

Hebron Public Review Commission

Hebron Development Application

Record of Proceedings

Public Review Sessions, Day 10:
Environmental Protection Session

6 December 2011

Delta St. John's Hotel and Conference Centre
St. John's, Newfoundland and Labrador

Public Review Commission

Commissioner: Mr. Miller Ayre

Official Clerk: Ed Foran

Proponent: **ExxonMobil Canada Properties**

Senior Project Manager for Hebron Project &
Vice-President of ExxonMobil Canada Limited: Geoff Parker

Hebron Project Technical Manager: Dave McCurdy

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Environmental Protection Session

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COMMISSIONER'S OPENING REMARKS

COMMISSIONER (Miller Ayre): Okay. I think we'll get ourselves organized here now; get today's session started. I'll get much like those drug ads on cable TV, I'll get my disclaimers out of the way here first, and then Geoff will give his presentation. So, all my various legal requirements will be finished for the day.

My name is Miller Ayre, and on June 24th I was appointed as the Commissioner of the Hebron Public Review. This is the last week of the sessions, and I am very pleased with the level of interest that the public have taken in these sessions and the amount of information and comment that's been made. I have no doubt that the contributions from the public during this last week will be equally important and useful. According to my Terms of Reference issued by C-NLOPB in accordance with the Atlantic Accords Act I have been asked to complete an independent assessment and review of the Hebron Project Development Application to include: considerations of human safety and environmental protection incorporated into the proposed design and operation of the project; the general approach to the proposed and potential development and exploitation of the petroleum resources within the Hebron Significant Discovery Area; the resulting benefits that are expected to accrue to the Province of Newfoundland and Labrador and to Canada, having particular regard to the requirements for a Canada-Newfoundland and Labrador Benefits Plan; and a consideration of matters dealt with in the Development Plan Guidelines and the Benefit Plans Guidelines.

Questions of energy policy, jurisdiction, the fiscal or royalty regime of the governments, the division of revenues between the Government of Canada and the Government of Newfoundland and Labrador or matters which go beyond the potential or proposed development of the Hebron Significant Discovery Area are not topics under my review.

Ongoing concurrently with this Public Review process is C-NLOPB along with Fisheries and Oceans, Environment Canada, Transportation Canada, Industry Canada, initiated a comprehensive study level of environmental assessment under the Canadian Environmental Assessment Act. At the end of that process, the Minister of the Environment will issue an environment assessment decision statement. The CSR is intended to fulfill the requirement for an Environment Impact Statement within the Accord review.

On behalf of the Proponents of the Hebron Project ExxonMobil sent the Development Application to the Board by ExxonMobil for a completeness review. The Board deemed the application was in compliance with regulations and forwarded the documents to me for public review on August the 25th. I have 180 days from August the 25th, when the Development Application was forwarded to me, till the time that my final report must be written and submitted to the Board.

Public input was solicited during two stages of the review process, during the additional information review, which is now complete, and during the Public Review sessions and so here we are. These sessions give ExxonMobil the opportunity to explain the project to the public. Individual and groups will present their views as the sessions are scheduled. All questions will be directed through me. As Commissioner, I can also ask questions as issues arise.

The atmosphere for these sessions would be less formal than the courtroom-type atmosphere, but there will be some formality.

After my remarks, ExxonMobil will then take some time to discuss their project, followed by any questions outstanding from previous sessions. After a short break, we will hear from the scheduled presenters. Each presentation of 15 or 20 minutes will normally be followed by a question and answer period. There is a box with three lights on the speaker's podium: green, yellow to give a five-minute warning, and a flashing red light indicating it is time to wrap up.

Each session is being taped. Transcripts of each session will be prepared. Speakers are reminded to please identify themselves by name and organization for the transcriptionist when they first speak. Unofficial transcripts of the sessions will be provided on a typical 72-hour delay on our website and will contain a disclaimer stating they are unofficial transcripts. When the transcripts are reviewed by the Commission, the official transcripts will be posted.

In accordance with our practice, our safety moment for today is my expert pointing out of the exit signs. Additional information received from the Proponent yesterday indicates that a slow chiming bell is some kind of a warning for you to be at the ready. The more impatient sounding bell, accompanied by some kind of announcement, I don't know.

GEOFF PARKER: We didn't get that far.

COMMISSIONER (Miller Ayre): We didn't get that far but clearly a more urgent sounding bell will ring, and either of these exits will be the appropriate ones to leave the room by.

Before starting the presentations, I would like to introduce my team to you: Ed Foran, my Project Manager is with me at this table; Shannon Lewis-Simpson, our Communications Manager is giving a wave over there at our table on the left. All media and requests and problems should be routed through her. All problems - all problems - should be routed through her now and forever; Claudine Murray, our Office Manager and organizer of all things we get wrong, even if we tried to do it right, is there, ready to look after us. And they've already captured David Taylor, our environmental expert and are drilling him on how to behave properly. So we have, or I think we have our team at the ready for today.

Okay. That's it for me, as they say.

PROPONENT'S PRESENTATION

GEOFF PARKER: Good morning. First, on behalf of the entire Hebron team I would like to thank you for the opportunity today and in the coming days to talk about the Hebron Project. We are very proud of the project and the work that has been done on it date.

During the sessions we'll talk about our fundamental commitments to safety and protecting the environment, as well as our general approach to the proposed and potential development of the petroleum resources within the Hebron Significant Discovery Area.

We will outline the framework that ExxonMobil has created to put these commitments into action. That framework is called the Operations Integrity Management System, or OIMS for short. OIMS is a structured and rigorous approach to identifying hazards and managing risks. We'll also cover the tremendous benefits the Hebron Project represents for the people of this province and the entire country, and we'll explain how the project will meet the requirements of the Benefits Plan.

But before we get into all that, I would like to give you a little background on myself and my colleague joining me at the table, Dave McCurdy. I'm Geoff Parker and I'm the Senior Project Manager for the Hebron Project and Vice-President of ExxonMobil Canada Limited. I'm an engineering graduate from the University of Western Australia, and I've been with ExxonMobil for more than 20 years. During that time I've worked on gravity-based structures in Australia, Western Europe and Russia.

Dave McCurdy is the Hebron Project's Technical Manager. He's a Mechanical Engineer who has spent nearly 30 years working in the international oil and gas industry with ExxonMobil. Dave has lived and worked in the United States, Canada and Italy, and has been with the Hebron Project since early 2009.

A lot of work has been undertaken and substantial progress is being made since the Hebron agreements were signed by the province and the Hebron co-venturers three years ago. You can see the names of our co-venturers listed on the slide. They are Chevron, Suncor, Statoil and Nalcor. And we're very pleased to be working with these companies who share our commitment to responsible development.

Our Development Application, which we submitted earlier this year, lays out our plans for the life of the project. We are confident that we have a strong project. Our plans for engineering, construction and operations are being developed to ensure the safety of everyone involved in the project. We've conducted a detailed Environmental Impact Assessment which included significant interaction with external stakeholders through the Comprehensive Study Report process. We have worked diligently to ensure that our project is having a positive socio-economic impact.

The Hebron Project Development Application has been assessed by the Board and deemed to be complete for the purposes of this Public Review. That scrutiny will be continued during the Review Process and throughout the remaining regulatory process.

