. And then they were told: Oh, don't get the kids politically involved, it has nothing to do with them. It has everything to do with them. It's their futures. Then they got after us for getting organized at all. Finally, they told the fishermen's association, I believe, to stop even protesting it because they did try to stop them from using the wharf. Every time it is the guy with the wallet who stops us. And then they'll say: Oh, you ruined your fishery. We didn't ruin our fishery. In 1963, we were still the seventh most healthy fishery in the world, in this Bay of Fundy area. In 1963, the government decided to start licensing and regulating. We lost people that had to be taken out of the water because they were Native, and they could back in the water as long as they said they were white.

Facilitator:

<u>Grand Manan CD2</u>

Facilitator:

Public Respondent: I'd really like to ------ here, but we didn't get — I was ------. I think you guys ------ schedule on the CBC because we've had so many public consultations with the public ------ informed about, that we don't get ------, and we didn't get here tonight. ------ It's not so that this is the way we see people come in and do things. They say: Oh, ------ and the thing about your ------, the one thing that I have. I've been talking to some kids, and they have great ideas ------

Public Respondent: — is going, probably, to hurt us. In 20 years maybe you have the technology to come in and make use of our power and not hurt our fish ------ that. I think that's what you should say to the

technology people, yes, the waves are there, the stuff is, you make the technology, you use it, instead of saying, we've got this technology and you guys gotta get out of the way, because we're going to put it in there for somebody else.

Facilitator:

Public Respondent: I think when the technology is developed, we won't be of much interest to you. I think the technology will work in smaller places, and we won't have to sacrifice wildlife and ------ and that sort of thing. But I think the technology right now is a threat.

Public Respondent: But it has changed a lot, considering back in 1975, was it, when they were proposing to cut off both arms of the Bay of Fundy with tidal barrages. It is interesting. I still have some of those reports. We have actually progressed quite a bit in that time, and have actually learned quite a bit. That was before environmental assessment, impact assessments. Just to recognize that we didn't even know, in the broader sense — local people knew, but it wasn't known on a broad scale that American shad came into the Bay of Fundy as their summering place.

You had hundreds of thousands of shore birds on the upper part of the Bay that would be severely impacted by that type of barrage. It probably will be another 20 years before we even get to see any kind of tidal power that is going to be effective, and hopefully on a much, much smaller scale. These large scale things are just not going to work. We need to look at increasing the technology. Once they do increase it, hopefully it will go as fast as — maybe not quite as fast as computers, where we can't keep up with them, but that you will have benefit on the local level. I think that is what's important is the local level, being able to benefit from — particularly when you live on an island, to be able to have, to be self-sufficient is a very important thing.

We don't even have our wind power yet. Even that – Maybe that's too big of a scale. Maybe we should be looking at small scale and certainly not the really large-scale projects, which often are put out because they are the ones that are going to make money. There is a cost to making that money, and it is usually the environment and the people who live in that environment that have to suffer the costs.

Facilitator:

Public Respondent: I am not very smart when it comes to technology and certain things, but I guess, for me, I came here tonight thinking that you were going to tell me what the benefits would be of tidal

power, or what the bad things would be of putting tidal power in the Bay of Fundy. That was what — I'm not an engineer. I'm just a normal person who lives on Grand Manan, and my husband's a fisherman. I guess I kind of came here thinking that I was going to find out tonight more or less what my benefits would be, what would happen if you put it in.

So what do you think — I have kind of skimmed over that. What do you really think that this whole thing that you've done so far has accomplished? Has it accomplished the thought that, yes, it's a viable thing that we can put turbines in the Bay of Fundy, or is it going to ruin our fishery, or is it going to ruin the fish or is it going to — What is it going to do? I have none of my questions answered in that part tonight, because that is what I came here for — thinking that I was going to be able to go home and say: Okay, this might happen if they put the turbines in, but this might be a good thing for it. And for me, and maybe I'm ignorant in all these things, that I haven't got that answer, but that is really what I came here for.

With the Department of Environment, I have dealt with them. I was known as the water witch of Grand Manan a few years ago. Anyway, I was. I think back to the bridge that they built to PEI. When the bridge was built in PEI, there were fishermen over there, and they were told: Yes, it is going to affect you, or no, it's not going to affect you. In the end I think that they ended up — if I am correct in saying this. They pay the fishermen so much every year because the bridge is there. I think. I'm not positive, but I think that is what happened by building the bridge, and that they had thought that was going to be the end of it, but now there are more problems with sediment or something that is happening, which is causing it worse.

I know that you can do all the studies and you put it on paper and you prove it out, but lots of times when you do the actual thing — And you come here and you talk to the actual fishermen, I think because they — You can do all your calculations that you want, but the tide is it's own boss, right? I guess that's more or less what I have to say because when I think of the bridge to PEI, I know that there are major problems there, and that was all studied. There was studies done galore before that, but it didn't turn out the way it actually happened. I guess that's my feeling tonight. I came here thinking I was going to find something out, and I really hadn't found anything out. And when it comes to doing the studies, I 'm glad that you come back here, but for me, tonight, I didn't really learn anything that I wanted to know. Sorry.

NB Energy:

Facilitator:

Public Respondent: I just have one question, and it is to follow up on Sharon. I was actually very happy to hear her on the radio this afternoon about letting people know that this was going on. The reason I knew about it was that Mary Ann Jenouet sent me an email and sent a number of people an email, and then I looked at the list that she had sent it to and said: Well, there aren't that many people from Grand Manan, and I think that is always a difficult one of how you advertise these things. I think it is one that always as to be considered when you are putting on these public sessions. A lot of times, this is now many people you get, and you just take that as that's the way it is.

There are other things going on. I did try to — The council was interested, but I left it in their hands, and I guess they didn't do anything.

I think that is always something that we always have to keep in mind is how you actually advertise these things. There is certainly notice here in the school, but I don't see anybody from the school that's here. It's just something to keep in mind.

NB Energy:

Public Respondent: Even the marine resource planning, there were, I think, 18 people came to that, and that was well advertised. They had it in the newspapers.

Public Respondent: ------

Public Respondent: If it is in the newspaper, I automatically think it's something set up by Irving for Irving ------

Facilitator:

Public Respondent: ------

Facilitator:

End.

NB SEA TIDAL ENERGY – CAMPOBELLO
April 8, 2008

Facilitator
Jacques Whitford
NB Energy

(Introductions)

Campobello CD1

Public Respondent: This is Will Greenlaw. I would just as soon give my opinion and I think it is great. I think it is about time. There was the Quoddy dam project in the US back in — What was it, the '40s? That fell through, I guess, but here is working model in Eastport. I realize — As I was going to mention. I go by Eastport, daily, and I see the two yellow buoys where the generator is, and I was kind of wondering how that was doing.

Facilitator:

Public Respondent: Okay, sure, yes. Like I say, I think it is great. If it comes to a vote or whatever I can do to facilitate this I am 100% for it.

Facilitator:

Public Respondent: Thank you, but I am here mainly to listen and to hear and to receive input from the communities around the Bay so we can affect a better project.

Facilitator:

Public Respondent: My name is Trina Stevenson and I am basically in favour of the idea. It seems like a good concept. I do have some questions and one of them is: Is there noise associated with the gathering of energy from the ocean and that is mostly with regard to people that might live near by, if that would be a negative. But, I do not know anything bout it so I just question that.

I also wonder what the potential is. Would it be many, many different turbines, kind of creating a mat over the ocean, or are we talking about several large projects that can create an amount of energy that is economical?

But generally, I think it seems like a much better idea than some of the other ideas that have been put forth in our general area. In fact, I think Head Harbour Passage might be an excellent place to do it. If that could maybe forestall some other projects, that would be fine with me.

Facilitator:

NB Energy:

Facilitator:

Public Respondent: Joanne Tinker. I just had questions also about the noise. That was one of my concerns. And also how much interference does this have in the migratory process of the herring, lobsters, the whales. And how big — You put the turbines under water, but how much is on land or above the water that is going to create lights, noise, above ground that is going to effect the tourist industry here or different fishing applications, as well, right? Because the lights interfere with the weirs and the herring and the boats coming and going. Where are you going to put them? Are boats still going to be able to travel over the top or do they have to go around or —? I am not sure what's—. This is all questions and I think they need to be answered before any site —. I don't know if there is any particular sites they picked where one is more feasible than other. If it depends on how much tide is flowing. Just different questions, I guess, that was all part of them.

Facilitator:

NB Energy:

Public Respondent: Because the tide here fluctuates. What may be safe at high water, is also not going to be safe at low water.

NB Energy:

Public Respondent: Do they put cages around those turbines to keep the whales out of them, or porpoises or whatever from being caught into the currents?

NB Energy:

Public Respondent: How does it relate to the wildlife and —?

NB Energy:

Public Respondent: So there is no propeller, as such, in this?

NB Energy:

Public Respondent: Do they produce a turbulence of their own when they rotate?

NB Energy:

Public Respondent: So has EPA done a study or are they doing a study or ------

NB Energy:

Public Respondent: Also, I don't think, visually — Like at Head Harbour Passage, I know it's a long area, but down there, the lighthouse is also one of the most photographed lighthouses in the region. It's not maybe a — You are getting into a tourism-related —

NB Energy:

Public Respondent: Not that I'm against it, because I think green energy is, I guess, perhaps very appealing these days.

NB Energy:

Public Respondent: The tide is going to be coming and going twice a day.

NB Energy:

Public Respondent: It seems very appealing.

Facilitator:

Public Respondent: There are weirs right along the coast here and Grand Manan.

Facilitator:

Public Respondent: My family has fished. One year my husband set nets and they had little beepers or something they put on the nets to try to keep the whales clear of — the pingers, yes. So I know they are very sensitive to sound, so do they generate something that is going to keep the whales out of this area, because I enjoy going out on a boat and watching whales. There is a whale watch rescue team, here, too.

