

Environmental Regulation of Seismic offshore Canada

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Agenda:

I. Why are environmental regulations and their implementation important to you, to the province, and to Canada?

II. What is the current situation?

III. Specific regulation examples and issues from the front line

IV. Proposed solutions

I. Why are environmental regulations and their implementation important to you, to the province, and to Canada?

I will try to provide a framework for general understanding of the importance of energy, and the potential risks we face as a country if Canada and each province do not put a very high importance on maintaining energy security of supply.

Some Statistics may help:

1. Canada is consistently the largest energy user per dollar of Economic Output (Energy/GDP Ratio) as well as per person (Energy/per Capita Ratio) among G7 countries since 1970.¹ Canada's economy is based upon energy intensive industries including Chemicals, Petroleum, Paper and Pulp, manufacturing, and Primary metals. To avoid serious shocks to the economy the Canadian government must ensure that Canadians have the energy supply security we depend upon for the bulk of our economic output. Canada should be expanding and diversifying its supplies, and promoting competitive markets and sound public policies in energy. This is a totally different issue from utilizing more renewable energy or to have government policy incentives and initiatives to become more efficient and cleaner on the demand/consumption side. I agree Canada should look at these issues and new technologies that will change our dependence upon traditional fossil fuels, or make Canada more a more efficient consumer on a per capita basis or per unit of output basis. But this is not enough, we still must ensure adequate supplies of the cleanest fuels we have and that is natural gas and oil.

2. Canada's per capita consumption of:

- A. electricity is - third
- B. coal is - eighth
- C. natural gas - sixth
- D. nuclear power - eleventh
- E. oil production -thirteenth
- F. motor vehicle production - second

Canada is a very industrialized nation with an energy export and manufacturing dependant economy. Canadians maintain a high level of income and standard of living due to abundant and relatively cheap energy.²

How is Canada performing on environmental issues?

Again some statistics may help:

1. Marine Areas under protection – second
2. Area under protection % - fourth
3. Endangered Species Protection – twenty four
4. Environmental Agreement Compliance – thirteenth
5. Species at risk- twenty second
6. Fish Catch 43% decline since 1980, and 73% decline since 1990. Clear evidence of over-fishing, pollution, and habitat destruction.

Canada it appears is a leader in putting areas off limits, but a laggard in implementing current Canadian environmental laws, and international agreements, the substance that can make a much more significant difference.³

Other measures of how we score on the environment relative to OECD countries on a per capita basis:

1. CO2 production - second highest
2. Water use – second
3. Volatile Organic Compounds Emissions per capita and total- second
4. Hazardous Waste- fourth
5. Nuclear waste- first
6. Sulphur dioxide – second
7. Greenhouse gas – third
8. Overall Rank – second to last

Because Canada has an energy intensive economy one would expect some of these measures to be relatively high, but clearly Canada is not clean in terms of a per capita basis or unit of output basis as compared to G7 or OECD countries. Canada just started moving sulphur levels downward in fuels to meet US standards which should be complete in the next year. Canada appears clean only because of a small population over a large land mass allowing for significant dilution and dispersion, certainly not by any higher standards, or real performance on the environment. Canada can do more to make manufacturing more efficient, and to increase anti-pollution measures technologies and enforcement of existing laws without shutting down industries that have no contribution to the problem.⁴

The economy and the government:

1. Fully 91% of Canada's exports of oil, natural gas, uranium, and electricity go to our number one customer the United States.⁵
2. In Canada, oil and gas contributes directly 45% of Canada's trade balance.
3. Newfoundland is leading the country in economic growth (13% p.a.) largely on the back of oil and gas. Oil and Gas contribute (16% provincial GDP) \$280 million directly to the NFLD economy as compared to \$210 million for fishing. Oil and Gas has a higher direct payroll and employs more persons directly (1,780). Oil and Gas account for 7% of provincial GDP in Nova Scotia, and natural gas exports were greater than the value of fish exports.⁶

Energy and refined products are the largest export products for NWT, Alberta, Nova Scotia, and Newfoundland & Labrador, making this industry vitally important to these provinces specifically.

Specific Information to measure offshore environmental performance:

Despite moratoriums on Cod the species is not rebounding, and very unusual skinny and misshapen Cod are becoming the norm.