The Project Application has been shaped to a significant degree by the input received from a number of parties. The project team consulted with the supply community, postsecondary institutions, municipalities, provincial and federal government officials, the Offshore Petroleum Board, as well as local organizations and other interested parties during the extensive public consultation that led to the filing of the Development Application.

The Hebron Project has a number of direct benefits for the people of this province. First and foremost, it will provide meaningful jobs and careers for Newfoundlanders and Labradorians; diverse jobs for a diverse workforce.

Furthermore, our investments, combined with the Province's equity in the project, plus the royalty and taxes generated from the operation, will help fund provincial infrastructure, social programs, research and development, education and training, and services for decades to come. And it is very important to recognize that the Hebron Project will offset projected declines in oil production offshore Newfoundland and Labrador, and will help meet global energy demand for many years into the future.

During this Review Process, we should keep in mind that the Hebron Project is in the defining stage that occurs prior to detailed engineering and detailed execution planning. And while all the details have not been developed at this stage, we can confirm that the engineering and execution plans will be consistent with the Regulations, Development Application and Benefits Agreement.

Commissioner, I'm here today with members of the project team to walk you through our plans and answer your questions, as well as the questions from other interested parties.

This project is an important one for everyone in the room. If the Development Application is approved and the co-venturers sanction the project, it will benefit virtually everyone in the province.

Now, I will provide a summary of our Development Application, starting by outlining the commitments that underpin our plans for development of this world-scale resource.

Summary of Development Application

Our overall mission is to successfully deliver the Hebron Project. While we do that, we'll be achieving world-class levels of safety, security, health and environmental performance. We will be providing substantial benefits to Newfoundland and Labrador, building and strengthening relationships with the Newfoundland and Labrador community, and creating an offshore platform that will operate safely and reliably.

The overall Development Application consists of two primary documents: the Development Plan and the Benefits Plan. Several supporting documents include: the Concept Safety Analysis, the Socio-Economic Impact Statement, the Comprehensive Study Report and the Development Application Summary.

Our core value of safety underpins many of the items in the Development Application. It really is important to us that everybody who comes to work on the project, gets to go home at the end of the day in the same healthy condition that they were in at the start of the day. We have already commenced several programs around strengthening safety program, both in the engineering offices and in the construction sites here in the province. We have been partnering with local contractors, holding safety forums in preparation for the start of the construction activities.

The Development Application also describes the petroleum resource and the offshore platform facility. The petroleum resource was first discovered in 1980, and then further

exploration, in 1999, discovered Pool 1; the largest of the five pools. We estimate the recovery from the reservoirs to be between 660 million barrels of oil to over a billion barrels of oil.

The Offshore Platform Facility consists of a topsides and the GBS. The GBS is the gravity-based structure, which is the concrete piece predominantly underneath the water; and the topsides is the drilling and production facilities above the water. The concept for the GBS is a single shaft with 52 well slots drilled down through the shaft, and then a base containing 1.2 million barrels of oil storage.

The topsides facilities are designed for a production rate of 150,000 barrels of oil a day, and also include a significant amount of water injection, because Pool 1, which is the largest of the pools, is heavy crude oil. So we need that water injection to be able to maintain the pressure in the reservoir to produce that oil.

This slide shows an overview of the construction plan. On the right-hand side of the screen you can see the topsides facilities which comprise of several modules: the Utilities Process Modules, Living Quarters Module, Drilling Support Module, Drilling Equipment Module and Flare Boom Module. Those pieces are all fabricated and then they come together at the Bull Arm integration site to form what we call an integrated deck.

At the same time as this construction is going on, we are building the GBS. So, the base of the GBS is built in the dry dock at Bull Arm and then it is floated around the corner to the deepwater site where the concrete construction is completed in the floating phase. Once the GBS is complete, then the topsides integrated deck is floated over on top of the GBS to form the complete platform. That complete platform is then towed out to the Hebron field, where it's set down on the seabed, and it sits there under its own weight; hence, it's called a gravity-based structure. It is connected by pipelines to the offloading system from where the oil can be exported to tankers.

This slide shows the overall timeline for the project. We commenced the front-end engineering and design, or FEED, as we call it, last year, and then this year we filed the Development Application, as the Commissioner said, and then a few months ago we began some of the preparatory works at the Bull Arm construction site. By the end of the year we're expecting approval of the Comprehensive Study Report, the Environmental Impact Statement, and then next year we will begin detail design of the topsides and the GBS.

We would be expecting Development Application approval, followed by project sanction by the co-venturers. GBS construction would complete towards the end of next year, and then the topsides fabrication commencing in 2013. We then have a several-year period of construction leading to 2016 when all the pieces come back together, as I showed on the previous slide, and do what we call the hook-up and commissioning. Then the complete platform is installed to produce our targeted first oil in 2017.

I want to spend a bit more time talking about the environmental components of the Development Application given the focus of today's session, and firstly, our approach to environmental management.

We implement these through a systems policies processes and tools consistent with ExxonMobil's Operations Integrity Management System that I mentioned before, with our ultimate goal that guides our work on the environmental being "Protect Tomorrow. Today."

Our approach to environment management is based on sound science and a life cycle approach. By a life cycle approach, I mean it begins way back in the initial planning stage, moves through concept selection, detail design, construction, operations and ultimately decommissioning. Our goal is to actively manage environmental risks and focus on continuous improvement. So we have a structured approach that starts early.

Another way to think of that is back even before concept selection, if you look on the left-hand side of this slide, we will do an early project specific environmental analysis. So in this case, specific for the Hebron field. That would FEED into concept selection, and then, once we've chosen a concept, we carry out our Environmental and Socio-Economic Impact Assessments. In this case the Comprehensive Study Report for the Environment Impact Assessment which parts of the Development Application. And in that, we identify and implement mitigation measures.

But it is not over with just doing the assessments. We then need to put the mitigations into our environmental protection plans. So in this case, we have environmental protection plan for Bull Arm, an environmental protection plan for the offshore; and those plans including training, prevention, mitigation - that work is also commenced at the Bull Arm site, environmental monitoring and reporting, environmental and regulatory compliance assessments and all of these pieces, way back from this pre-concept selection, all the way through the implementation phase and then the monitoring and assessment phases, leads us to our goal of environmental protection and our objective of "Protect Tomorrow. Today."

The Comprehensive Study Report is a key document out of the Development Application. And this slide shows the overall time line for that, and you can see that this process commenced back in 2009 when the project description was filed, then moved into terms of reference established by the responsible authorities, and then the methodologies were also accepted by the responsible authorities.

We held public consultation sessions in 2009 and 2010. And all that input from the consultation sessions led us to submitting the Comprehensive Study Report to the Board in June of 2010. And then, the Board conducted another public review and their own regulatory review, and they coordinated that with the various responsible authorities.

You can see that took all the time from June 2010 through to September 2011. So, plenty of scrutiny there by all the responsible authorities, including the Public Review. So then the complete CSR is submitted by the responsible authorities to the Minister of Environment for his decision. That was done back in September, and then there is a further 30-day Public Review carried out by the Canadian Environmental Assessment Agency in October. So that was completed in October. Then it goes on its way to the minister for the decision, which we expect by year end.