Facilitator:

Public Respondent: Robert Hooper. Even at this early stage of this technology, it seems pretty obvious that it is going to grow into something quite prevalent on the coastlines and any place where there's tide. Probably like a lot of technologies, now, they develop very, very fast. I'm kind of wondering, is this technology — If it's in the part here now where it's starting, somebody must have some kind of,

even a ballpark figure, of what amounts of energy can be generated through all these different sites, let's just say here on the New Brunswick coast in the Bay of Fundy.

NB Energy:

Public Respondent: But these predictions are based on the technology as we now know it.

NB Energy:

Public Respondent: It could be —

NB Energy:

Public Respondent: So would this be kind of like — If this could develop technologically, and with everything else involved in it, could replace Point Lepreau?

NB Energy:

Public Respondent: We live around here, so we know that it might slow down at one spot, but it is always going somewhere.

NB Energy: .

Public Respondent: I guess I'm kind of leading to this thought that is in my mind, that I know that they are not going shut down, replace Point Lepreau. They are already getting ready to build another one there. What I am wonder is: What is our benefit going to be, because they are going to be generating a lot of power, they're going to be selling to somebody. I have a pretty good idea where it's going to go. I want to know how it is going to benefit us besides — I know it's going to help some with the fossil fuel we use, but a lot of our power generated by Point Lepreau blah, blah, blah. Of course, Campobello is sitting here on a little island, almost in the U.S. Sometimes we call it "Almost Canada" and we're sitting here, and so, if we're going to generate any amount of power here, we'd have to try to backfeed it through that little line they got going to the mainland we got here, or whistle it across the border, down to New England.

I'm thinking more economically on this as a benefit to us here, besides just having our tides used for an economic gain that we do not benefit of it.

NB Energy:

Public Respondent: I said all that to say that.

NB Energy:

Public Respondent: Actually, the tide is not going anywhere.

NB Energy:

Public Respondent: The technology ----- the tide is not going anywhere. I expect it would not be very likely that a different company, whether it be a foreign company or another company outside of the province of new Brunswick, would be able to come in, in quite the same way. A lot of us, here, are not looking at this here like a ------ our next electric bill is going to drop by 50 bucks. A lot of us here are looking at what is going to happen here like 50, 60 years down the road. Is there going to be a lot of electricity generated that is going to be sold elsewhere and we're not going to benefit from it?

NB Energy:

Public Respondent: Everything else is so vague at this point in time. Like, you can't give us an answer on that. ------

NB Energy:

Facilitator:

Public Respondent: It's pretty hard to put into perspective what I said about how is it going to benefit us. But for example, all of the coast of this side of New Brunswick, the Bay of Fundy, Nova Scotia and all of that, that is a renewable resource. The tide goes up the tide goes down, unless the moon falls out of the sky. That is why I was curious as to how — besides some of the fossil fuel savings there would be, is how it's going to benefit New Brunswick as a whole and us here. Because I look at Alberta over there. They don't have a renewable resource over there, but they have the tar sands, but they have a lot of it, right? That is a benefit to the province even thought it is not renewable resource. My thinking is that this renewable resource, we should get a benefit. We are the people that live here and we don't live like way out on the end of Labrador, somewhere like we don't know what's going on. We know that the proverbial dollar means more, pretty much than anything. The dollars will come first, right?

We have to think on a preventive point, as well. Not to be negative and say we don't want this thing, but we don't want it just to come in and we're just left sitting here. And more comes in and more comes and more comes in, because selling more and making

more money from it, and the technology is getting better, and it's not bothering the water any because they can make it ------ Things can snowball and some things, if they are let go to a certain point, you can get them stopped.

Facilitator:

Public Respondent: I was wondering, is this the only place they're talking about putting those turbines ------ Head Harbour Passage?

NB Energy:

Public Respondent: ------ interesting. I've been in herring fisheries for 50 some years, weirs, ------ whatever. I'm director of the weirs association. That's why I'm here tonight. We have weirs back ------ lot of fish. I'm just wondering ------

NB Energy:

Public Respondent: (Inaudible)

NB Energy:

Public Respondent: (Inaudible)

NB Energy:

Facilitator: I had a question about the herring, just in terms of what fishermen know. Do the herring always come the same way, and do you have a pretty good idea where and when they come, or does that change?

Public Respondent: I have had good years and bad years. Usually, we had, like in the weir fishery, we usually have 10 or 12 good years and then we'll have ------ Most of our stock comes from down the Maine coast, but ------ stock comes from the head of the bay. ------ always come back. It's not like the cod fish ------

Facilitator:

Public Respondent: We visited a tidal generating station in Nova Scotia. It was on some causeway.

NB Energy:

Public Respondent: It was quite awhile ago and they had a cutaway model ------ . It was real interesting. I thought it would catch right on then.

NB Energy:

Public Respondent: But, like you say, this is new technology and the further it goes the better things are going to go.

Facilitator:

Jacques Whitford:

Facilitator:

Public Respondent: Personally, I think this is a great idea. I am just a little bit concerned over the fishery ------.

Facilitator:

Public Respondent: I had another thought. How far away can the land facilities be from the underwater? Do they have to be very close together, or can you have a turbine out in the middle of the bay somewhere and then the land portion of it closer, or does one have to be on top of the other?

NB Energy:

Facilitator:

Public Respondent: I've seen the American one and there is probably 50 or 80 feet between two yellow ------, which are ------ buoys and fairly close to the shore. It's right across from the old ------. That'd be Deer Island Point. That's all you see is just the two ------. There's no flashing lines, there's no, you know.

Facilitator:

Public Respondent: I suppose you could drive right over it if you wanted to. There's no warning or ------

Public Respondent: ------ prototype ------

NB Energy:

Public Respondent: It's not a full-scale version.

NB Energy:

Public Respondent: No, it's ------ self-sustaining pilot.

NB Energy:.

Public Respondent: There was a piece in The Quoddy Tides, our local paper, and I guess there's an outfit from Texas that's going to put maybe two more turbines in the narrows. This is really catching on, on the American side.

NB Energy:

Facilitator:

End.

Facilitator
Jacques Whitford
NB Energy

St. George CD1

(Introductions)

Public Respondent: Obviously, you are in the early stages of the evolution of this. I am just wondering if there is some other area in the world that is at the same station in the evolution, or are there areas that are advanced? Where are we in terms of the evolution of this technology in the Maritimes?

Facilitator:

NB Energy:

Facilitator:

Public Respondent: What challenges have the Scottish people encountered, environmental, socioeconomic, whatever and what have been their responses?

Jacques Whitford:

Public Respondent: So that website would be the place to go to see —

Jacques Whitford:

NB Energy:

Public Respondent: What would the cost of energy from these units be compared to i.e., coal, nuclear, or oil-fired we have now? Is it going to cost more per kilowatt or less?

NB Energy:

Public Respondent: Wind energy is still more expensive than any other energy?

NB Energy:

Public Respondent: Has the power authority able to absorb the cyclic nature coming from tidal power? They had a great deal of difficulty with many of the tidal basins that were developed in Europe in — 20, 40 years ago, and there the problem was getting the power being acceptable to the grid because it does come in cycles.

Facilitator:

Public Respondent: Is somebody addressing that or are we just looking for the —

NB Energy:

Public Respondent: I would like to say to start with, I'm basically in favour of renewable energy, but I do have some real concerns about this tidal development. First of all, I think this is a basically good report that Jacques Whitford did. It's one of the few that I have been impressed with. Most of them have seemed to be little more than cheerleading for projects. But this did take a precautionary approach, and I was glad to see that.

Secondly, I think it is important that the local environment here not be sacrificed to make money for the province to export energy. That this is not going to become a giant project forced on the local people by the provincial government in order to make a profit, which is what we are seeing in Saint John now with all these energy projects, essentially being forced on the people with no consultation. In fact, we have the provincial government coming out in favour of some of these projects before the environmental reports are even written. I think it is important that local control of these projects be kept in local hands, that this does not become like Saint John, where we have a bunch of international corporations coming in and forcing these projects on the local people with no say on their part. This is a very important area, as far as fisheries are concerned, as far as whale watching and tourism are concerned. There are many people who make their livings here from those things, and we don't want to sacrifice those for what may become very attractive to the government for making a lot of money. Those are my concerns.

Facilitator:

Public Respondent: I represent the sardine fishery, the weir fishery ------ weirmen's association. I hate reading the final report about something that is going to happen in my neighbourhood. When I look at the proposed locations for tidal power, Grand Manan Channel, Petit Passage, ------ Little Petite and so on and so forth. And then I look at your fisheries review, and basically, you are saying in your final

report, you know nothing about fisheries. It concerns me when I'm talking about a $200 million industry in Charlotte County, here, and you put a final report together without even consulting the fishing industry. It employs 2,500 people in this area, practically year-round. Like I said, it very concerns me when I start reading final reports about what's going to happen here, and you didn't even take into consideration. If you're taking it into consideration, the fisheries, you haven't listed it, when I look at the people you have talked to so far.

Facilitator:

NB Energy:

Public Respondent: It says final. If it's a draft, why doesn't it say draft?

Facilitator:

Public Respondent: The four sites that have been identified in Charlotte County, Head Harbour Passage, Petit Passage, Grand Manan Channel is the most heavily fished areas of Charlotte County in scallop fishing, lobster fishing, whale watching, sea birds, porpoise, seals. That is where all the stuff congregates, is in those areas. Those tidal holes that you want to use for energy is also all the plankton and everything, it all congregates in these specific areas. Everything there, from fisherman to mammals, congregate in the three particular areas here, Petit Passage, Head Harbour Passage, and I don't mean just like between Spruce Island and Head Harbour. It goes off there miles ----- and is fished very heavily. Like in Head Harbour Passage, there's 24 lobster boats there within the fall fishing. There's 40, 50 scallop boats fish everywhere in that area ----- plus all your whale watchers are there to see ------

Facilitator:

Public Respondent: If the government's interested in the community and the people that's there now, and maintaining the lifestyle the people has and whatever lives there, yes, we do want the tidal power there.