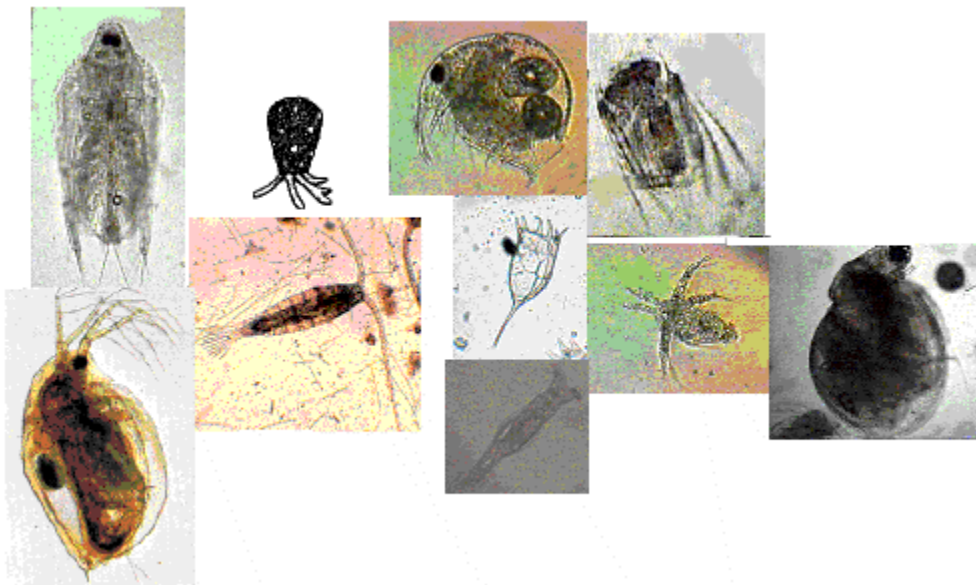


A healthy cod and one that has been starved for three months in the laboratory. The condition of the laboratory subject resembles that of Gulf of St. Lawrence cod caught during the spring fisheries in the mid-1990s



Atlantic Salmon, Redfish, Cod, Herring, Capelin, Dogfish, Haddock, Hake, Pollock, Flounder, Halibut, Skate, Monkfish, Striped Bass, Eels...all show problems and words like low weight at age, age at maturity, low fat content, lower growth rates, landings are down, recruitment is low, abundance down substantially are used to describe their status. Over fishing appears to not only have affected the targeted species but the ecosystem in general.⁷

What impact does the fishing crisis and average smaller size of these species have on the diets of endangered Beluga and Killer whales at the top of the food chain? No one is looking at this.



The Plankton Paradox is a very puzzling situation brought forth that shows a sharp drop in zooplankton in Canada and a sharp increase in phytoplankton. Many species rely upon zooplankton and krill as the foundation for the food chain in the ocean including the large baleen whales Canada is trying to protect, and the prey and juveniles of commercial fish stocks that appear to not be recovering even after moratoriums are in place. The hypothesis offered by DFO is that the presence of fewer zooplanktons is because of an increase in the numbers of predators such as herring feeding on them. The other more scary option is that zooplankton production has decreased for some reason and is supported by the starved condition of cod that would normally be eating all the supposedly plentiful species that eat zooplankton and krill.⁸

DFO clearly has its hands full with many very complex issues, in all fairness, many of which are caused by factors outside of its control/jurisdiction. It appears that everything is linked and an understanding of one factor in isolation is not possible without the daunting task of understanding the interconnected ecosystem web. Understanding through science and then taking steps to make changes while pursuing a course of precautionary moderation in ecotourism and fisheries seems like the direction the Canadian government should take for the benefit of fishermen, Canada, the provinces, and other ocean users such as oil and gas exploration. More importantly Canada needs leadership to incorporate environmental concerns into the very important necessity for energy security. This is perhaps the greatest challenge Canada will face in the next few years. So far the federal government has earned an “F” in understanding let alone managing these issues.

Although there are many excellent papers written on energy demand and supply, such as a presentation provided by Dr. James Buckee President and CEO of Talisman Energy at the 2003 Global Business Forum and the US DOE Energy Information Administration “International Energy Outlook annual reports, which I will not try to recreate here, I think it is important to cover some highlights on the subject to underscore the importance of offshore seismic to Canada.

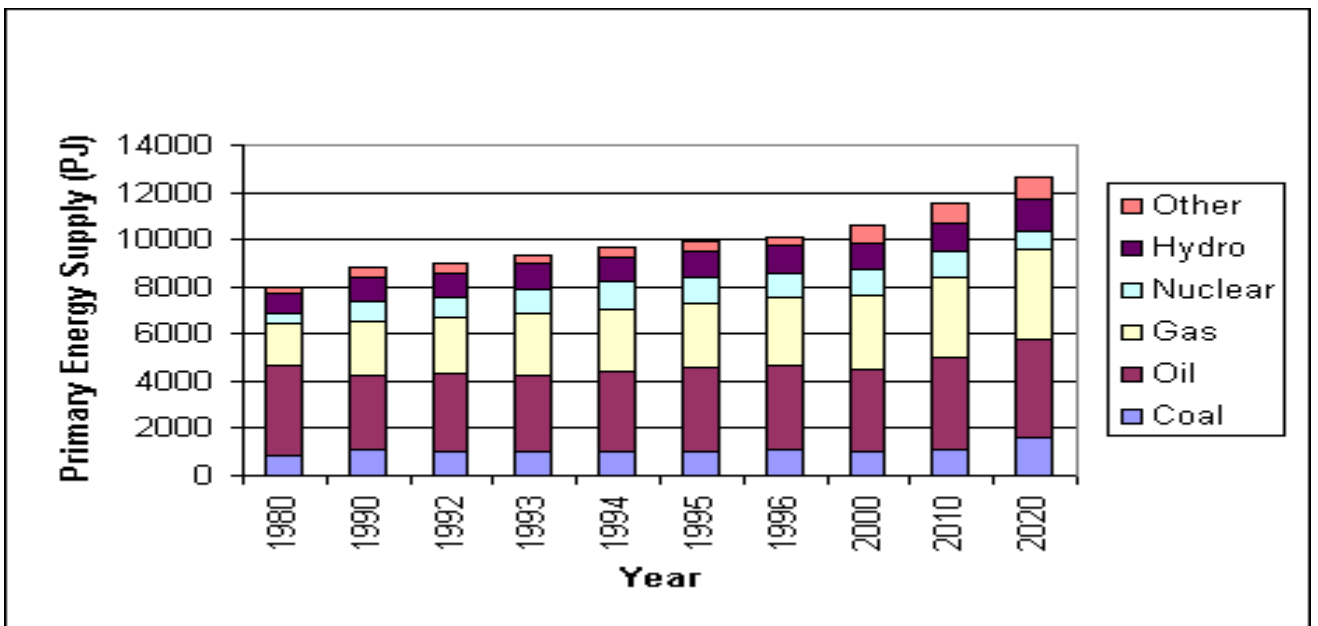
Energy Demand:

1. Energy demand is expected to increase 39% between 2002 and 2025 in the United States⁹
2. **Canadian** Energy Demand is predicted to increase 33% from 1997 to 2025 even with the inclusion of optimistic assumptions about efficiency and technology gains.¹⁰
3. In a 1999 NEB publication “Canadian Energy Supply and Demand to 2025” \$14 and \$22 US per barrel is considered the “sustainable” range....otherwise our economy suffers and a greater portion of income goes to energy, but supply should increase to meet demand and prices should move downward? This assumes that OPEC, gaining each year a larger and larger share of world supply, will be content with oil in this “sustainable” price range.
4. World energy demand is expected to rise by 54% from 2004 to 2024, primarily in fast growing economies like China and India.¹¹
5. Energy demand in developing countries is expected to rise 91 percent over the next twenty years, while rising an average of 33 percent in industrialized nations. Electricity demand is expected to almost double in the next two decades.¹²

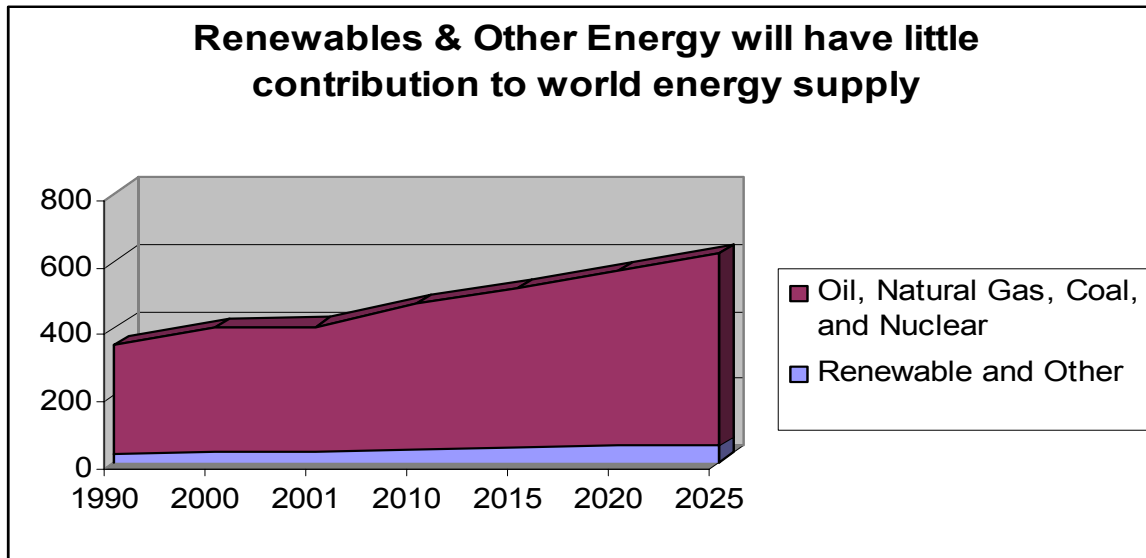
These figures assume the Kyoto Protocol is not ratified, otherwise the issues will most likely be exaggerated with more industrial production going to developing countries where higher emission and lower environmental standards exist, which will result in a net increase in pollution at a tremendous economic cost to industrialized nations.

Energy Supply:

1. Conventional Light Crude has been and will decline at a rate of 4% per year in Canada¹³
2. Canadian Supply and Demand curves for Natural Gas meet in 2025. (Assumes Mackenzie Delta Gas ties in by 2010!).¹⁴
3. The world currently consumes 27 billion barrels of oil per year, as of January 1, 1996 total proven and undiscovered reserves are 853 billion barrels for OPEC, and 769 for non-OPEC or a total of 1,622 billion barrels that if no growth in consumption occurred would last about 60 years.¹⁵
4. At current rates of world consumption growth, non-OPEC production will peak between 2010 and 2018 leaving OPEC in greater control each year thereafter.
5. Looking at severe downward reserve estimates at Sable Island, the expiry of up to 24 parcels in the next two years, and the put on hold Panuke project shows we have real problems starting to emerge in Nova Scotia and it is well past time to take notice and immediate action.