So you can see this is a very lengthy process, going all the way from 2009 till the end of 2011, and throughout that period it's fully transparent. All the documents the Board has are put on their website. There is extensive public review, a whole series of public reviews throughout this process and every step of the way receives complete scrutiny and transparency.

The type of items in the Comprehensive Study Report is it's really two areas: the assessment is based on the initial construction area at the Bull Arm site; and then the offshore area where the completed platform will be installed and operated.

The Comprehensive Study Report assessed potential effects from activities throughout the project life, including cumulative effects from other projects to all ecosystem components. And by ecosystem components, examples of that would include air quality, birds, fish, et cetera.

The Comprehensive Study Report concluded that with the proposed mitigation measures in place, the Hebron Project will not result in any significant residual environmental effects under normal operating conditions. Examples of the mitigations, fish habitat compensation, an example of that would be creating lobster habitat in the Bull Arm area to create additional habitat for lobsters. Injection of synthetic-based muds and cuttings through the cuttings reinjection well drilled from the platform, and then using the best available produced water treatment technology.

And I will talk a little bit more about that now.

Hebron is designed for both reinjection and marine discharge of produced water. The produced water is to be re-injected into the reservoir when it's demonstrated that it can be accomplished without damaging the reservoir. There are risks associated with injecting produced water into reservoirs, such as souring and plugging, and so we do need to have some production before we can make an assessment of those risks. So in the meantime, the produced water will be discharged overboard, having been treated with the best available technology.

And there are a couple of key design features on this platform. We have what we call a vessel internal electrostatic coalescer. Basically, that's a state-of-the-art piece of new technology that aids in the separation of oil and water. Then it moves the, produced water would move through the hydrocyclones, but then we have an extra piece of equipment called a compact flotation unit that further separates the oil and the water. So that helps us stay well below the marine discharge requirements of the Board's offshore waste treatment guidelines. And in addition to that, we will discharge the produced water at approximately 75 meters water depth and that gets us below the summer thermocline.

I mentioned the environmental protection plans and, as you can see, the Bull Arm construction site has a plan, including training and various other control measures, and then we'll be developing the Environmental Protection Plan for the offshore platform. You can see here some of the environmental protection initiatives already undertaken at the Bull Arm site. So, really this is about, we start with doing the assessments, which they are very extensive assessments in the Comprehensive Study Review, but then it moves on through the plans and then the implementation of those plans.

Let me close by just reiterating our commitments; those commitments to successfully deliver the Hebron Project. While doing that, we will achieve world-class safety, security, health and environmental performance. We will provide sustainable benefits to Newfoundland and Labrador. We will build and strengthen relationships with the community. And ultimately, will develop an offshore platform that we can all be very proud of, that will operate safely and reliably for many years. Thank you, Commissioner.

COMMISSIONER (Miller Ayre): Thank you, Geoff. It is typical of us to have a session at this point where we discuss any issues that may have arisen from a previous session or sessions and to ask questions on topics that so arose.

Geoff, did you have any information back for us today at all in this process here at the moment?

GEOFF PARKER: I did have an answer to a question you asked earlier, Commissioner, on any differences in the use of dispersants or their applicability between the Gulf of Mexico and the Grand Banks of Newfoundland. So I can give you some information on that.

COMMISSIONER (Miller Ayre): Yes, that would be interesting.

GEOFF PARKER: And I will read some of that, some of this but

COMMISSIONER (Miller Ayre): I will be reading some questions myself today. The topic is more precise in nature of the detail required.

GEOFF PARKER: So dispersants are one of many oil spill response tools available. And those dispersants, they break up the oil slick into tiny droplets that move into the water column and then are diluted into nontoxic concentrations and ultimately biodegraded. The deep water horizon incident re-enforced the importance of dispersant systems to reduce the size and duration of surface slicks and preventing significant oiling of sensitive shoreline habitats and thus reducing the amount of oil that might come ashore. So the dispersants, they retain the oil droplets in the water column rather than letting them get to the shore.

The effectiveness of dispersants is a function of the type of oil, the effectiveness of the dispersant and the presence of hydrocarbon degrading microorganisms, and temperature is not as important.

Some of the tank studies that have been undertaken show that dispersants are effective even under Arctic conditions down near zero degrees.

So if you think about those effectiveness is the type of oil, the dispersant itself, and the presence of the hydrocarbon degrading microorganisms.

And then comparing between a situation on Hebron and the Gulf of Mexico: As far as the Hebron crude goes, we are planning to do some testing to evaluate the effectiveness of dispersants on the particular Hebron oil. But as far as the temperature goes, it is not so

important, because the example would be in the deepwater horizon incident. One of the very effective uses of dispersants was injecting down at the very depth where the oil was coming out of the wellhead. And in the Gulf of Mexico in that deep water, the temperature of that water was down around four or five degrees, and so that's sort of a similar sort of temperature to what we would have in the Hebron case. So we think of the Gulf of Mexico as being very warm, but in fact down at that depth it is just as cold. So that event did show that the dispersants are very effective at the cold water.

The other piece on the biodegradation rates is that the microorganisms that consume the oil, they're suited to whatever environment they live in. So they will grow at similar rates, whether they are in warm water or cold water. They just exist naturally because there is oil and gas seeps that occur naturally, and so those microbes are there in the seawater and are adapted to that environment and working in that particular temperature. So that's why the temperature situation doesn't really matter.

So, hopefully that gives us all a little bit of an education on dispersants and why temperature is not a major factor in terms of the effectiveness of the dispersants.

COMMISSIONER (Miller Ayre): Thank you. Because that seemed to be an obvious question that we didn't have an answer to at the time. We have one query for today which is really not one of substance. But the agreement you have with RDC, would that be available to us? If it is, we would like to have a copy.

GEOFF PARKER: Absolutely. In fact, I thought we had sent that to you already but we'll get it to you.

COMMISSIONER (Miller Ayre): Okay. All right, no problem. We may have received it and not

GEOFF PARKER: The labor agreement between the Hebron Project Employers Association and the Resource Development Trades Council is a publicly-available document. So we will get you a copy.

COMMISSIONER (Miller Ayre): We may have received it somewhere in the 5,000 pages we've been looking at, just missed it. I don't know, but a second copy wouldn't go astray.

Well, at this point we usually take a short break, and I think we will just to allow the first presenter to get ready. But we will, the first presenter will be starting about five to ten rather than 10:15, because this is a very important day.

The environment is extremely important to the Commission and to all Newfoundlanders and to anyone concerned about the environment who's a part of the process that we're discussing, and, in general, is interested in the environment in making sure that the well-being of all of nature around us is maintained through the process of using some of the nonrenewable and renewable resources.

So this is a very important day. It is one that we have been looking forward to. The presentations are, in some cases, complex and detailed, which is a good thing because if that's where the answers are to be found, that's the way we'd like to have the information presented.

We are delighted that people have taken the time and energy to put together comprehensive information, notwithstanding the fact that there has been work with CSR and that the federal government is going to be making its own rulings on these matters, we are still very, very interested in this topic and look forward to the remainder of the day.

So we'll take a quick break while we get organized for the first session at around five to ten. Thank you.

(Nutrition Break)

COMMISSIONER (Miller Ayre): We'll carry on now with the session because we do have a number of presentations later in the day as we move along that will be more detailed and it behooves us to get moving. And I would ask our clerk, the clerk of our sessions, Mr. Ed Foran, to introduce our first presenter.