Facilitator:

Public Respondent: Well, the coastal community is very dependent on the ocean and what it can do for us as it is now.

Facilitator:

Public Respondent: I just have a few things. I think, as Reid said and Robbie said, there were a lot of concerns for the fisheries, and right now we are getting hit with LNG terminals. It's everything under the sun wants to go into the marine environment, which is displacing our local fisheries economy, and I think that's a big concern.

I also have really big ecological concerns here, and the Jacques Whitford report —I agree with whoever said it was one of the best Jacques Whitford reports I'd ever seen, as far as really detailed biological information. I was shocked at the conclusions, which I felt really did not go along with the whole body of the report which said, be careful this is — You're talking about changing the drivers of the system. All the energy that flows through these passages, and the biologists tell us, is what is driving the whole system in the Bay of Fundy. We have no idea what this is going to do to the ecosystem, and I wonder about plankton, and ------ing and nutrients and migrations. I have a huge concern about migrations.

I also really agree with our friend from the Green Party who said: Where is this energy going? Is this energy we are going to sell to the U.S.? Or is this energy that is going to go into our homes? Are we getting rid of Point Lepreau, because we're getting tidal power? Or are we getting tidal power in addition to everything else? This whole idea of an energy hub in New Brunswick, to the detriment of our communities and of our ecosystem, so that we can — So that companies are selling can sell power to the U.S. I find it very frightening.

I am also very concerned that when the government seems quite excited and in favour of these new industrial projects, and the next step is to do a lot of research, and then all of a sudden, the region is going to come back. Our experience has been with some of the industries that our provincial government has really pushed, the information that we get back is very one-sided. And I have major concerns about that. I would like to see some independent studies, maybe collaboration with universities, and studies done by people who have no vested interest, not the government, not the industry, but something independent so we can get a balanced picture of what's going on. We have so little information right now, and it seems like it's much cleaner than a lot of what we have, but is it really going to be to the detriment of our fisheries and our ecosystem and our coastal communities.

Facilitator:

NB Energy:

Public Respondent: What is the threshold for — what's the quota or whatever for renewable power?

NB Energy:

Public Respondent: Then presumably, once you reach that, anything over that can be sold.

NB Energy:

Facilitator:

Public Respondent: You talked about international partnership, and I understood the past couple of years our neighbours have been looking at dusting off their tidal power projects. And it sounds to me like it's getting a little crowded out there. Are you talking with the — The Eastport people, I think, are looking at something. Are you talking with them, and if they are going ahead with something, will the research that you will be doing will look at the impact on the area, if it's in this area?

Public Respondent: I'm not asking it to be stopped; I'm just saying, will you be interacting?

NB Energy:

Public Respondent: I was most interested to hear from the fishing community. The Huntsman is, in a way, kind of a pivotal organization right at this point, in that we have been delivering a project for the Department of Energy, but we also have a vital interest in the environmental health of the Bay, and as some of you folks know, we actually archive the complexity of marine life in Passamaquoddy Bay and the Bay of Fundy. When we were asked to do the project for the Department of Energy, the first thing that we looked were seven factors, a matrix of activities on the Bay itself, more specifically, around Passamaquoddy Bay and Head Harbour Passage. One of those was a fishery, and successive uses would be transportation and navigation, residential factors, other industries like aquaculture and so on. We actually looked at the migration patterns of the herring and migration patterns of larger mammals and that sort of thing to determine what would actually happen if you did put equipment of some sort in the water.

The interesting thing from our point of view, in terms of world development, the world is much further along in designing technologies, but I think New Brunswick has the ability to be much

further along on the biology side on what we actually would want to put in the water and how we'd do that. It is an interesting pivot point because this group that is interviewing us tonight is interested in shaping policy, but the discussions are around, I think, do we actually want this or not. As it is actually applied through the Department of Energy, people have to fund this, and quite frankly, tidal power as it exists today, is not commercially viable. It doesn't make money, so to address your point, Maria, it is not done for any kind of profit or selling power. It is sustainability for the future, so if we can develop technologies that work well with the environment,— that is the real challenge — then we are actually creating a sustainable long-term future of energy for ourselves, not for anybody else, because it doesn't really have enough export capacity. The whole Bay might contain 1,000 megawatts of power that you could actually collect, of which New Brunswick might get 300 megawatts of power, which would take a whole vast array of turbines put together. The actual manufacturing and installation costs are quite high.

So, when you look at these factors as they all knit together, it all stems from the points you bring up around what lives in the water and what type of equipment you might put with that and where would make sense. And I think those are the ongoing discussions that these folks will have with the community back the other way. Our point ------ kind of how do we actually get a handle on what's in the water and consult with you folks to figure that out so we can actually put some feedback in. Some of the material you read through Tony's report was developed through some of things that Huntsman's had been looking at as well. It is an interesting time for New Brunswick in terms of this issue. When you compare it to, for example, 2,000 coal-fired power stations being built in China over the next 15 years, and the type of CO_2 load that is going to put in our ocean, we have to make some choices.

Facilitator:

Public Respondent: ------ talked too long. I forgot the exact words, but when we go to the ------- fish, herring, which I represent and have been doing for 30years. I thought you said you knew something about herring movement. Is that what you said?

Public Respondent: Yes, we have been looking at that. You know, when I look at the paragraphs in here about the spawning grounds and herring movement and so on and so forth, they are absolutely ridiculous. I disagree 100% with that whole thing on the Atlantic herring — 100%. If anybody can tell me any different – Then I mean if you are not going to tell any different than what I read here, then you don't know nothing about herring movement.

Public Respondent: ------ science guys call you ------

Public Respondent: I will.

Public Respondent: Fred can take note of that because Rob — I'll set right along side Rob Stevenson and we'll answer them.

Public Respondent: Sure. Yeah that would be great. I think that's good.

Public Respondent: I mean it's the report's they're using; there's a newer report than what's out there. There's a tagging study that we did in the last five years that's there, that you can look at for background. When you tell me there's no herring here and there, when we look at the biomass of herring that was in the Bay of Fundy last year. I can go on spawning grounds and so on and so forth in particular, but anyway I'm not going to bother. But I want on record as far as ----- fish goes on the Atlantic herring, it's ridiculous. If you want to redo that ------ it's going to be the weirmen's association or the federal government biological station would be more than happy to help you in that.

Facilitator:

Public Respondent: ------ on any other part of it. I don't care what you do on the Bay of Fundy as far as your business goes, but if you're going to gamble on a $200 million fishery and put $200 million in the bank, and if I don't catch no fish next year, be prepared to take it back out in pay. Everybody's gambling on my frigging livelihood and about 90 other frigging weirmen. We're getting tired of it. No more comments from me.

Facilitator:

Jacques Whitford:

Public Respondent: What's been the experience with fisheries in other jurisdictions or in other research projects?

NB Energy:

Public Respondent: If I can speak. There's a pretty dynamic fishery around the Orkney and the ------. I don't know what the data is, but there is.

NB Energy:

Public Respondent: I don't know specifically where they are, but there's a very dynamic fishery up there. I can assure you of that. You can get the data, but I don't know.

Facilitator:

Public Respondent: I think part of what makes me scary is that — I think we haven't seen from the fishing industry perspective very many, if any, examples of good development where lots of people have been truly consulted and participate. Basically, we rely on — All our faith has to be in the government to have a good process, make sure there is good information available and actually consider our concerns. So far — Well, I haven't had much experience at all with the department of energy, but my experience with other departments has been, let's say the aquaculture industry, for instance. The fishing industry has lost out tremendously. And it is a similar situation where a government has really pushed a certain industry, and the process, the community consultation process, the participation process has been extremely poor. And so I would really like to see some thought be given to how are these decisions going to be made and how are the local people and the local industries going to be part of this decision-making. Until we see some kind of a process where we feel we could have some trust and faith in, it is difficult — it will be difficult for us to have the trust that we're going to have good development, and it's going to include fisheries concerns and that sort of thing.

I apologize for being — I am very much in favour of renewable energy, and if this can do away with some of the dirty energy generation that we have, that's great, but we need to have a good process because people here have a lot to lose, potentially.

Facilitator:

Public Respondent: In the introduction, I believe you mentioned inland waterways. I realize it's not a tidal project but ----- of generating stations like Mactaquac and so on. However, certainly it is a similar technology that you'd apply ------ and perhaps its potential is very large, but did you consider that in the report, when you mentioned inland waterways were you talking about ------

NB Energy:

Public Respondent: I'm not talking about increased generation at the plants themselves, I'm talking about ------

NB Energy:

Public Respondent: Collecting the kinetic energy from the ------ like through ------

NB Energy:

Public Respondent: There might be something to look at.

NB Energy:

Public Respondent: I just want to add support to what Maria had said. You kind of made some comments on it that were quite good. But back to what John mentioned, you mentioned with the dynamic fishery in Scotland. I think New Brunswick has the ability to be a bit ahead of the curve by looking at environment biology at the head end. The EMAC testing facility in Scotland was sort of technology and device-driven, and they put their device in the water, and it turns out they didn't do enough consultation and that device — the test device is actually in navigable waters, so the shipping people are upset. Different constituency. But you end up with these problems if you don't consult. I am in total agreement. I think we're on a good path if that's how it's going to go.

Public Respondent: Yes, but I think you can follow up in both Orkney and Chapman because they had conflict with the oil and gas industry, and they just sat down and said, right, you want here what we want here. This is what you can do and it was quite a detailed — This was 20 — I'm getting old now, but 20, 30 years ago. There is good documentation there and the fishermen were quite firm.

Facilitator:

Public Respondent: Can I go back to another question earlier? The renewable portfolio standard, you said, is a percentage of the electricity consumed in New Brunswick? Or produced in New Brunswick?