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Source: Extracted from US DOE Energy Information Administration International Energy Outlook 2004 p.165 Units are Quadrillion BTU's

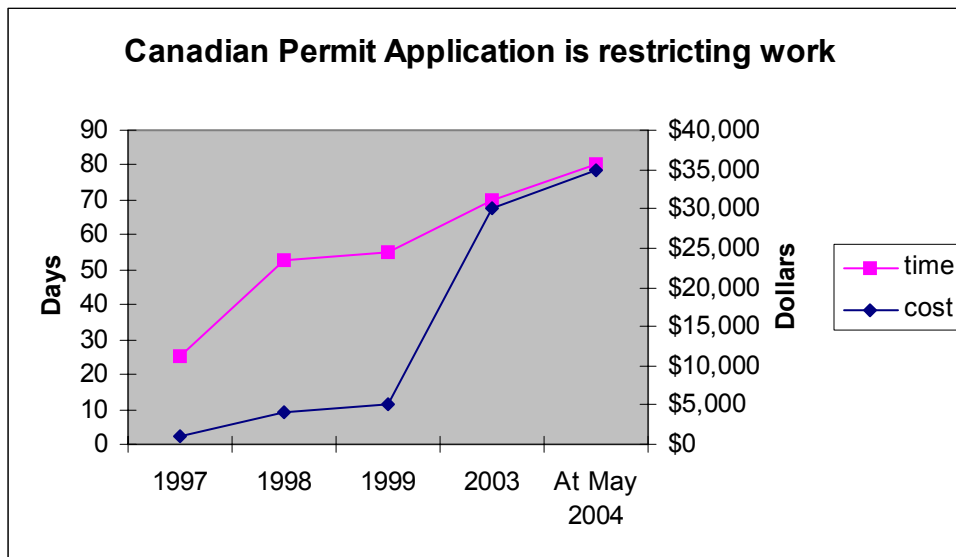
Even with double digit annual growth in solar and wind energy production that will only satisfy less than half of one percent of energy demand in 2020.¹⁷

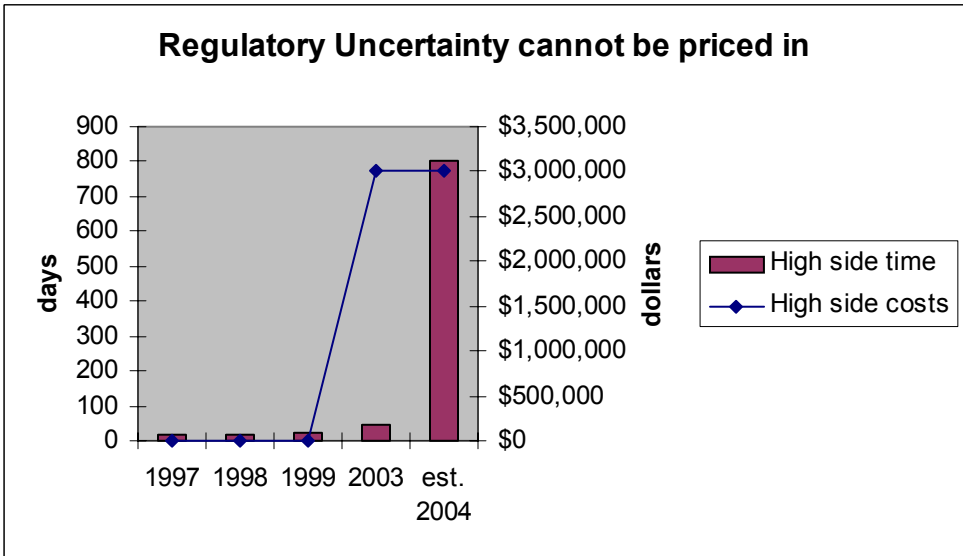
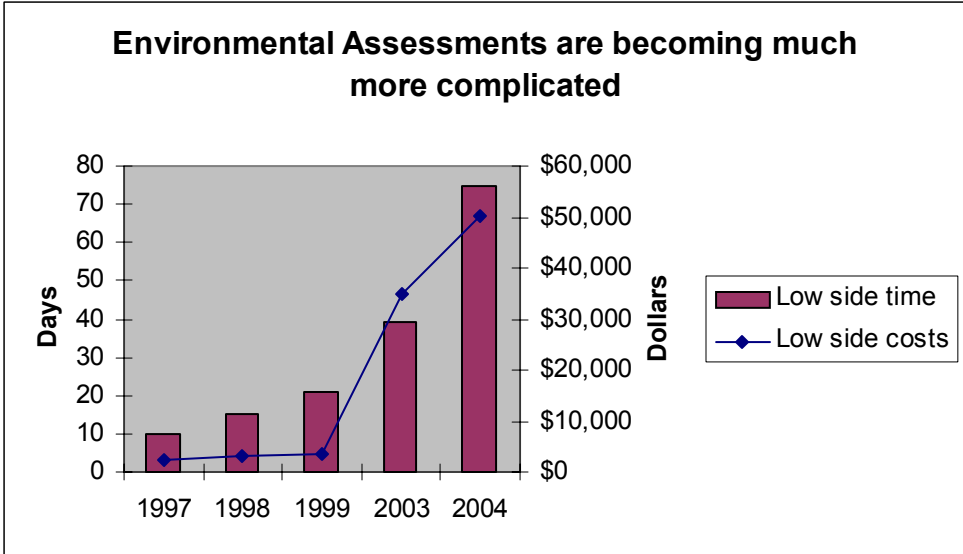
Clearly world demand will increase substantially. Canadian government policy written or unwritten must not abandon conventional energy sources on the hope of other technologies or to force change before there is a proven, tested and reliable alternative. The world is not running out of oil yet, it is just that demand is growing so fast, new discoveries and replacing reserves are getting more expensive/difficult, and the ownership of oil and gas is consolidating outside of Canada and North America reducing our security and increasing our dependence on the Middle East. At the same time, huge increases in demand for energy in Asia will take a greater share of the export capacity from the Middle East. ENGO's need to realistically decide what energy sources logically and scientifically we should utilize rather than opposing everything and forcing governments and industry into choices that result in outcomes that are undesired by everyone including the ENGO's (Coal & Nuclear). In particular energy exploration logically will have to go into areas where little or no previous exploration has occurred. Because of government barriers and environmental opposition to cleaner oil and natural gas exploration and production, Canada will have to increasingly turn to its huge reserves of Coal (the primary source of mercury now being found in fish), to Nuclear power, and to energy intensive tar sands to meet our energy needs, and these all have more serious pollution impacts than conventional oil and gas. Ontario appears to already be embracing Nuclear as its best option. Coal plants in Ontario are some of the biggest polluters in the region, causing serious effects on both sides of the border. Quebec recently obstructed the construction of the lowest emissions power plant known which would have been based upon natural gas.