ED FORAN: Thank you, Commissioner. We have Newfoundland and Labrador Environmental Industry Association, and representing the association is Linda Bartlett, and she is the Executive Director. Linda, please proceed.

ORAL PRESENTATIONS

LINDA BARTLETT: Good morning. I want to start by making four comments. Number one, I just want to talk this morning about the organization, who we are and the expertise within the organization, and upon talking with the Commissioner, if we have some time afterwards, I'd like to take off my NEIA hat and speak just as a citizen of Newfoundland and Labrador. And I want to start by commending the process. It's a great process. I also want to commend the senior management team at Hebron. I've had the opportunity to work with them in one of their projects, or not with their projects but one of their events they had last year, the Fit for Work event, and I have to say I was really impressed with the, and encouraged by the way they were conducting or their leadership style. It was leadership from the inside out, putting their vulnerable side on the table to try to influence values of potential workers, so I have to commend you for that and I thought that was, that was super inspiring.

NEIA is a not-for-profit province-wide business organization and we promote the growth and development of the environmental business sector in Newfoundland and Labrador. We have about 140 members and our membership is growing. What we do, these are the four pillars of the association, basically we serve the membership, but by growing the environmental business sector we are also growing environmental stewardship and protection in Newfoundland and Labrador as a voice for the industry. You can see from some of the events we've put off this year, our events are full to capacity. We run events on business opportunities, we've run some on the Lower Churchill, environmental opportunities in Labrador, the environmental assessment process. We look at regulations, how we can better

serve our members in terms of carrying out their businesses, and we also ran one this year on the economic outlook. We ran training programs this year as well around contaminated sites. We donate to Memorial University and we launched the first coop option this year in the Environmental Science Graduate Program at Memorial University.

We have an interactive website, and this is an old page, but this is the website. We put out a weekly newsletter, we have a conference, we run events, as I just mentioned, we sit on advisory boards, partnerships, and we are the go to organization for the environmental business sector.

I'd just like to also mention, on our website we like to highlight successes in the province, we like to talk about our membership, and we identify events and news, and the banner across the top of our website actually identifies the guiding principles for the Newfoundland and Labrador Environmental Association, and these guiding principles are a healthy economy, depends upon a healthy environment, companies that can provide clean technologies and solutions will prosper, proactive organizations that embrace environmental sustainability will be more competitive, and business has a responsibility to protect our natural assets for future generations.

So NEIA members are industry leaders solving some of today's most complex environmental challenges with innovative solutions or innovative thinking and state-of-the-art solutions, and they provide solutions in, they have expertise in many, many areas around environmental protection and stewardship. Some of them include waste management, hazardous waste, special waste, diversion, landfill and incineration, wastewater treatment, air pollution control, natural resource management, fisheries, agriculture, land and marine wildlife, air quality, effects monitoring, assessment, eco-efficiency, energy management and energy generation, environmental law, environmental engineering, environmental consulting, monitoring, research studies, education, remediation, recycling, composting, to name a few.

I'd just like to speak for a moment on the environmental industry today. The environmental industry is in transition with the convergence of energy, environment and sustainability. It's no longer about products and services. The forward-thinking businesses are using the environment to create value, to enhance competitive advantage, and governments are reshaping and refocusing their policies and spending across a broad range of sectors that include new technology, innovation, wastewater, water quality, green transportation, green buildings, food production, forestry, to name a few. There's new practices around environmental management in the private sector, and in the public sector there are new ideas around environmental protection.

So from a NEIA perspective and in terms of what's happening in the province today, we look at environmental challenges as business opportunities that can create win-win opportunities for everyone.

So my points for today around the organization in terms of relevancy to this commission is, number one, NEIA exists, it's been around for 20 years and it's growing. It's really positioning itself in recent years to move forward. The membership is growing. We have some members

who are SMEs, we have some of the larger global players who are members of this organization. They all have a vested interest in environmental stewardship.

Our members have terrific expertise working in harsh environments and they've built a terrific amount of expertise in the area of environmental assessment. If I recall on the Hebron Project, Stantec has taken the lead and they brought in LGL, AMEC, Oceans, Canning and Pitt. Also at the site and during constructions, there are environmental comparisons, effluent monitoring, effects monitoring. A couple of our members, Maxxam Analytics and Stantec, also have laboratories here in the province, and if I recall, AMEC, I think this week or next week they're out doing some baseline work around water quality and monitoring. Also there's a need for effluent monitoring because I think on site there is wastewater treatment and waste management.

I also want to make the point that local expertise has access to national and global expertise, so the expertise has been built up here in the province and many of our companies, our organizations, our businesses, have expertise nationally. They also are tied into a large global network.

Also, our global expertise is recognized internationally. Back in the '80s I think this province went to Scotland or Norway and, Norway and what, Scotland, yeah, Norway and Scotland - thanks Leslie - Norway and Scotland to learn about what was happening in the oil and gas industry. Today, Greenland is just spring boarding its oil and gas industry and they're coming to Newfoundland and Labrador to find out how it's done. So we are gaining recognized global, or local expert is gaining more internationally recognized appreciation.

My last points are, I just want to sort of make some overarching comments. It's very important to employ safeguards to ensure environmental protection, and of course you want to continue learning from the environmental mistakes. We want to continue to apply best practices as best we can in every aspect of the project, and I think that it's important from a leadership point to always think of leading by example. I saw some of that when I worked with Hebron and I really appreciated it, but I think that that's the pillar that really makes the difference.

And those are my comments from NEIA's perspective this morning.

COMMISSIONER (Miller Ayre): I can ask a couple of questions on this and then if you want you can move into the next session. Your organization is designed to bring together the people who are in a commercial involvement with the environment, and so that would be consultants who may be individuals, major organizations. Are there any associate members or is this primarily

LINDA BARTLETT: Traditionally, NEIA 20 years ago was around building the business of the environment. Today it's still building the business of the environment, but because the environmental industry is changing with the convergence of energy, environment and sustainability, we have members who have terrific technical expertise, as I've mentioned, around, some of these are ... I'll slow down. Trying to talk really quickly. We have terrific technical expertise, but also we have members now who have a very strong corporate social

responsibility event, so they are trying to use environmental strategy to embed in their organization to enhance not only their bottom line but to enhance value in the marketplace, give themselves more competitive advantage, and to do the right thing, which is around people, profit and the planet, so it has a triple bottom line effect.

So in answer to your question, we're not a homogenous group but we all have a vested interest in the environment. We do have some associate members around the university, around government, but we are, our focus is business.

COMMISSIONER (Miller Ayre): All right. Well, it's certainly very interesting to see the evolution that you're referring to and from our point of view, understanding who the participants are at all levels is one of the things we've been trying to do during these hearings, so I thank you for that particular presentation, and if you wanted to move on to your next thing.

LINDA BARTLETT: Okay, if you insist.

COMMISSIONER (Miller Ayre): Launch yourself.

LINDA BARTLETT: The next piece, I want to take off my NEIA hat right now, and I had a chat with the Commissioner and I said that around the area of environmental protection I just wanted to generate some thinking that might be of use in terms, for the senior management team at Hebron and for the Commissioner in terms of looking to the future. This is not absolute, this is not about giving direction. These are just thoughts that may resonate in terms of the culture of Newfoundland and Labrador, thoughts around environmental protection, and I just hope that it may have some use.