NB Energy:

Facilitator:

Public Respondent: I would like to talk about consultation a little bit. I think that has been a big problem in this province. What we usually get for consultation are not meetings like this, where people can actually speak and be heard by everybody who is present, but we get what we have had in Saint John continuously, whether it is over the pipeline, whether it is over the refinery, whether it is over anything. What we get are open houses, where you go and there are people at little booths around the room and you go and talk to them one on one and then when you go back later, nobody knows exactly what anybody else said. Nobody can really prove what those

representatives told you. It is not consultation. What we have is really an information session, essentially. The proponent is telling you how they are going to do it, and if you don't like it, that's just too bad. That's what we have had as consultation in this province. I am glad to see meetings like this. These are real meetings, but time and time again, we do not get real meetings about anything in this province.

Facilitator:

Public Respondent: I think this is a very good process, but I hope it is not a feel-good thing, because that is what I find happens quite often, particularly working with the government. As you go out and you do this lovely process, and it's great, but it, to me, is a feel-good process, and you go and you do what you want, where you want and when you want, and you do not really — You might consult, but you do not carry the information through with the project, and I would hope that this impacts on so many people in this area, that you will really listen to what people are saying and put it into your policy.

Facilitator:

Public Respondent: I wasn't going to say anymore, but the Fundy weirmen's association has been around for 30years and has had a paid manager sitting in that office for the last 20 years, so if anybody wants to know anything about herring, surely to God, you can contact that office. The fellow sits there for 40 hours a week. Between Connors and the Fundy weirmen's association, we'll gladly tell you anything that we know about the herring.

Facilitator:

Public Respondent: Maria is here representing the lobster and scallop fishermen, which I do too, and I am confident in her that she can do — And so, the Fundy weirmen's association is not going to get involved in lobsters and scallops and so on and so forth. We represent the herring industry and the weirs, and that's preferred where we would like to keep our conversation and that is what we know about. I am sure — I know she knows about what the rest of it is with ------ And I got confidence in her abilities. There is no sense in us wasting a day sitting there going through this, this and this. We'll gladly meet with you any time. Like I said, we're there, we're available. Bob's sitting right here, Bob Cochrane, he's the manager of the weirmen's association, and he'll set up a meeting with whoever, how ever many of us you want to meet with. We can do it in our office or ------ will do it.

Facilitator:

Public Respondent: ------ has got 100 years' experience in it, so between them and us, I'm sure we can give you a little bit of anecdotal information and I'm sure Bob ------ will take part in —

Public Respondent: I think we can certainly pull something together here. I would like to see, if we had some kind of workshop, more information. For instance, find out what's really going on in Scotland. What are they finding for environmental impacts, fisheries interactions, all that stuff, and maybe come with some ideas on process, and we can come with some ideas on process, but maybe take it to another level because we have read the report. I know there is a lot of interest in more technical, even engineering information. I know some of the fishermen have asked me about that.

Facilitator:

Public Respondent: I would not wait too long. I think you want to get the process down pretty soon, and I think this Scotland thing, someone should look into that immediately.

NB Energy:

Public Respondent: I'm pretty sure in Scotland, the fishermen are organized to some extent, so you can call some of the — or email the fishermen's associations there and ------

NB Energy:

Public Respondent: I just want to add the policy that Natural Resources ------ Crown lands and leasing property for use of these turbines. The reason we're asking you to ------ where your fishing is, if it's lobster, scallops, whatever is because we want to ------ lessons ------ current activities from these new technologies. You can only do that if it's identified. So, ------ energy would be in developing their policies for the business of ----- where will these units go. If one area is ideal for it but conflicts with the existing activities, there's a problem with how we would allocate that land.

Public Respondent: I would say probably that Susan Farquharson's group, they've done a lot of work on mapping fishing areas, and it might be worth having a meeting with the planning committee.

Public Respondent: We are working closely with Susan and Fisheries and Oceans and so on and all the different organizations that are involved. The challenge is in getting the specific information in a timely fashion that we need, but Susan's group is actually only looking at the

islands and not the rest of the New Brunswick lands. ----- Her group is limited in what they're ------

Public Respondent: 5,500 km of the Bay of Fundy. I think you could call that a ------

Public Respondent: They're basically going from Maine up through Grand Manan, and then they're coming off by ------

Public Respondent: Saint John. Saint John Harbour boundaries to the mid-bay line.

Jacques Whitford:

NB Energy:

Jacques Whitford:

Facilitator:

Facilitator:

Public Respondent: I just have a quick question. I didn't get to look at much of the report there ------. Now, I see the device you had on the screen there with regards to generating power. Now, what kind of vehicle is that? What kind of a footprint is this going to make? What are we going to see offshore?

NB Energy:

Public Respondent: With regards to comments about the discussion, and this is a good discussion, good basis information. Also, with regards to the government making their decisions, and they're going to do what they're going to do. This is a two-way conversation, this is a two-way street. If you want to give the government your information, then you have to be susceptible to taking information. Some people, I see them around these communities, and this community, it's something I don't know, don't know anything about it, and I don't want to know anything about it, it's just bad. I'm going to fight it. I don't know anything, but I'm still going to fight it. In order for you to think that you're going to get your opinions heard, it's a good idea, I would think personally, to take in the information, not only take it in, but give it out too. Give and take on both sides.

Facilitator:

Public Respondent: Just to fight to fight, without knowing, you just can't get anything done.

Public Respondent: A couple of things: I think the current process that is happening around wind power in the province is bringing up a number of issues that can — Suppose that we do find an environmentally sound way of introducing some sort of hydro-generation into the Bay. There should definitely be opportunities for community involvement in the economic benefits from those projects, rather than what we are seeing in the case of wind, in many cases, it is a large foreign company that is coming in and putting in a wind ------. So that's one side of it.

On the other — even in the case where you could say: Okay this is a big project, the community can only be involved to a certain extent on the economic side of things. We've dealt with trying to get some sort of formal community funds. Okay, there's a new company that's coming in and doing this development. How are they going to share the economic benefits with the community? Without some sort of formal government policy that says, this is what's required, they will do as little as they have to win you over.

It was already mentioned earlier, but the idea of many of the environmental impact assessment community consultations, really do feel like a show and tell. This is what we're going to do; we're just checking off a box that says that we talked to the community about it. ----- operating on that and saying there really should be something where people are really given an opportunity to voice their opinions on it.

Facilitator:

Public Respondent: I can relate to exactly what you said about being just simply a check mark in the public consultation box. My husband and I and quite a few other people in Saint John are survivor interveners on the pipeline project there. We had our say. We participated hugely in public consultations. We went to their meetings, their information sessions. We stood up at mics. We submitted hundreds and hundreds of pages of evidence and information, asking for information requests, cross examined, gave up almost two weeks of our lives, went through the hearings. It was just a huge, huge undertaking. That's why we look like this. Anyway, it counted for virtually nothing. And it is because, as we are learning —

We have a little study group in Saint John in environmental law. A friend and I had the privilege of auditing a course in environmental law in Fredericton, so anybody who is interested, it was free. We were not allowed to say anything, but at least we learned a lot. We

are sharing it now in a study group up there. One of the biggest things we learned is that ministers and other responsible authorities have huge discretion. And it has been my observation that they exercise their discretion so often in favour of the corporate proponents of these projects, and that the citizens and the environment count for practically — Well, so very little.

I would like to encourage Heather and her colleagues who work in government departments to encourage their ministers to exercise their discretion in an environmentally sensitive, and in a way that is sensitive to the people that were here first, that live here, the host communities, however you want to phrase it, because it is just sadly lacking and it needs to change.

Facilitator:

Public Respondent: First of all, I appreciate the chance to speak on behalf of the sardine industry in Charlotte County. I just want to relate to the gentlemen again down there who was talking to the ------ marine resource planning map that Susan has, ------ they are not adequate either. We are working on them on a daily basis. Not on a daily basis, but we are working on them. They ain't the gospel by any means either. They are getting looked at.

Public Respondent: I will be looking at those and ------ as important as I can be in identifying what is used where ------ so that I can minimize any ------

Facilitator:

Public Respondent: Yes, just a few things. ------ This technology is still developing and stuff, but the gentleman over there who just left was asking about a footprint. What is your experience right now in how these turbines are clustered? Obviously, those ones up there are fairly small, so how are they clustered and how do they expect to be clustered?

Jacques Whitford:

Public Respondent: In the design process, they must have some extrapolation of what's economical as far as clustering.

Jacques Whitford:

Public Respondent: Okay, but you haven't been privy to any information that they pass on to you as far as what they expect ------?

Jacques Whitford:

Public Respondent: That was sort of what I was after. What is the feedback on ------ You know, an appropriate cluster so that it does not impact that zone or area to a high degree.

Jacques Whitford:

Public Respondent: I understand that it is not at a stage yet where you're putting in the water, but those assumptions, I think, are what people here would be interested in order to start to get a feeling for what the impact is going to be.

Jacques Whitford:

Public Respondent: And these models ------, are they going to be typical deployment size or —?

Jacques Whitford:

Public Respondent: How far below the low tide level will these be installed?

Jacques Whitford:

NB Energy:

Public Respondent: Along with that, is there any idea of how far off shore? I mean, the sites — They were typical sites in the report, but is there any idea how far off shore they are viable?

NB Energy:

Facilitator:

Public Respondent: What I'm getting at, but ------, is just that in developing these products, they must have some concept of ------ deployed. So I mean, that information, as preliminary as it is, should be shared, so the impact can start to be understood from the stakeholders here. The quicker that is deployed, the better time, the more prepared they're going to be to address the issue and be prepared for these meetings or whatever.

Facilitator:

Public Respondent: Presumably, it would all be connected with a submarine cable, so therefore, really the footprint could be potentially fairly large. If you have a cluster of these, and then the submarine cables would really be the footprint, wouldn't it?

Jacques Whitford:

Facilitator:

Public Respondent: I believe I saw on the screen, the research sites were somewhere in the order of 25 hectares. How was that arrived at, or what is the significance of the 25 hectares?