II. What is the current situation of environmental regulation of oil and gas exploration and development in the offshore areas of Canada?

Simply, the process is fragmented, redundant, repetitive, confusing, conflicting, uncertain, and costly. For all the rhetoric about streamlining and ensuring a level playing field... from our perspective it is getting worse and at an accelerating pace.

The following three graphs depict the severity of the issue and the rate of change in total costs for seismic applications and permits experienced by GSI. These costs do not include the more frequent and ever more elaborate mitigations, impact studies, and costs added to the post permit side of the equation which is equally large in magnitude. These graphs do not capture the cost of lost exploration or cancelled seismic programs necessary to move projects forward to the drilling stage. These lost opportunity costs are estimated to dwarf the industry costs herein and are/will be borne by Canadians each time they go to the gas pump, use electricity, or turn on their heat.





Depending upon if an application is in one area or another, or if you are one offshore industry or another, the laws, regulations, and guidelines from 24 different agencies are as a rule interpreted differently and very different and uncertain outcomes result.

In general GSI objects to the concept of focusing ever increasing regulation and restrictions upon seismic (at best a 2% issue) when the remaining 98% issues are not addressed with the same level of effort and in some cases little if any effort (i.e. whale watching).

For example, unsustainable fishing management and practices have resulted in the decimation of many commercial fish stocks. Now there is a concern that seismic will stress the remaining “threatened” or “endangered” stocks. So a circumstance arrived at,

not attributed to seismic in any way, results in seismic restrictions. Will the oil industry be compensated for the damage done to fish stocks due to fishing quotas set by the government which is now impacting oil and gas operations? Incredible as it may sound this is a recurring theme with each permit application gauntlet called the Environmental Assessment. The latest issue is Crab which due to huge increases in fishing are now predicted to “crash” and some fishermen working with the Sierra Club say “we don’t want seismic to push them over the edge” in an attempt to stop seismic. This is the flawed logic employed over and over. Crabs do not even have hearing organs, and seismic has nothing to do with their impending crash... it is the activity of these groups with their heads in the sand that will result in the demise of the crab.

Would it not be logical to assume that due to depletion of many commercial fish species that this would in turn reduce prey for many other species including various toothed marine mammals some of which are endangered? Of course it would but is the “precautionary principle” employed by DFO, sadly it is not.

DFO has allowed bottom dragging as a fishing method that clearly “destroys fish habitat” in contravention to Canadian law. This practice destroys habitat where small fish would normally evade being eaten. An ENGO has initiated a lawsuit on this matter that is in progress. No surprise then when fish stocks do not bounce back quickly.

Somewhat outside of DFO’s control the Canadian government unlike the United States stands by while almost every coastal city and town dumps untreated sewage and oily storm water into the ocean. The result is that at the top of the food chain the Gulf of St. Lawrence Beluga is one of the most toxic animals in the ocean, and if washed onshore, has to be removed as toxic waste. Endangered Blue whales tested in the Gulf of St. Lawrence also show higher toxins as compared to other Atlantic populations and exhibit a lower reproductive rate to other populations. Even in Canadian environment minister David Anderson’s hometown of Victoria some of the worst ocean polluting occurs with raw and untreated sewage and oily runoff being dumped into the ocean every day not unlike a third world country. The double standard maintained by Mr. Anderson is evidenced by his insistence that oil and gas exploration should not occur in offshore British Columbia. This is a perfect example of a focus on perception over reality and how Canada avoids the substance and results that should occur for the environment. Again, this also shows a total short sighted lack of understanding about energy choices and how Canada will actually become a dirtier place as a result of these policies to prohibit exploration for the cleanest fuels we have oil, and natural gas.

I could go on to discuss the noise emissions, without any employ of the “precautionary principle”, mitigations, environmental assessments, or consultations, when government sees 12,000 ships a year, and a growing fleet of whale watching vessels in the Gulf of St. Lawrence, but I think my point is clear enough with the examples above.

The current proposed listing of about 24 marine species onto the legal list of SARA does not provide even basic information regarding how these marine species came to decline, what their current situation is, even the simplified overview afforded terrestrial or

freshwater species. This is a real concern because of the inconsistent regulation of the industry by DFO which can allow for additional regulations, mitigations, and restrictions, again when seismic did not contribute to the decline, nor is it believed to adversely affect the future status of the species.