So there's this notion of sustainability. Well, if we look at the old academic model of sustainability, we talk about the planet, society and the economy. People best meet their needs in caring, vibrant societies. We're all dependent on a healthy biosphere and the economy is a subset of the environment. So the economy is dependent on the environment and the environment is not dependent on the economy. So generally sustainability has always meant living within your limits. It's not about doing without but it's about doing things better, and if we look at natural systems, in natural systems waste doesn't exist, so we all, we take in carbon dioxide, we take in oxygen from the plants, we give off carbon dioxide, through photosynthesis the oxygen is created through the plants, and we die, we all go, we go to rest, and everything is biodegradable. It breaks down, the plants grow and there's a 360 process that takes place.

Really, in the oil and gas industry, we have to be honest, I think, in when we talk about the oil and gas industry, it's not sustainability. Once the fossil fuels and the coal and the oil are used up, it's gone, it's gone forever, and I think that one of the things is to accept that and to accept that we're all part of this economy today, we're driven by fossil fuels. We depend on fossil fuels. It's part of what makes this world go round right now. So until we find another alternative, this is where we are.

So what I wanted to do is I'm just presenting a couple of possibilities. So I think in looking to

the future, can we stretch, can we imagine, can we look at a Newfoundland and Labrador that through our businesses we can use the environment to inform all aspects of our operations? I realize that, and I can see that the Hebron team are really trying to apply it, and so that the environment is not an adjunct. I see that it's embedded in your decisions and I really appreciate that, but everything from what kind of buildings are we putting up, what are the walls in our buildings, where are they being source from, when they go to rest, is there a biodegradable effect, what kind of carpets are we putting down, what is the impact of our supply chain, are we looking, is there a way that we can measure the effects of our supply chain, can we offset some of the things that we're doing, just to kind of stretch ourselves and say is there a better way to do this as an organization and for the province of Newfoundland and Labrador?

In terms of values, I just want to sort of highlight, just talk a little bit about Newfoundland and Labrador, and I am a Newfoundlander. So we look at this place and we say we're surrounded by water, we have two of the world's largest ocean currents colliding offshore, and it's where our oil and gas industry is taking place. Our history is such that we depend on the sea. Our towns and our communities, our cities, all depend on the sea for natural resources. We have some of the world's largest sea bird colonies here, we have about 30 million sea birds that come here annually to breed and raise their young, we have some of the world's largest humpback populations, we have some of the most fragile ecosystems in the province, and much of our economy depends upon this coastline, this healthy coastline, and of course we celebrate this place in community and song and we're very proud of where we live. But if you really look at some of the issues around Newfoundland and Labrador in terms of our drinking water today, well, we have about 200 boil order advisories at any given day around water quality.

In terms of waste, we have a small population and we have a large land base. We always haven't been that great around waste management. We're improving terrifically but we have a ten percent waste diversion rate, which means that everything that we buy, only ten percent is diverted. Ninety percent of everything that we consume goes in the landfill. So when I go back to embedding environmental strategy in every aspect of the operation, maybe we can do better around what we waste and how we waste and how we can use some of the debris or the offal from our business operations.

If we just look at some of our practices, Newfoundland traditionally, historically sometimes we haven't been great stewards of our own environment. In terms of waste, one litre of used oil can contaminate a million litres of fresh water, drinking water. Our lifestyle, we love the outdoors, but I checked with Motor Vehicle Registration, last year there were 65,080 ATVs in the province and 100,309 snowmobiles, and there was only a snowmobile registry last year, which you can probably double that because a lot of snowmobiles are sold without being registered. So we can say about 300 (sic) big toys.

When money starts to flow, there's more and more of those big toys, so it's really important that those values are embedded in the culture of Newfoundland, so that we can look forward and make change for the greater good. Also, in terms of Canada, we have some of the highest degenerative diseases here, because of our lifestyle, cardiovascular, Type 2 Diabetes, smoking, highest hospitalization rates, etc.

So in terms of legacy and influence, and this is a challenge really, possibility two, influencing values in a more positive direction. I saw that at the Fit for Work session, where you were really pushing safety and you were also pushing healthy lifestyle, but I think that in the camps and all these big projects, there's an opportunity to do even more, not just to provide money and put it out in communities, but actually in leading by example, influence change so that business at work is taken home and the values at work are embedded in the values of the community and the values of the community go back to the values of business.

And I just, I'm trying to wrap up quickly and I'm trying to speak quickly because these are just personal comments, but some of the drivers towards sustainability - look at this really quickly - this notion around sustainability. Well the environmental movement was launched in 1962, Rachel Carson, through her book Silent Spring, and after that the US Environmental Protection Agency was set up in the US and legislation, environmental legislation was suddenly developed on both sides of the border. In '65, Ralph Nader did launch the idea of consumer advocacy, the rights of the consumers when they buy goods, and that was with his study of the US automobile safety. Then in '77 activists started to boycott Nestle, saying the company was encouraging African women to abandon breastfeeding in favour of using baby formula and that babies were dying as a result, and this led to more critical thinking around ethical marketing practices. And I can go on and on and we all recognize around some of these pieces that took place, community responsibility, the Union Carbide disaster in Bhopal. Then the big brands came under attack due to due to ethical sourcing, and then suddenly now there's, whenever there's international work, the idea of human rights now is taken into consideration.

COMMISSIONER (Miller Ayre): You can sort of ignore the red light for the moment.

LINDA BARTLETT: Oh, sorry. I didn't actually see it.

COMMISSIONER (Miller Ayre): Don't panic outright.

LINDA BARTLETT: I'm talking -- I'm trying to talk really fast.

COMMISSIONER (Miller Ayre): No, there's no trap door.

LINDA BARTLETT: I don't want to spend a whole lot of time at this. But the bottom line is you can see right throughout, from the situation around Shallow Oil in 1995, right through to the situation around lumber harvesting and fish stocks and how the changes that took place in the marketplace that led to this issue around sustainability, even right up to the government's accountability with the Enron and Tyco situation, and now the Sarbanes-Oxley Act is enforced to give, to encourage more ethical activities around corporations and reporting. So the bottom line, what I'm trying, the point I'm trying to make with all this is that we generally think business does business as usual unless we fight for something or unless there's a crisis, and I don't think that has to be the way. I think that the opportunity is there to stretch our imagination and really think what can we do that hasn't been done that we can do differently and position Newfoundland and Labrador in a place that is better and is looked up to in terms of doing the right thing.

So possibility three, leading by example and protecting our assets for future generations. So in terms of summarizing are possibility, stretch, imagine, go beyond our comfort zone, use the environment to inform all aspects of business operation, influence change and values in a more positive direction and lead by example in protecting our natural assets for future generations. And we're going to change the province in whatever we do and whatever we done. Thank you.

COMMISSIONER (Miller Ayre): Thank you very much and we'll take a copy of that presentation as well, if you don't mind, if you could leave one. Shannon will take it from you. That will be fine. I think that you make a point that I think many Newfoundlanders are beginning to realize the need to concern ourselves with the environment in our everyday lives and it may be a slow process, but I think ultimately as a province that believes in the outdoors, that we have to recognize there's a responsibility that comes with that and I thank you for the thoughts that you provided in that second part of your session as well.