NB Energy:

Jacques Whitford:

Public Respondent: Just a point on the process and things like that. What I have heard here tonight is, in speaking about the Saint John pipeline, too, is that in the process, I think a lot of people have pointed out is that the stakeholders should be involved from the bottom to the top in the decision process. Whether that gets overridden at some point, that's anybody guess. But having the stakeholders in the beginning of the process and at the final end of the process ensures that the interests are heard. There should be some sort of flow through the process in making sure that those stakeholders are at the ------.

Facilitator:

Public Respondent: Design the process so that the stakeholders have a representative at the time of the decision-making process.

Facilitator:

Public Respondent: Just that collective intelligence is better than individual, right?

Facilitator:

Public Respondent: I will just make one brief comment. I will try not to take too much time. I think it is important that anybody who is making any decisions on this should spend some time out on the Bay in a boat, where you get a whole different perspective, especially at Head Harbour Passage from a boat than you do from shore. I can remember how I discovered the place in the first place was that I foolishly took a 16-foot outboard open boat from Beaver Harbour, ended up at Head Harbour light, went on down Head Harbour Passage to Eastport. By the time I went through there, I was amazed. I'd seen dolphins and porpoises and eagles. I had never seen an area like that. By the time I got back, I was so taken with the area that I bought a summer cabin on Deer Island. I think you have to be in there to appreciate what we have around here and

what cannot be destroyed. I think anybody who is going to make any decisions should be required to be out on the Bay.

Facilitator:

Public Respondent: I was just wondering what your timeframe is on this? Whether you are going to do anything or whether you are not. Whether you are going to put experimental things in the water or whether you are you not. Is there a timeframe there?

NB Energy:

Facilitator:

NB Energy:

Facilitator:

End.

Facilitator
Jacques Whitford
NB Energy

(Introductions)

Deer Island CD1

Public Respondent: ------, first of all, you see this, and is this the size you're talking? Is this just a model of something smaller, that you want something bigger to do it? I'll start with a questions there.

NB Energy:

Public Respondent: What do you call extremely large? I guess that's the question Like, five metres, 50 metres, 100 metres or more?

NB Energy:

Public Respondent: Obviously, these would not be like one here, one five miles away, because you're talking 25-hectare sites, which is quite a large area, to do a farm kind of, right? You're talking like — I think a wind farm, like put all the windmills together, and they run one cable to it, right? You're talking the same idea here, with a lot of different turbines of some kind, and then running cables, with one cable a shore ------

NB Energy:

Public Respondent: So a real site would probably be bigger than 25 hectares.

NB Energy:

Public Respondent: And the 1,000-metre buffer is 1,000 metres from what? I didn't understand; you said 1,000-metre buffer.

NB Energy:

Public Respondent: Leases of what? From other windmill farms, you mean or other ------

NB Energy:

Public Respondent: Or weirs or something like this?

DNR:

Public Respondent: Well, I got a question with that, then. Is a weir site leased? We have a license. It's not where you lease. Is that ------ the same thing or not?

DNR:

Public Respondent: Our ------ weirs site is a federal, it's not provincial, but you know yourself, right?

DNR:

Public Respondent: The licence is federal, right? And there's nothing provincial. We don't pay a provincial tax or anything.

DNR:

Public Respondent: Just the province? Not the federal government?

DNR:

NB Energy:

Facilitator:

Public Respondent: Another question is here is lobster fisherman. Lobster fishery is one of the main industries on Deer Island. How far should it be from lobster? ------ We just went through this lately with Russell and these guys. Russell, how ------. But anyway, this area, there's nowhere in this area that's not lobster fished, is there? I'm sure you're aware of that or scallop drug or something, you know what I mean?

DNR:

Public Respondent: Well, we're fishing everywhere.

DNR:

Public Respondent: ------

DNR:

Public Respondent: Well, the federal government in St. George has a map of all the weirs. I've seen it myself.

DNR:

Public Respondent: Well, they usually, but it's pretty ------ GPS today. We ------ GPS coordinates in for our weirs the last five years.

Facilitator:

Public Respondent: And aquaculture.

Facilitator:

DNR:

Public Respondent: And wherever you put these, are you including the land ashore as ------

DNR:

Public Respondent: Is there any Crown land on Deer Island? ------

DNR:

Facilitator:

DNR:

Public Respondent: I'll just make one comment that I think. It shouldn't be taken off just the provincial government, it should be federal leases too. It should be included in that.

DNR:

Public Respondent: Well, I meant the fishing fear, whatever ------ federal leases. If a weir is a federal lease, it should be included as well as a provincial lease. That'd be my first comment on any of that. ------

Facilitator:

Public Respondent: I have three questions. Where does New Brunswick Power stand in regards to the Department of Energy and your research? Are you working in conjunction with them?

DNR:

NB Energy:

Facilitator:

DNR:
NB Energy:

Public Respondent: My last question is: If you would put a tidal power station off the coast of Deer Island, would the community be serviced first, as opposed to just sending it to the mainland? In other words, would the island get the benefit because you're taking part of their resource, quote, unquote. Would they be ------

NB Energy:

Public Respondent: Well, it could give it competition. I guess that's where I was alluding to, any benefit to the island and ------ close to the island ------ New Brunswick Power isn't onboard, would a third, a second or an alternative energy company be formed to use these types of energies? Is that something that you've mandated to your policy?

NB Energy:

Facilitator:

Public Respondent: Which locations have you identified to be the most feasible within the Bay of Fundy?

NB Energy:

Public Respondent: Has there been any changes from what was posted on your website? For instance, I think Letete Passage was one of the areas not to be considered because of — I believe it said something about diving. And then there was another, Head Harbour, that looked like a likely spot or had a "yes" under it as a possibility. Has that changed any since?

NB Energy:

Public Respondent: I have one other question. For many of these large units, has there been any studies on the sound that they produce underwater, such as ultrasound or harmonics or anything that would have an effect upon the migration of the fish within the area? Is there a group studying ------.

NB Energy:

Jacques Whitford:

Public Respondent: ------ places is fish and lobster traps. I fish lobster traps ------ and Steven, Allison, Corey, Brendon, all fish traps ------ I guess, and did anyway, too tired now. It amazes me the places there's more tide than you think there is. Into these islands here, around Deer Island, there's no schools of ------. The same as ------. I'm not trying to pick any ------. It's rock bottom, and to me, you can tell where

shoal is before you come to it, because you see the tide well up over top of the shoal, and down over it. Every one of them shoals is where we fish traps. Everyone of them, because that's your hard bottom, that's your rock. There's no two ways about it. That's what we're looking for. You watch traps, and there's traps everywhere, but when you hit the edge of that shoal we start up on, over the top of them, down the other side.

It's not like Nova Scotia. Nova Scotia or outside Grand Manan or up the shore here, they fish 125 traps in a straight line, 100 traps they ------, they go off 100 traps back the other way ------. But here, anyone that fishes ------ they got five to seven traps here, and three here and two there. And everybody's got traps. They're all covered in, but there's no place you can run traps because the bottom is so rough. Like, you go 30 fathom down to 50 fathom, up 10 fathom in ------ in school in places around here, right?

Jacques Whitford:

Public Respondent: And the other thing I just see around here is that it's all the same ------ traps again. If you haul traps somewhere on the flood tide, you don't go very far away to haul the ebb tide because you've got an eddy. Back ------ if you got that, you're not going to get tide, you're not going to make current, back ------ all the time, those places because it's not a steady current. If you got flood tide one way and one the next, you know what I mean?

Jacques Whitford:

Public Respondent: I mean, you can see the high current here, but it's not a steady current. It's, like you say, offshore or somewhere, where you got a —I'm saying where you got to ------ the bottom. I'm not ------, but I'm saying around here, that's what you're ------ As you're going to find, ------ site specific. You're going ------ here.

Jacques Whitford:

Facilitator:

Public Respondent: Is, primarily, this going to be big business that will operate these? I'm guessing they're large enough that like — a community really couldn't be involved financially, could they?

NB Energy:

Public Respondent: I guess my fear of it is — and I go on record, I like the idea of being able to lessen the carbon footprint, and being able to get away from Middle Eastern oil. But my fear is right now, I think oil

today is at $112, $113. What, if in five years, if it's $200 and this works, I could see big business saying: Well, if there's maybe eight or ten sites in the Bay of Fundy, why don't we put another 5000 in, and we'll provide the east coast with hydro. I mean, if it's commercially feasible, where's the — If oil hits $200 a barrel, who's to say it can't, and it could easily do that.

NB Energy:

Public Respondent: That's what I'm thinking, it's going to work too well. I mean that's a possibility. If it does, they may say, well, gee, whack a bunch more in.

Facilitator:

NB Energy:

Public Respondent: I just don't us to be into being exploited so that the hydro can all be shipped to Boston and New York City, so they got lights and we're back to a ------.

Facilitator:

Public Respondent: There's no way to know right now because we don't know what oil's going to do in 5 or 10 years.

Public Respondent: ------

Facilitator:

Public Respondent: Yes, I'd like to know what the maximum output would be in one of these prototypes that they have already. How many watt?

NB Energy:

Public Respondent: What they have that they've tested?

NB Energy:

Public Respondent: Yeah, I just wondered how many it would take, for instance, to supply the island.

NB Energy:

Public Respondent: When they say 1,000 houses, I don't know if that's lights or electric heat. ------

NB Energy:

Public Respondent: Okay, because it's mostly electric.

NB Energy:

Public Respondent: Okay, thank you.

Facilitator:

Public Respondent: Is New Brunswick a net exporter of power? I think we are, aren't we? Mostly or partly? What percentage of our power, of the average day produced in New Brunswick, is used in New Brunswick?

NB Energy:

Facilitator:

Public Respondent: It's a seasonal thing, in the wintertime or summertime, either one. I mean, those are two peak times, winter and summer, right?

Facilitator:

NB Energy:

Public Respondent: What is the peak time? When everything is going in New Brunswick — Point Lepreau when it ever works, is up working, and all the other plants around New Brunswick, you know, Belledune, ------ that big one there, and Saint John, and those plants, Mactaquac and all the places —

Facilitator:

NB Energy:

Public Respondent: And even that case, we're putting a quarter of our power then — a third ------ of our power is being exported right now.