IV. Specific examples and issues

Cape Breton Panel Review

Essentially was redundant to the Environmental Assessment already conducted. Mitigations were primarily political and were not based upon science and those that were non-political were essentially within the normal range employed by the industry already. What resulted was a huge cost, delays, and no real benefit for anyone. It did provide an opportunity for many not aware of the issues to learn and become better informed. Unfortunately, the larger energy picture, energy policy issues, and poor environmental performance of our current government were not brought into this process.

2002/2003 Gulf of St. Lawrence seismic program

First Program to experience CEAA review panel referral

Result of misrepresentation of facts, strategy of “risk is too great and we do not know so lets have a study” from biased individuals, eagerly supported by the media seeking sensational headlines

DFO intimidated the NEB into a panel referral as the politically safe choice knowing full well that it would kill the project.

DFO advice to NEB included recommendation that air surveys of the coastline with autopsy teams at the ready when all the whales wash up on the beach. This was a scare tactic to force the NEB to send a seismic program to a CEAA panel review, this killing the program.

DFO advice to the NEB included an example of a report of two dead whales with bleeding ears and was apparently represented to implicate seismic as harmful. Upon further reading of the document it became clear that the whales were exposed to high explosives being used to deepen Trinity Bay where the Hibernia GBS was being built and could not have had any exposure to seismic at all. In one case the speculation outside the scope of an important report was relied upon more than the actual findings of the report. This project referral to a panel duplicated many other studies and Panels such as the one in BC. Also, Quebec initiated an expensive and redundant BAPE panel review of seismic in the Gulf of St. Lawrence. Further, no economic support from our clients and continued pricing pressure, increased downtime, and regulatory uncertainty is leading to ever poorer financial health of the seismic industry.

2003 GSI West Cape Breton 2D program

GSI as part of a small seismic program in west Cape Breton was required by DFO to participate in a Crab environmental effects study and an acoustic study to measure sound

propagation of the air source array in shallow waters of the Gulf. The program was only supposed to take 6 days in Dec 2003. DFO made GSI wait at a cost of USD \$50,000 per day for 8 days while they bottom dragged for crabs catching only a few in the first 6-7 days. The fishing method, which could cause significant damage to the Crab, was an unusual and interesting choice, which we believe did much more harm to the marine environment than the seismic ever could. GSI objected strongly to the CNSOPB indicating that this was a real financial hardship (especially on the heels of the Gulf panel referral), and that we had three observations:

- A. Apparently there are no crabs in this area so what is the concern (not to mention it duplicated the NFLD 2002 study).
- B. Let GSI begin the work, while DFO catches as many crab as possible to put them on the last survey lines of the program.
- C. Alternatively or in addition to GSI would be willing to work with this research on a later program when DFO was better prepared.

Within 24 hours of this message over 400 crabs were caught and the study proceeded. GSI believes that significant abuse occurred in an attempt to drive up GSI costs and put us out of business. Then a DFO scientist leaked to one of the fishermen that opposed the survey strongly in the media that the test group was significantly different than the control group. This fisherman then sought to blow this up in the media and copied GSI with an email. GSI inquired to DFO as to what the significant difference was and was notified by DFO that silt was present in the gills of the test group, and it was believed that this may have been caused by the capture method or dragging of the cages along a silty bottom upon retrieval, and the story died. Then DFO would not provide us with the hypothesis, objectives, and methodology for the studies when we requested them. GSI has had to file an access to information request, DFO has given itself a three month extension to the normal response period and we have still not seen anything. The end result was GSI entered into a blank check scenario that resulted in a doubling of the cost of the program even though GSI adhered to every point of the Cape Breton Panel guidelines imposed by the CNSOPB. No damage was done to the environment other than the bottom dragging and needless testing of Crab that have no hearing organs. Lots of money was wasted and as usual with no benefit to the environment.

Regulatory Uncertainty. (Taken from a GSI letter responding to a letter from Natural Resources Canada Honorable John Efford, Minister)

With all due respect I have to strongly disagree that Canada's regulatory process is one that anyone should have confidence in. The National Energy Boards decision regarding GSI's 2003 Gulf of St. Lawrence program was wrong, it perpetuates the malign and bias of the seismic industry, by Fisheries and Oceans Canada and those with an environmental agenda who oppose the development or use of hydrocarbons.

How could any one being regulated have confidence in a decision and process;