LINDA BARTLETT: Thank you.

COMMISSIONER (Miller Ayre): Geoff, I don't know if you wanted to make a statement before Linda steps away.

GEOFF PARKER: Really just to thank Linda. Firstly on the NEIA side. Obviously, as you said, we use many of the NEIA member companies and for us it's great to have that experience of people and companies available locally, so that's really good. And then on your personal piece, I did find that thought-provoking, so I think to me the coaching style that you're using there, that does resonate, so keep doing it. Thank you.

LINDA BARTLETT: Thank you.

COMMISSIONER (Miller Ayre): Our clerk will introduce our next presenter.

ED FORAN: Thank you, so perhaps is the Alder Institute now available to present? Okay, thank you.

COMMISSIONER (Miller Ayre): Take your time, yes, take your time. We'll shuffle around a little bit.

ED FORAN: Yes. If anybody needs to refresh their coffee or whichever, we'll just take a few minutes as they get ready for their presentation. Thank you.

(Nutrition Break)

COMMISSIONER (Miller Ayre): Yes. Ed, do you want to start?

ED FORAN: Sure. Thank you, Commissioner. So, Janet is here again representing the Alder Institute. She has submitted a document. I think we have copies available. It's on our website and everything else.

So, Janet, we're a little ahead of time, which means to say you have time to speak. Don't need to rush yourself, but again, we do have the green, yellow and red lights here in front of you, but again, take your time, and we will listen carefully. Thank you.

JANET RUSSELL: Thank you for the opportunity to speak to you today and for doing what you're doing.

The Alder Institute is a local, very small non-profit collective founded in 1998.

It was founded by three graduate students in Biology who were interested in and frustrated by the use of science in public discourse in ways that we found were not always straightforward, and we were disappointed by it in our studying of science, how we saw it being used. So, we created this non-profit umbrella group through which we could pursue things such as the comments here today.

Our mandate includes representing an ecological point of view in public discourse and translating science into common language.

We have participated in previous oil and gas reviews. My first exposure to thinking about offshore oil and gas here was working for the Newfoundland and Labrador Natural History Society during the Terra Nova EA. The Natural History Society had participatory funding, and they hired several graduate students and others to help them put together their response to that environmental assessment process. And that was Chaired by Dr. Leslie Harris and Jon Lien were both involved with, in that review. Unfortunately, neither of those individuals are with us at this time.

They participated in the White Rose EA as interveners, after their experience as reviewers in Terra Nova. I think their experience in being reviewers during the Terra Nova EA process was one that crept up on them, and by the end of it, I think they were a little dismayed and felt misled and surprised by what they'd come to hear. And so then, during the White Rose EA, they were actually also interveners, and they hired me to do some work for them during that process.

Then through the years, there have been several calls for public participation in oil and gas environmental assessments in Newfoundland and Labrador, and we've submitted comments as we've been able to, which is to say, not to any great extent, but we've tried to participate.

We have worked also with research colleagues, Gail Fraser at York University and Joanne Ellis, who is now in New Zealand.

Back in 2005 So, I guess, I'd like to make the point that the public participation of the Alder Institute spans some years now, and although it's only a small portion of the years that the oil and gas industry has been operating off our shores, so we're moving through time. It's now decades that there's been activity out there, and there's been a few public reviews but the understanding has been that those are going to dwindle off and this one, or the level of public

engagement, I guess, in this one came as a bit of a surprise because it may not have reached this level. But anyway, it's good to see.

So, back in 2005, we did a poster at the, there was a conference that met in St. John's on the effect of oil on wildlife, and we put together something we had been working on at the time was, we were interested in looking at the predictions that were made by environmental assessments, and then following up after projects became operational and asking the question, so were the predictions borne out? Was the data collected to even assess whether the predictions were borne out?

And this is important follow-up work that should be a much larger component of environmental assessments than, I think, it is, and in the design of how we review them. Because if we make predictions that we can't follow up on, really they're kind of like apple pie statements, aren't they? So, we have to be careful too to try and make predictions that we can follow up on and then we do actually have to follow up on. Each environmental assessment should be asking of the previous ones, were the questions or predictions that were raised or made in the previous environmental assessments, have they since been addressed? Has there been any forward movement?

Now, unfortunately, it takes quite a few resources to even answer that and do a review of earlier environmental assessments and ask that question. I can't claim to have done that, but I think it would be a wonderful thing for a group, like yourselves, to do, you know, someone with the resources.

That poster was concerned with oil spills. We looked at predictions in earlier environmental assessments that were made around the number of oil spills that various projects expected to have during their lifetimes. And then we just asked the question, well, so how many have they had. And we found that they'd already had more than they predicted. And so, that was a bit disconcerting because they were only, they weren't even through their lifetimes.

So, one of the problems we experienced was access to data. You couldn't always answer a simple question, either because the data weren't available in an easy-to-use format or publicly accessible way. And then if you asked for the data through Access to Information or these kinds of things, you would often find that you still didn't end up with the data, and this has been a problem. There's been some improvements made over time in this, but I would suggest that there's still a really long way to go with this, and this review would do a good service if they asked the question at this juncture, how available are the data in Newfoundland's offshore oil and gas industry, both from a research perspective but also from a public audit perspective.

We would like to be able to ask questions, like, does our industry meet the offshore waste treatment guidelines? There are clear guidelines delineated and target levels of emissions, asking the question, are these guidelines met? It's a pretty simple question, but, in fact, you can't do that. The public can't do that at the moment because the data that is collected by the industry and provided to the C-NLOPB, based on which presumably the C-NLOPB audits their compliance with the waste treatment guidelines, that data is not publicly available as far as I

know at the moment. I would love to be found to be wrong on that. So, I hope someone will correct me.

Among the conclusions that that poster made back in 2005, was that offshore oil and gas legislation, namely, the Atlantic Accord here in Newfoundland, limits public access to basic information.

It seems that there are technical problems with the legislation that impede the flow of information. Access to information is sort of a prerequisite to thinking about things. If you don't know what's going on, it's difficult.

Just to touch back on the mandate of the Alder Institute, translating science into common language, and the notion of science, I wanted to go to a general level of observation here and make some comments on the context that we're in.

We have an offshore oil and gas industry. The work that they do is involved in their mandate, which is to explore, extract, produce oil offshore.

As human beings, we have been selected to survive, and one of the unique aptitudes that we have is creative thinking. We're either blessed or burdened with innate tendency towards optimism, which enables us to carry on under difficult circumstances, and think that everything is going to work out all right, and we'll figure it out. We'll do it. It'll get done. We'll figure it out. And so this is a blessing and a curse. And it's, with respect to an industry like offshore oil and gas, it means that we'll take it on. We'll have a tendency to take it on, and it's very challenging.

The other part of the context is the rest of nature. And I say the rest of nature because we are also a part of nature. And, in thinking about that, and we are capable of conscious reflection, so we do think about it and we are a little bit confused sometimes about what our objectives are, how to state them clearly, how to pursue them straightforwardly and honestly. These are challenges in communication and in doing the things that we do.

So, science is sort of our antidote to the pitfalls of optimism. The main pitfall of optimism being delusionary thinking, denial, that sort of thing.

Science is pursued as an antidote to this in that it's a very conscious and deliberate attempt to recognize the fact that when we try and think about things of which we are a part, we are somewhat in our own way, which makes it difficult to think clearly.