Facilitator:

NB Energy:

Public Respondent: One question. How much depth do you need, Heather, for these? ------

NB Energy:

Jacques Whitford:

Public Respondent: So there's your site specific?

NB Energy:
Jacques Whitford:

Public Respondent: I, like Glen, maybe think that this might work a little too well. Where you always have the tide, and you don't always have wind.

Jacques Whitford:

Public Respondent: Now, the cost ratio, you haven't done that against wind power or —

NB Energy:

Public Respondent: And it's certainly clean.

NB Energy:

Public Respondent: You know, if I thought 40 years ago, that Mactaquac, when they put that there, was clean power, and then it destroyed the salmon run on the St. John River; it destroyed the gaspereau run on the St. John River. So it's not been as green a project as it looked at the when I was a kid, when we was told how green it was going to be to produce power for New Brunswick, you know what I mean?

NB Energy:

Public Respondent: I mean, if you look at the west coast, and right now, they closed both salmon ------ down in Washington, in Oregon state and California state, due to the — They say the biggest problem in the west coast is the dams and the krill ------, enough krill — the young salmon, as they call them, going through the turbines, kills it all, right? You know what I mean. And you're talking about ------

Public Respondent: Is this a turbine or propeller? I don't understand the difference. I mean, I understand the difference on an engine, you know. Is that what you call a turbine there, a propeller?

NB Energy:

Public Respondent: One in Annapolis Royal, what is that?

NB Energy:

Public Respondent: What ------

NB Energy:

Facilitator:

DNR:

Public Respondent: Well, this is just ------ We just come back from Bolivia last week, a third-world country; they call it a two-thirds world country, I guess. When you see our energy use in this area, to what we see in that place, and places we was and things we seen, how they develop their economy, it's just amazing to me how wasteful we are, ------ just got me a shower. I never stayed in a hotel in Bolivia or anywhere we stayed, from the poorest kind of a place to a luxury place, that you seen a hot water tank. There's a rig that fits on top into of your shower nozzle, and it's about this big around and that long, and there's two wires go to it. And when you turn your shower on, it heats the water. You don't ------ because the --- I asked, I said why don't they have water tanks? We just don't want to produce endless power. We just cannot produce it. We can't do it, so we found other ways to do it.

And I think that's one of our problems in North America, is we are not finding good ways to do things. That's our problem. To mean, it's not more power we need, it's more conservation we need, not more power to send to Boston or New York. And I think we make ourself feel good.

Public Respondent: You said it, Dale, in a third world country. Would you like to live there?

Public Respondent: I wouldn't. ------

Public Respondent: I wouldn't either.

Public Respondent: We re all going to live there pretty quick.

Public Respondent: ------ be a priority ------

Public Respondent: ------

Public Respondent: We're all going to be ------

Public Respondent: When Western Europe and North America are using four-fifths of the goods produced in the world, it'd take five worlds, in other words, to keep us all going as we are, and we are just not going to keep on going. Eventually, if we don't cut back for oil ------ or somewhere. That's my opinion, and I think everybody can agree on that. We really got to cut back and —

Public Respondent: You're right, Dale, but none of us want to live their standards.

Public Respondent: No, we don't.

Public Respondent: You know what I mean?

Public Respondent: No, but I'm saying, Steven, that there's ways of instead of going back there, that we need to start going to ease her down, so that we can ------ back there. Because that's my fear of my kids ------ will be back there if we don't. That's my fear on it. I don't want to either. That's what I'm saying though.

Facilitator:

Public Respondent: Where do you think your — Do you know where you're going to have a test area yet? I have a general idea. Did you say Head Harbour?

NB Energy:

Public Respondent: No, just for your test, for right now. You're going to do a test. Is it in Head Harbour that you're going to set this up, do you think?

NB Energy:

Public Respondent: The only thing I was thinking was, if you're trying to get close to your grid, you're up to one end of the island, your grid is down in the middle of the island, if it's the power cable that you're trying to get to. And if you go down that way, I don't know where you're going to put anything down there.

NB Energy:

Public Respondent: That's all fished hard and there's lobsters, scallops, herring.

NB Energy:

Public Respondent: But I'm just thinking if you've got a 1,000-metre perimeter that you're going to put around it, to Head Harbour, we fish everywheres there.

DNR:

Public Respondent: Because as far as even for testing, if you don't want us to fish there while you're testing, we'll say, 1,000 metres is close to 3,000 feet?

DNR:

Public Respondent: We're talking how many what, two-thirds of a mile? That's deep water there. We don't get any more deep water until Grand Manan. ------ 470 feet of water there, and the deepest water is down off Grand Manan ------ basin. So, as far as trying a project there, you're going to putting a lot of people out of the way.

DNR:

NB Energy:

Public Respondent: As far as testing your bottom, would you drill? Would you have to do acoustics sounding? Would you have to — like they do for natural gas or what, to find the bottom?

DNR:

NB Energy:

Facilitator:

Public Respondent: ------

Public Respondent: Do they have any idea how much current they're got to have, two knot, five knot or —? They say it's supposed to be a steady current.

NB Energy:

Facilitator:

NB Energy:

Facilitator:

Public Respondent: No, I was just wondering. Our American friends that already got a couple of buoys there, I think, and I was wondering if any research, any knowledge could be learned from them, what they're already done?

NB Energy:

Public Respondent: How long have they been at this, and apparently, awhile.

NB Energy:

Public Respondent: Well, if it works there, it'd probably work here.

NB Energy:

Facilitator:

Public Respondent: It just seems to me, Arthur, that this must be a lot more expensive technology than wind power. Because they had ------ underwater —

NB Energy:

Public Respondent: — is much more expensive than working above, on land. I've been up the Gaspe Peninsula last fall. We stopped, walked up ------ noise there was. I heard ------ It ------- very quiet. I was surprised at how quiet they were. There was 25-, 30-mile-an-hour wind up there, the day we wnet up to the top of it, right? I'm really impressed with wind power, but I'm not impressed with this because I'm a fisherman. And the thing is, that I don't know where you'd go that you'd go 2,000 or 3,000 feet and not find something that's being fished here. I just don't know — There'd be an impact, a major impact.

Public Respondent: The American side is not fished like the Canadian side, is it? ----- 60 or 70 here.

Jacques Whitford:

Public Respondent: It's linear, very flat ------.

Facilitator:

NB Energy:

Facilitator:

Public Respondent: Who is doing the research at Eastport now in Maine? Is that a private company or is it government?

NB Energy:

Public Respondent: Now, is this the same company that is doing it down the East River?

NB Energy:

Facilitator:

<u>Deer Island CD2</u>

Facilitator:

Public Respondent: How does this marine resource planning committee fit into this?

NB Energy:

Public Respondent: What's been the consensus of some of the other shore communities that you've visited as far as these projects and ideas?

Facilitator:

DNR:

NB Energy:

Facilitator:

Public Respondent: Has it come up how much power you'd have to generate with these units for them to be feasible to make money doing it?

Facilitator:

NB Energy:

Public Respondent: Is there such a thing as ------ for it?

NB Energy:

Public Respondent: I look at these, the wind ones, right? They cut sideways.

NB Energy:

Public Respondent: hey cut in and out sideways. They angle where a 25- or 30-mile-an-hour wind, right?

NB Energy:

Public Respondent: Yeah, so ------, you can have too much tide.

Facilitator:

NB Energy:

Facilitator:

DNR:

Public Respondent: ------ They've done ------ before. ------ remember ------ 24th, 29, 34 ------. So there's a variance.

Public Respondent: I mean, it's amazing if go out such days, there's a — On a ebb tide, you can go hold a trap almost anywhere anytime. On a full tide, there's days you can't hold traps at all, there's just so much tide going. You know what I mean.

Public Respondent: There's lots of places where you don't see a buoy for a couple of days.

Public Respondent: And it is steady in a way, but it isn't because an example this time of the year ------- in the St. John River, the tides here run completely opposite from what they will the rest of the year. They come up ------ It's not as steady as it looks, in a way. It is, because it's still tide running, but it's different on top than on the bottom, isn't it?

Public Respondent: ------

Public Respondent: What I thought was interesting was ------ the only ones I've actually seen. Theirs are portable. They'll actually move them around, but ------ I don't know how much they intend to do that. I guess ------ commercial based, but —

Public Respondent: I can see, too, if you get more tide, you just put less pitch in your blade, maybe if you know where —

Public Respondent: You'd have to ------

Public Respondent: You ------ pitch.

Public Respondent: Yes, ------ pitch.

Public Respondent: Even the wind can change the speed of the tides here.

Public Respondent: ------ pushing offshore but inshore, but the — You can go outside here four or five miles, Trevor, and you get ------ and here, you get ------

Public Respondent: We know ------ faster boats go with GPS today ------, you know. It just amazes me ------ there was no tide.

Public Respondent: I knew ------ get you places, but it's different than you think, the places — as much tide as other places you'd never dreamed there was that kind of tide.

Public Respondent: The further down the channel you go, the higher the tide runs.

Facilitator:

Public Respondent: But Arthur, every ------, they put a buoy out and do a tidal — They put a tide metre on it ------ at times, you know. I've seen the ------ feet per minute ------ tide ------.

Facilitator:

Public Respondent: ------ realize.

Facilitator:

Public Respondent: And that's on the surface, not on bottom, too.

Facilitator:

Public Respondent: They put tide metres at Point Lepreau. Actually, I put them down for them. Before they build that, and they were down at 100 feet. And so they must have some literature there.

Facilitator:

NB Energy:

Public Respondent: ------, they had a turbine blade ------, didn't they, in the East River?

NB Energy:

Public Respondent: So much for your tide metre.

NB Energy:

Public Respondent: There's a lot of places here, I know ------ dives ------ tying down weirs. The first 20 feet down it will be running one way.

Public Respondent: Exactly. And there's a freshet.