- That cost my company millions of dollars in non-revenue time, due to the decision to send a simple seismic program to a panel review. Seismic cannot be rescheduled on short notice due to the ever increasing lead times required by the regulatory process (currently at eight weeks minimum) and in the case of the Gulf project we started over a year in advance. Ships, seismic equipment, and crew are expensive assets that keep running huge costs even when sitting. (Canadian flagged ships have incredible burdens, much higher than say foreign flags but I will not bring in all the issues in one letter ...)
- That resulted from political factors and not based upon scientific knowledge.
- That puts a seismic program that would cost about \$1,000,000 into an uncertain political regulatory process (CEAA panel) that will in itself cost \$1,000,000-\$1,500,000; involve significant non productive distraction from the business, on top of the \$500,000 spent on the EA and the estimated minimum \$300,000 on environmental mitigations during and after the program. Clearly this kills the seismic project in all cases. There is no way our industry can carry this 130-230% regulatory burden, and I would suggest it is unique, with no equal in the world.
- That puts a seismic program “on trial as guilty until proven innocent” into a process where industry is supposed to “prove” that we are not having an impact when no impact is apparent. Besides being very difficult to prove a negative, the added bias which is selectively employed called the “precautionary principle”, makes this task impossible.
- That singles out for persecution the seismic industry (because it will stop oil and gas development) with unknown or no evidence of impacts when DFO has regulated many fish stocks into becoming endangered species, and allows clearly harmful practices, apparently against the law such as bottom dragging. When that species is threatened or endangered DFO then uses this to restrict, ban, or limit seismic with no evidence that seismic causes any harm, and no compensation is paid to us. I think it is reasonable to conclude that DFO’s miss-management of the fishery is the only cause of fish declines and has had a serious impact on the non-recovery of endangered marine mammals that depend on fish for food.
- That allows millions of tons of fish to be killed that endangered whales rely on for food yet more cost burden related to delays, regulatory process, restrictions, Environmental assessments, imposed studies, imposed research etc... are placed on seismic with no scientifically known impact (outside of one or two laboratory tests that are so far from real world conditions as to be useless) and nothing but a potential for a minor behavioral impact to fish.
- That focuses on noise from seismic and the potential for behavioral impacts on whales (again huge costs and barriers; EA’s, mitigations, meetings, studies, imposed research, limits on areas, limits on timing, limits on direction of lines, limits on water depths, limits as to time of day) above all other impacts to these species. The absolute definition of harassment of whales is called “Whale watching” or benignly named “Eco-tourism” which chases whales in noisy boats clearly interrupting their life processes with no regulation from DFO. Relative to the less frequent, lower impact, intermittent vs.

constant sound, and less direct seismic activities. This is called bias and selective regulation. Where are the EA, mitigations, number, time, calendar, day, approach, noise restrictions and the “precautionary principle” for whale watching? Completely missing!!

- After “Whale watching” the most predominant noise in the oceans for whales and in Canada’s offshore areas is from commercial shipping. On average 12,000 ships pass through the Gulf of St. Lawrence each year with significant constant noise emissions not unlike those produced in less frequent seismic that produces intermittent sounds. This noise is not even considered by DFO because it does not fit with the agenda of the NGO’s or DFO. Bringing shipping into this process would result in an outcry and political pressure (Canada Steamship Lines-Paul Martin) so again substance is sacrificed for perception of actually making a difference. Because of these short sighted policies it appears that there is a political preference to importing oil and ensuring Canada is at the mercy of unstable and fanatical governments in the Middle East.
- I could continue with the examples of the injustice, the bias, the misdirection, the complete lack of priority, in areas like the third world status of Canadian sewage treatment, and run-off from cities laden with chemicals and oil ...where there are know impacts, known solutions, but there is no political will to solve the problems. It is much easier to give the perception that something is being done to protect the environment by allowing DFO to over regulate a small industry out of existence when the truth is there is no substance to this plan and no positive results for the environment will be achieved. In fact the opposite will occur as Canada’s electricity and manufacturing industries will be forced to turn to nuclear and coal power. Both of these have serious pollution issues much worse than gas or oil, but we will be left with no choice. Fishermen should be up in arms to support our industry as the burning of coal is contaminating the meat of fish which will destroy their industry if the government gave the real statistics and tested fish to protect the public.

Canada’s energy security, Canada’s number one export product/ tax revenue base is under attack and the process needs radical change today. The CEAA and SARA laws give tremendous powers to DFO and the NGO’s to shut down the industry. My industry will be the first to go and we will lead the way to the decline of the oil and gas industry. This is a systematic process to block the collection of geologic information that would allow areas to be understood better and determine if there is even a potential for energy development.

It should be obvious that large oil and gas finds are farther and fewer between, reserve declines are exceeding reserve replacements in most areas, and the necessary pace of exploration is woefully too slow, bogged down in the regulatory morass, and agenda of the NGO’s to move Canada to a third world status. From my vantage point this is an excellent path to energy insecurity, and economic disaster.

Again, the species that is unfairly endangered and threatened is the seismic industry, my company, is the only Canadian company in this industry with the only Canadian flag ship, employing over 60 Canadian maritime families. We are the pointy tip of the entire industry that relies upon our work. If we cannot be successful to get you to understand this fact and the serious issues facing our business, I fear this industry will not survive the

next year in Canada. We need changes in the regulatory process or our industry needs immediate endangered species protection otherwise the government will be responsible for running another industry/business out of Canada, it is that simple.

In addition, to this the Government is giving away my product in total disregard of the federal laws of Canada that has resulted in serious wasted resources and 7 years of wasted time. We have attempted to stop the release of our only product (seismic data) by the offshore petroleum boards and National Energy Board, and issues like this are causing us to be completely overwhelmed with material distractions from our work.

I have no doubt that not one thing will change and that this government is abandoning Canada's last toe hold in the seismic industry, and is at the same time giving up the entire energy export industry by systematically creating new legislated barriers as tools for the NGO's, and DFO's current promotion to the primary regulator in our business.