And if we don't want to think clearly, that's fine, and that's always an option, and you can embrace that or not. It's a choice. But if we have signed on for straightforward operations, transparency, pursuit of the benefits of the scientific approach in clarifying what we're doing and how we're going to do it, and what we understand to be the consequences of our plans and the risks we are acknowledging to be taking on or not, then science is, I would, I think it's a fairly incredible intellectual tool, but it's subject to contamination.

When I think about my first year at university in Biology lab and we're being taught how to

think about how to design our experiments in the lab and think about the scientific method, the thing that made the most lingering affect on my own thinking was the exercise of being challenged to think about what are the things that may be influencing your measurements. What are the things that may be influencing the questions that you're even asking?

We were challenged to try and open our minds and really think hard about how we were in our own way, which is our lot in life. We can't actually escape it. We can do our best to acknowledge it and try and design things so that we don't delude ourselves if we don't want to.

So, this exercise of always asking, by design, right, try and design things so that you're not in your own way. Try and acknowledge your biases, the potential effect of commercial influences, the effect of the temperature in the room, the effect of who is doing your measurements or how they've been instructed or what influences they're under, whether they're awake or asleep, anything at all. It's all about design.

You can't have a scientific approach if you don't have a very serious attitude towards the design of how you're going to proceed and respect the potential influence of things like an innate attraction to optimistic thinking. And that if it's your project, you want it to happen and you want it to work, and you don't want anyone to tell you, you can't do it. And it's all complicated, and it's a problem. It's a challenge.

So, one of the things you really need is you need to open up the conduits for information flow, so that everyone can get access to it and be on the same playing field when it comes to access to information.

Another Alder publication relevant to oil and gas is from 2006 with our colleague, Gail Fraser at York University. It's entitled Produced water from offshore oil and gas installations on the Grand Banks, Newfoundland and Labrador: Are the potential effects to seabirds sufficiently known? That was in a Journal called Marine Ornithology.

I mean, there are a number of things in that paper. I'll provide a copy to the Chair, but among the conclusions, one that I'll speak to a little bit is the conclusion that the null hypothesis that oil sheens do not kill seabirds needs to be tested. So this is back in 2006. So, I'll say something about null hypothesis. There's a tendency in the practice of science for the general public sometimes, or even the people practicing the science, to confuse tools for thinking with management tools. The null hypothesis is one of those. It's kind of a dangerous tool in the wrong hands.

So, in the null hypothesis, it is usually stated null meaning nothing. So, a stated thing like there are no effects, you see this a lot in oil and gas environmental assessments. There are no effects. There are no significant effects. There's a lot of kind of informally stated null hypothesis thinking in environmental conclusions. Yeah well, it might have a place in the methodology of the research. It's disturbing to find them in the conclusions.

The null hypothesis - you can never accept the null hypothesis. You can only reject it. You can collect evidence to reject the null hypothesis, and if you do, you get to throw it out, but just

because you haven't collected the evidence to reject it, does not mean you accept it. It's just still a hypothesis out there that has utility as a tool for thinking and research and if you collect something that disproves that null hypothesis, you've learned something. If you don't, you haven't necessarily learned anything.

One other comment I'd make on that is that the assumption is that you're trying to test the hypothesis. So, if you have a null hypothesis of no effects, your effort to test that hypothesis would include a research program that was actually trying to collect the data relevant to the null hypothesis. You may not collect the data to reject it, but the assumption is that you are actually trying to do that. So, you certainly don't get to accept the null hypothesis. You're not supposed to accept it ever, but it's even shabbier if it's accepted without much effort to collect the data. You see that in environmental assessments.

So, no data does not equal no effects. My earlier experience in environmental assessment hearings was that the people that get to rule the day are the people who have simple messages and repeat them, so I'm going to say that again. No data does not equal no effects.

If no data relevant to the testing of a null hypothesis are being collected, it is a subversion of science to accept and apply a null hypothesis as a management tool, i.e., in this case, an environmental assessment tool. The Precautionary Principle must be applied in this context.

And this is where the practical limitations of a scientific approach and environmental assessment comes up and the antidote is the Precautionary Principle.

Precautionary Principle is a practical approach which says that, in the absence - I'm not going to quote it. I don't know how to quote it directly, but the gist of it is that in the absence of the information or the understanding or in the presence of willful ignorance, not taking precautionary steps around things for which you may have reason to be concerned about, there's no excuse.

So, just because you don't have the data or maybe the data are not even collectible. Maybe it's not practical. You don't fill a white room because you just can't figure out what else to do about it. You say, well, we don't know. The scientific thing to do is to just say you don't know. And then size up the risks of proceeding this way or that way, given that you don't know, and it's not that you have to know. You don't have to know. We can't know everything. Not everything is feasible for us to know in the timeframe on which we have to act. So, stuff is happening. Stuff is always happening, and not knowing whether or not there are effects is no excuse for not taking precautions. And this is an inherently conservative approach to doing the stuff that you do, whatever it is. And it's a form of insurance. And it's a fairly, in the long term, probably a fairly cost-effective form of insurance.

You could launch all kinds of unrealistic, extremely expensive research programs that will never succeed, maybe never succeed, but at the very least, it may not succeed on the timeframe during which you have to make your decisions. So, I mean, sometimes political pressure will push people to embrace costly solutions that are not even reasonable. It's not always the most reasonable thing to pull out all the guns and put on a show of capital intensive research. I'm not saying it's not sometimes a wonderful thing to do. Sometimes it is a totally

wonderful thing to do, but it's not necessarily the most sensible thing to do and it's not always feasible. And if we're going to be realistic about understanding the marine ecology of the northwest Atlantic, during the timeframe that we're I mean, we're already decades into this offshore oil and gas activity.

We still haven't got much of a clue about the environmental effects. I don't think that's an unfair thing to say. We have some clues, but in the scheme of things, we don't have much of a clue. Some of the clues we do have are not very heartening. They give me cause for concern. I don't trust that we're proceeding sufficiently cautiously. I don't trust that the maximum potential for science to inform our thought processes is being protected, and these are challenges that we are already decades into mowing through in a fairly nonchalant way.

We've spent lots of money doing various things for show, but some of the simplest things in life are free. And sometimes people just need to be a little more open to straightforward communication, opening up the data, acknowledge when we don't know things, acknowledge what our actual objectives are and have a frank exchange about it.

Anyway, I'm going on because I was told you had lots of time.

Science and Hebron. Okay then, here's just a quote. Now, here's an example from the Hebron Comprehensive Study Report. This is a direct quote. I think this is illustrative of something. I'm going to leave it to you to consider. *"It is unknown which seabird species, if any, are susceptible to mortality from flaring. There is currently no known mitigation for the potential environmental effects from flaring, but flaring is expected to have minimal effect on marine birds over the duration of the Project."*

I'm curious. I'd like people to consider how scientific a statement, or I guess it's a paragraph, two sentences, these two sentences. What does that reflect about our understanding of the particular activity, in this case, flaring offshore on migratory birds out there. Well, according to this, we don't know which species, if any, are susceptible to mortality. Well, that's not necessarily true, but that's what this says.