Public Respondent: And down at the bottom, I mean, ------ way down, where ------ runs one way on the top ------ the other way on the bottom ------

Public Respondent: ------ does that.

Public Respondent: Yeah, and ------the spring, ------ in the summertime, ------ the wind, you know.

Facilitator:

Public Respondent: Before you close, did you say you wanted us to mark on this?

Facilitator:

Public Respondent: ------ weirs were?

Facilitator:

Public Respondent: ------ 100 and some weirs ------

Facilitator:
End.

Appendix E

Submitted Positions

(all contact data have been removed)

NEW BRUNSWICK STRATEGIC ENVIRONMENTAL ASSESSMENT ON TIDAL POWER DEVELOPMENT IN THE BAY OF FUNDY

PUBLIC AND STAKEHOLDER INPUT

Thank you for participating in this Bay of Fundy Tidal Power Strategic Environmental Assessment process for New Brunswick. Your feedback is important as it will influence the future direction of tidal energy development in the Bay of Fundy, and in particular, minimize detrimental impacts on our coastal communities.

We welcome your feedback on any concern you may have in this matter, but offer the questions below for your consideration:

1) What is your opinion of tidal power as a source of energy for New Brunswick (pros and cons)? Do we need it, or want it, and why?

2) Are there any areas that you feel should be excluded from tidal power development, either locally or regionally? Or ideally suited to such development?

3) Are there specific conditions you think should be imposed on tidal power development in the Bay of Fundy?

4) What should be the long-term benefits for New Brunswick coastal communities? For the province as a whole?

5) Other?

Please submit your comments to staff at the open house events, or mail to "NB SEA Project, 626 Churchill Row, Fredericton, NB, E3B 1P6". You may also submit them on-line on the BoFEP website at "www.bofep.org".

To put your comments into perspective, it would greatly help us in summarizing the open house results if you would identify your occupation/community status (eg. Fisherman, concerned citizen, etc):

_____

From: bofep@shuttle.dnsprotect.com **Submission #1**
Sent: March-31-08 8:59 PM

Subject: NBSEA eng

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****
*
Occupation_interest: concerned citizen

location_of_interest:

Opinion:

Yes we need it

Regions:

No

Conditions:

Strict regulations regarding sea live etc.

Benefits:

Low cost power

Other:

Tidal power and a Gravitational Storage Unit

The Gravitational Energy Storage Unit (GESU) would consist of a mechanical
unit similar to the workings of a grandfather clock where weights are used to
store the energy to run the clock. The balance wheel would be replaced with a
motor generator, which would run as a motor in one direction, and a generator
in the other.

Consider a huge floating barge or mothballed ship floating in the high tides
of the Bay of Fundy. Large shafts anchored in the seabed run up through the
barges or ships, which are attached, by cables or gears to generators. As the
ship rises and falls power is generated.
Some of the power is fed ashore to a GESU. At high and low tide, when no power

is generated by the barges or ships the on shore unit would supply power.

From: bofep@shuttle.dnsprotect.com **Submission #2**
Sent: April-02-08 9:14 AM

Subject: NBSEA eng

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*
Occupation_interest: Concerned Former Citizen who still owns property there

location_of_interest: Bay of Fundy, Passamaquoddy Bay

Opinion:

If tidal power can be obtained using the new technology that changes wave
motion into power, it would be a great bonus to the area, so long as the
energy were used first by the NB/NS corridor grids. I see it as a "pro" for
the area so long as the energy created stays there and the people of the area
benefit from the building, placement and maintenance of the systems.

Regions:

This depends on the type of tidal power development that is planned. So long
as it is the small units attached to the tidal floor and allowed to move in
the current, it should be an ideal way to turn all of that tidal energy into
electrical energy. In order to be sure that the whales don't get fowled in the
lines, I'd recommend staying away fromt their usual migration/feeding routes.
Ever since I first saw these type of units explained on the Discovery channel,
I have thought that it would be ideal to put a maximum of 2 of them in the
area of the Old Sow Whirlpool to try to harness that tremendous power for the
good of the area.

Conditions:

Yes, the power should be first offered to the NB/NS corridor grids so that
their power bills can be lowered in value before it is even considered to be
sold elsewhere. All of the construction, placement and maintenance should be

done by people of the area instead of bringing in people from the outside to perform these tasks. It concerns me that this area is being called the CDN portion of the Maine Gulf. Therefore, I would recommend full 100% ownership of all companies performing the tasks and placing the units. There is nothing to gain from outside intervention. Let the area learn to take control of these resources. "Teach a man to fish......."

Benefits:

The benefits should be for there to be low cost power available to the communities (using their own power); jobs for the local people in the various phases fo the projects; no negative impact on the environment as a whole. For the province, I could see lower UI claims due to people working on these projects, more income from those workers; less strain on the other power grids; improved relations between locals and government; continuous power without interruptions due to storms.

Other:

It is extremely important that the local people are given a large part to play in this project in order for it to succeed. If you bring in outsiders to build/place/maintain these units, you will undoubtedly suffer vandalism, etc. By allowing the locals the time to be trained how to help with this project and how to go forward with the work involved, you will be miles ahead. These waters (especially the Passamaquoddy Bay area) are thought of as part of our lives, they are OURS, and it is time for the government to realize that although they may presume to own and control them, the waters belong to the people. You will need to listen to each and every voice in all of those meetings and take very careful notes of what is said and by whom. These people have had "it done to them" way too many times to believe any of your fancy PowerPoint presentations and political mumbo-jumbo. Be straight with them,

treat them like equal partners in this venture and you might be successful.
You might also be surprised at the level of expertise sitting in front of you.
Never under estimate the People of the Bay.

Submission #3

To: communications@bofep.org
Sent: April 22, 2008 12:05 PM
Subject: Comments: New Brunswick Strategic Environmental Assessment

Comments: New Brunswick Strategic Environmental Assessment on Tidal Power Development in the Bay of Fundy

Thank you for holding the recent series of public meetings around Southern New Brunswick. This is refreshing as recently government and industry have been holding only open houses as a way of dialoguing with the public on large industrial and energy projects. We encourage public meetings and open discussion forums to continue.

- Detailed underwater studies and video examinations need to be carried out now, before any further planning or activity occurs at potential sites for prototype or experimental tidal projects.

- Tidal power projects must not be located in or interfere with environmentally sensitive areas, fish movements, or existing commercial fishing activities.

- No large-scale tidal power farms should be permitted at any one location

- Non-government environmental and public interest groups must be provided with participant funding and resources to effectively participate in decision making processes for tidal power development in the Bay of Fundy and any specific experimental or commercial tidal power projects.

From: bofep@shuttle.dnsprotect.com **Submission #4**
Sent: April-23-08 2:38 PM

Subject: NBSEA eng

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Occupation_interest: concerned citizen

location_of_interest:

Opinion:

We only need it if we continue to escalate with our energy needs, but
providing more energy will always lead to a further increase in its use. That
is why the first step by government should be to legislate changes in our use
of energy, and to decrease the rate of escalation of that use. Only then does
tidal power become an option for decreasing greenhouse gases.

It is a good alternative to fossil fuels, few could argue with such a benign
source of energy, although we don't know what unforeseen effects it or any
other green energy extraction may ultimately have on an ecosystem.

Regions:

The reality is that a large array of turbines would be needed for economic
reasons, and small coastal areas will at some point, begin to feel the effects
of these initiatives. I would like to think that 1-2 turbines could be placed
here and there, thus diluting the effects. But there are too many examples of
run-away developments (at one point many of us thought that aquaculture would
not be so intensive or industrialized, but more of a mom&pop operation).
Therefore, as a tidal power development is bound to expand to a very large
scale, it should be located offshore in a very expansive location. This may
mean that it would be located in an area where tidal energy might be lower,
but perhaps there will be a benefit in not dealing with the tidal fluctuations

of the Head Harbour area. It also should not be placed in areas of species aggregations, usually coinciding with areas of high biodiversity and fishing effort.

"Test " or "temporary" study sites, because of the substantial investment in infrastructure, have a way of becoming permanent, and of expanding. In any case, a test site in an area that doesn't become the industrial site has little to contribute, as equipment and potential ecological effects would not be tested under the same conditions. As well, if a test site goes in somewhere, it invariably means a commercial development.

The Head Harbour-Passamaquoddy Bay, an area with abundant reference material on its significance, rather than being protected, is once again under pressure to industrialize.

There are many moves towards "industrialization" of the Head Harbour-Passamaquoddy area. The placement of Tidal Power turbines in Head Harbour may not trigger as much opposition from landowners as an LNG development (unfortunately, this is the case with many initiatives that take place underwater), but it represents another pressure on this ecosystem and is directed at the very source of the area's significance, the tidal energy that drives the whole thing. As another industrialized site within the bay, tidal energy turbines in HH will lead towards additional industrialized sites.

How can the government on one hand argue that this area is special and that it should not be the site for LNG tankers to travel through, and on the other hand consider placing test sites for tidal power in the very same area of significance?

We have no data to substantiate that a decrease in tidal energy "extracted" will not have any insidious long-term changes to this energy-driven system, yet this should be considered as a degradation of habitat conditions. What changes could ensue from a change in energy patterns: Changes in aggregation of food resources? Of advection of larvae? What of migratory patterns?

There is strong evidence to suggest that Head Harbour, West Isles, and the Passages area, is clearly and unquestionably significant and is considered to be ecologically unique and noted for high biodiversity (numerous references summarized in Buzeta et al 2003). Statistical analyses provide scientific validation of the experiential knowledge that has long purported the Head Harbour, West Isles, and the Passages as significant. Specifically, the Head Harbour - West Isles area was statistically shown to have higher than average benthic species richness, with these species-rich communities significantly correlated to the habitat characteristics of that area (Buzeta 2008). The Passages have been identified for high biodiversity, and for the presence of upright and large encrusting sponges, including new and previously unrecorded sponge species (Ginn 1997, Ginn et al. 2000). It there is an area where protective measures should be placed in support of biodiversity conservation, it is this one.