IV. Proposed solutions

1. The provinces need to take a much more involved role in understanding and having a strong voice in a federal regulatory process (CEAA & SARA) that is aimed at the Achilles heel of the energy industry. The provinces need to defend their management of their own natural resources from Federal intervention.
2. The provinces, Natural Resources Canada, and DFO need to collaborate on uniform, fair policies for seismic that reflect recognition of the importance of energy and Canada's future security.
3. The provinces must assist seismic operators in limiting the redundant, pointless, and expensive imposed research, and studies from DFO as a condition of doing work. Redundant studies must be eliminated. No studies should be conducted without a contract to protect the seismic operator from losses, abuse, and undue delay without compensation. All study objectives, methods, and preliminary findings should be openly shared and created in consultation with seismic operators.
4. DFO and the Canadian Environmental Assessment Agency need to exclude seismic from the existing Canadian Environmental Assessment Act Panel Review process that was intended for mines, pipelines, and large projects with significant lasting environmental impacts, of which seismic has none.
5. With regard to seismic as a necessity to the discovery of more oil and gas reserves for Canada, the federal Government should employ the "Precautionary Principle" towards a Canadian Energy Security plan to eliminate the overlapping, inconsistent, and dramatic growth in regulatory cost, lead times, uncertainty, and barriers.
6. Redundant Environmental Assessments need to be eliminated. Strategic or Regional Environmental Assessments should reduce the "work" and content by 90% for a permit application. GSI has had to undertake several redundant Environmental Assessments in a

given area each year, because it is part of the process, no matter it has already been well covered ground. This serves up a gauntlet for ENGO, government, and some scientists with vested interests in more study to gang up on an applicant, demanding ever greater mitigations, restrictions, and studies for each seismic permit application.

7. The divide and conquer strategy DFO has been employing to add unusual, sometimes costly, mitigations, and environmental effects monitoring, to unknowing usually oil company applicants to raise the bar for successive programs has to be put in check by the offshore petroleum boards, NEB, and provinces taking a more active regulatory role in this area. The result is a ratcheting up of costs, and unnecessary burdens that do nothing for the environment.

8. DFO must be prohibited from regulatory delays that end projects and impose unfair losses on seismic applicants. This DFO strategy was employed in 2002, and again in 2003 in the Gulf of St. Lawrence, on the CASSIS project to occur offshore BC, and Cape Breton to mention a few.

9. For all the importance of this industry to Canadians and our way of life, or at least a smooth transition to a different way of life, Canadians deserve good governance that must demand that these processes change and that the media circus and the few left wing voices put in the spotlight, do not destroy the hard work, billions of dollars, and jobs that comprise the offshore oil and gas industry. These efforts have imposed huge inefficient costs with little apparent benefit for the environment due to seismic and drilling having the highest standards relative to any other offshore user.

I am confident that with more understanding and information, good policy decisions can be made that reflect an honest understanding of the current world energy supply and demand, current status of Canadian environmental policy failures, and an understanding of seismic relative to other more critical but unregulated or less regulated impacts.

End Notes:

¹ US Department of Energy, Energy Information Administration, "Overall Trends: Energy Use and Carbon Emissions"

² UNDP- Human Development Report, NationMaster.com

³ NationMaster.com, and Environmental Indicators.com Economic Research Chair Environmental Law and policy University of Victoria, BC

⁴ Environmental Indicators.com Economic Research Chair Environmental Law and policy University of Victoria, BC

⁵ National Energy Data Profile - Canada – 1998 <http://www.energy.ca/ECCIC.html>

⁶ Canada's Oceans Strategy, DFO and Offshore Oil and Gas, handout presented in Calgary, AB Feb. 18, 2004

⁷ www.fisherycrisis.com/groundfish.html Summary update on Atlantic Canadian Fish Stocks 1999

⁸ Mackenzie, Debbie, 2002 The downturn of the Atlantic Cod in Eastern Canada, 2003 “Extraordinary” increase in herring, mackerel and capelin numbers on the Eastern Scotia Shelf?!, “The Plankton Paradox – and how it relates to questions of fish and seals www.greyscale.net/SCIENCE/plankton.htm

⁹ May 2004 issue of the State Department’s electronic journal, Economic Perspectives. The issue is titled “Challenges to Energy Security.” The entire journal can be viewed at:

<http://usinfo.state.gov/journals/journals.htm>). U.S. NATIONAL ENERGY POLICY AND GLOBAL ENERGY SECURITY By Spencer Abraham, U.S. Secretary of Energy

¹⁰ 1999 NEB publication “Canadian Energy Supply and Demand to 2025”

¹¹ U.S. Energy Information Administration’s long-term forecast to 2025

¹² U.S. Energy Information Administration’s long-term forecast to 2025

¹³ National Energy Board 2003, “Canada’s Energy Future Scenarios for Supply and Demand to 2025” p54

¹⁴ National Energy Board 2003, “Canada’s Energy Future Scenarios for Supply and Demand to 2025” p69

¹⁵ Bulletin of the Atomic Scientists “Oil the illusion of plenty” Jan/Feb 2004 Volume 60 P20-22, 70, by Alfred Cavallo also utilized is the best assessment of world reserves the “The USGS World Petroleum Assessment 2000”

¹⁶ Annual Energy Review 2003

¹⁷ Exxon “A report on Energy Trends, Greenhouse Gas Emissions, and Alternative Energy Feb 2004