The area's significance is based on the benthic topographic complexity and the many islands and ledges that result in the upwellings and tidal streams that, along with other oceanographic conditions (temperature & salinity regimes), lead to aggregations of food resources and higher than average benthic invertebrate diversity, and these in turn attract migratory fish species such as herring, aggregations of whales including the endangered right whale, and migratory sea birds. These same conditions lead to the productive fisheries

(herring, lobster, sea cucumber), and to the increasing tourism. That is to
say, the combination of environmental conditions found in this area that
support these biological communities are not generally found throughout the
BOF, and we should be looking at protection measures, not industrialization.

Conditions:

Benefits:

Energy production should not come at a cost to coastal livelihoods (eg.
fishing, tourism, aquaculture). Again, a "Test " or "temporary study" turbine
site, is just the beginning of a larger development that will either displace
existing activities, or eventually impact them.

This energy produced should also not be sold to continue the escalating use of
energy by other countries.

The problem is that effects may not be immediately evident, & rather will
probably be long-term, longer than a politician's term.

Other:

From: bofep@shuttle.dnsprotect.com **Submission #5**
Sent: April-23-08 4:46 PM

Subject: NBSEA eng

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Occupation_interest: retired lawyer and environmental activist

location_of_interest: Head Harbour Passage

Opinion:

I would only want to see small scale tidal power.

Regions:

Conditions:

Nothing large scale, as this would negatively effect the tides, and the
ability of the upwellings to bring up nutrients and carry them in and out of
the Bay. Slowing down the tides with large scale turbine projects would likely
have a very negative impact on the ecosystem. Please keep it very small and
carry out sufficient studies to determine the impacts on the life of the sea.

Benefits:

Other:

From: bofep@shuttle.dnsprotect.com **Submission #6**
Sent: April-23-08 10:37 PM

Subject: NBSEA eng

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*
Occupation_interest: Welshpool, Campobello Island , (tourism) inn owner.

location_of_interest: Head Harbour Passage

Opinion:

Yes, we need it. It is far preferable to fossil fuels.

Regions:

I would like to see Head Harbour POassage excluded because there are many
whales that frequent the area all summer and we must not drive them away with
disruption in the area. They feed all summer right off the light in the tide
confluences that exist there. It is important to save unique and special
places like this one. There are other locations where there are not the
numbers of large whales that there are here. Our group, FHHL, has spent 1100
hours working at the light last year, so we know the whale's patterns and the
feeding that exists there. There have been as many as 20 at a time in the
spring feeding right off the light.

Conditions:

Environmental restrictions should be strictly enforced. Effect on the whales
must be studied. Disruption of flow through the Passage could disrupt feeding
just outside, where the whales gather.

Benefits:

I am sure there is a great deal of long term benefit, but I sincerely hope it
is not at the expense of the whales in Head Harbour Passage. There are
finbacks, minkes, humpbacks, and the occasional right whale. They all use the
Passage, also many porpoise use it as well.

Other:

Only that great care needs to be taken to preserve the special relationship
betewween Head Harbour Passage and the whales. There is nothing like it
anywhere on the east coast of North America and it must be respected.

From: bofep@shuttle.dnsprotect.com **Submission #7**
Sent: April-24-08 9:33 AM

Subject: NBSEA eng

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Occupation_interest: concerned citizen

location_of_interest:

Opinion:

This has potential as a benifit to the province, BUT at the sacrifice of the
local community. The local stakeholders should be a intrical part of the
devlopment and planning. Ther should be a defined benifit that the community
can buy into; other than a profit for the proponents.

Regions:

Unfornunately all areas of power potential represent those of the greatest
ecolocial significance and therfore the greatest danger of impact. these
factor should be more that a superficial whitewash in the desicion making
process.

Conditions:

If the province is serious about renewable energy the policy for developing
tidal and other power sources should incude a stipulation that every megawatt
of renewable power will directly replace a megawatt of fossil fuel production.

Benefits:

Since we are a electrical power selfsuficient province our goal and payback
for the sacrifice / impacts of this development sould be a direct reduction in
traditional and more controversial production methods.

From: bofep@shuttle.dnsprotect.com **Submission #8**
Sent: April-24-08 7:06 PM

Subject: NBSEA eng

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Occupation_interest: concerned citizen and educator

location_of_interest:

Opinion:

Excellent concept. Sustainable green power with little impact which is
negative. Seems to be a win-win proposition.

Regions:

Head Harbour Passage is perfect. Let's do rational energy planning and keep
the supertankers out!

Conditions:

Consult with fishermen and keep away form herring and lobster sites. Make sure
that noise and effects on ocean front properties is minimal.

Benefits:

Tax monies and rights to power will be beneficial to coastal communities

Other:

I am a concerned citizen and waterfront property owner. Just wondering about
noise and other impacts on fish and whales, including visual from transmission
lines and lights.

From: bofep@shuttle.dnsprotect.com **Submission #9**
Sent: April-24-08 7:09 PM

Subject: NBSEA eng

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Occupation_interest: concerned citizen

location_of_interest:

Opinion:

We need alternate sources of energy that have minimal negative impacts n the
ecosystem and rural economies. I would prefer more resources be put into wind
power and conservation, but tidal power is better than coal or nuclear.

Regions:

Ecologically sensitive areas, eg. spawning grounds near mudflats, whale
traffic areas, important fishing grounds.

Conditions:

should not be allowed if it will harm ecosystems or fisheries

Benefits:

more energy that is produced with a minimal env'al impact

Other:

By the way, the presentation needed more substance - details on what you are
proposing

From: bofep@shuttle.dnsprotect.com **Submission #10**
Sent: April-24-08 7:11 PM

Subject: NBSEA eng

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Occupation_interest:

location_of_interest:

Opinion:

would depend on actual costs and certainly not at the expense of the local
fishery or tourism

Regions:

Cape Enrage should be excluded
– designated most scenic spot in Canada 2005
- international tourists visit all season

Conditions:

would need much more information

Benefits:

honestly - don't see any

Other:

From: bofep@shuttle.dnsprotect.com **Submission #11**
Sent: April-21-08 12:38 AM

Subject: NBSEA eng

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Occupation_interest: House wife.

location_of_interest: Bay of Fundy

Opinion:

Tidal power would be a great thing, if the technologies and equipment needed
to make it work fit the eco systems, to date they do not.

Regions:

How about Old Sow? I don't see the need to start with the bay when you
haven't done anything with places like the reversing falls. Or have the
Irvings vetoed the government on that?

Conditions:

Any tidal power should feed the communities of source, and at a lower price,
extending the first rights to use, clear to the main power grid.

Benefits:

The long term benefits should be that the technology doesn't ruin what is
already working, don't trade fishing here to sell power there.

Other:

EIA are not a fair tool for measuring impact or sustainability. Use a paired
compared matrix, with tradition and grandfathering extended to what is
sustainable now. ie resources, uses, inherited problems or resources.

TIDAL POWER

Submission to NB Strategic Environment Assessment re tidal power in the Bay of Fundy being undertaken jointly by NB Department of Energy and the Bay of Fundy Ecosystem Partnership

Tidal energy is one of the oldest forms of energy used by humans. Tide mills in use on the Spanish, French, and British coasts, date back to 787 A.D. The use of barrages to impound tidal water at high tide in order for its potential energy to be released at low tide, as in the tide mills of old, has undergone considerable technological advance, but because of economic and environmental considerations, it has never really caught on (except in France). The present interest in tidal power, usually referred to as Tidal In-Stream Energy Conversion (TISEC), is in the use of the tide's kinetic energy, in which the horizontal tide current is likened to the wind powering wind mills.

The point of the history is that TISEC is a relatively new approach to the use of tides as a renewable energy resource. For New Brunswick, there are two opportunities in the field of tidal power R&D, recognizing that the Bay of Fundy's legendary tides, bringing in and out 100 cubic kilometers of water twice daily, must be one of the best places in the world to work on how to harness in-stream tidal power.

- The cost-effective production of electricity is, of course the objective of the province's involvement, but an important, and potentially longer-lasting, benefit is the opportunity the province has to take a lead in the development of the TISEC devices. Characteristic of any new industry, the equipment and associated usage are presently at best in the prototype stage. This will not last. Those companies which get it right will have an opportunity to be in on the ground floor to manufacture successful systems for what has all the earmarks of a growth industry.
- Not far from the starting gate, too, is the question of the environment effects of tidal power. None of the devices will produce greenhouse gases, or other waste, and for those devices to be anchored on the sea floor, which seem to be the preferred plan, the footprint will be small. The more important issue is the effect of the devices on the flora and fauna, in particular the latter. Descriptive material about in-stream tidal power is rife with views that environmentally, in-stream tidal power is benign, but conspicuous by their absence are supporting data. There is an opportunity, therefore, for New Brunswick to couple its lead in the development of the new technologies with R&D in environmental effects.

New Brunswick has more than geographical location as an advantage. Located in St. Andrews are the Department of Fisheries and Oceans Biological Station, the Huntsman Marine Science Center, the Atlantic Salmon Federation, and the NB Community College, all with varying interests and involvements in marine matters. And most importantly, both campuses of UNB, Mt. Allison University, and the Université de Moncton, all members of the Huntsman, together represent a

huge combined R&D resource in the biological, engineering, and socio-economic areas which could be brought to bear on tidal power development. Commercialization, however, will need substantial buy in from the private sector. Government's role will be critical. It will need to provide support for the R&D, and assistance to the private sector in ways to encourage firms, probably most being small, to risk investing in innovation to win in the marketplace. It could be a more important contribution to New Brunswick's self-sufficiency goal than simply the production of electricity itself

The creation of a pilot-scale demonstration unit is a logical first step. Public support will be important. One way to promote such support is to tell the story through exhibits in a public museum or aquarium.

Funds for R&D will be critical. Currently, expenditures on all R&D in New Brunswick, by all players, as a percentage of provincial gross domestic product, ranks last among the provinces. This needs to be improved. If it is, then success will occur when preparation meets opportunity.