Then it says, if there are any, well, there's no mitigation. Fair enough. And then, see, you'd think, well, this doesn't sound too good, but then it says, but don't worry, there's no effects. There's minimal effects expected. So, there you have your supreme example of optimism, right, denial, really; an unwillingness to consider the risks that are being taken here, and an illustration of the force of optimism on a program to proceed.

Here's another example. This is a table in the Comprehensive Study Review listing environmental effects, and they have a way of categorizing them. And there's a key at the bottom that gives the definitions for different letters. So "N" is Negligible, and it's defined as "There may be some environmental effect but it is not considered to be measurable."

On September 23rd, during the part of this process where the public was invited to solicit requests for further information, we requested a discussion to substantiate a methodology that equates non-measurability with negligible effects. We requested that the key include more information by adding under each heading a category for "unknown." Following this

addition, we requested that the assessment of effects be reconsidered and a discussion of the effect of unknowns on the level of risk being taken be provided in conjunction with a consideration of what role, if any, the Precautionary Principle has in the environmental assessment of offshore oil and gas projects.

I think that would be an improvement in how the environmental assessment is done. It's not, as far as I know, in the current one. I'd love to be corrected on that. As far as I know, that's the way it reads.

To go back to our context here in the northwest Atlantic, we have some experience of the failures of science and management in the our history of our management of marine resources.

These are a bunch of bullets just to remind me to try and say some things. We go back to the science versus optimism thing in that science is really the ultimate tool if you want to try and free your potential to think straight. That's about all it is really, and, whatever it is you're thinking about; it could be your marriage. Science can really help people with marital problems, and it can really help think about things like resource management and protect us from our tendency towards optimism in a sense that it could lead to delusional thinking.

And the principle way that we need to protect science is by design. We need to do the same thing in thinking about science as a whole endeavor that we would do in the Biology 1001 lab when we're learning how to design our experiment and we're going to have to ask the question, what are the things that are going to influence the potential for science to flourish and serve public thought.

And that would lead you to having to notice that different institutions in our society that had the potential to provide different kinds of services, are starting to melt together. So, when you think about the influence of offshore oil and gas industry as a capitalized activity that has its own particular and natural objective, which it is their business to optimize, and that particular endeavor has a lot of capital. I mean, oil and gas is famous around the world for having budgets in some, some companies have on the scale of nations. It's a geo-political force, the oil and gas industry in the world.

We'd be naive to think that our local branch is not part of that greater global history, and you need to protect the public interest from some of the tendencies of something so big and so heavily capitalized that has such a focused objective because it's not part of that objective.

We all do the work we have to do and the work they have to do, we have to protect ourselves from the risks to Newfoundland and Labrador of being hosts to a party with the mandate that the oil and gas industry has. Not that we shouldn't respect the fact that the people engaged in that have their work to do and it's hard work and they have a lot of challenges, but we can't be naive. We have to protect our local environment from objectives that may not always coincide with our own best interests.

So, when you see that the oil and gas influence from the oil and gas industry is now almost kind of melting together the university, the government, and, of course, with itself, industry,

the options for where the source of independent, critical thought science-based thinking is going to come from, it's starting to look threatened. And so, by design, we have to remind ourselves and start asking, what are the potential erosive influences on maximizing the potential for scientific thinking to inform the whole picture here. Where's it going to come from?

Well, I don't know, this is one of the lessons from Northern Cod. You look back and you had the Department of Fisheries and Oceans; it was in some ways, like the C-NLOPB, in an incredible conflict of interest, given a task to do that, by design, it's not really a very realistic task to give anyone to do. They're both charged with supporting and encouraging the fishing industry and protecting the resource. That's very difficult. Those are two objectives that are very difficult for one party to do objectively.

COMMISSIONER (Miller Ayre): Janet, it's me here. Sorry.

JANET RUSSELL: Okay. I couldn't tell where it was coming from.

COMMISSIONER (Miller Ayre): We would like to ask a couple of questions and I'm afraid of bouncing off the timeline that we have, so.

JANET RUSSELL: Oh okay. Oh, yes. Sorry. I will move on through this. So the point there is simply is among the lessons from northern cod, there was not a lot of critical thinking coming from the university here. They were too involved with trying to get contracts from DFO. DFO was the main game in town, really, and a lot of their funding was related directly to the bearing on industrial applications. So, it was very narrow. People can speak to that elsewhere.

But the bottom line is that the universities are not sufficiently independent, and the one that we have has been courting oil and gas money quite heavily. I mean, it is starting to look like an oil and gas institute. So we need to separate industry and science. We need to separate science from the state, and this is all required if we're going to design the insurance that we need that comes in the form of facilitating the possibility of free and critical thought by design. We cannot forget that it has to be by design. It doesn't just happen. It is a very vulnerable potential.

I will just point out that Alder made some earlier submissions as part of this Hebron Project process. They are outlined there.

And the conclusions from our submission to the Merits Review was that the environmental effects assessment provided for marine birds for this project is not realistic, it is not scientifically defensible and nor is it acceptable.

What do we want? We want serious thought be provided to protecting the role of science. I mean, we could come up with a long list of detail things that we want but a lot of that falls out from an environment. If you have the right environment, the details are more likely to take care of themselves. You don't have to make this exclusive list of every detail or have the resources to do that. If the environment is one in which science can flourish unimpeded, and

it has the resources to provide critical thought on things of relevance, then the public's interest has provided some insurance.

So how to do that in the context of offshore oil and gas? I think it is important to relieve the C-NLOPB of its conflict of interest as regulator and facilitator of both oil and gas. I think it is important to relieve government research at DFO and Environmental Canada for many dependency on industry for funding and logistics. I don't want Environment Canada doing research on seabirds that has been directly funded by the oil and gas industry.

Relieve the university from its current prostitution to the oil and gas industry. The oil and gas industry has the right to fund whatever things are available for it to fund. I don't think that by design it is wise for the university to include itself on that list.

Thank you.

COMMISSIONER (Miller Ayre): Thank you, Janet. I'd just like to clear up a few things in my mind. It was very a thoughtful presentation. I should say that you've got me scared to death that I may not be thinking straight, even as I speak, because I got to design the questions appropriately, and I do have, I think, some very interesting philosophic observations in the material you provided in addition to the environmental matters. And I found some very interesting thoughts on the process of assimilating information and dealing with information. And I think your comments had merit quite outside environmental issues and there are some real lessons in how we all interpret and design our thought processes around almost everything we're directly concerned with, which I hope I have understood one of the basic points you were making.

The particular things that I'm interested in are related to the data questions. I gather to some extent there is a shortage of data on the sort of base case with regard to what existed in the environment prior to the oil industry as being one issue, compounded by the lack of data with regard to the impact the industry is having, so that it becomes even more difficult to measure all these things.

You indicated there was a lot of data in the hands of C-NLOPB that would be very valuable. Is that data likely to lead you to answers or is that data, if you're able to obtain it, better described as being information that would improve our understanding? Or is there some really, do you any there is data there that has the significance level to truly advance the whole understanding of what's happening? I mean, is it a major amount of information, and do you have a certainty around how accurate that is and how good that data is to begin with?

JANET RUSSELL: No idea.

COMMISSIONER (Miller Ayre): No, you're uncertain about it. But there is still a lot of information that if made public could help us all understand the process better, and what in fact is happening to the environmental issues surrounding, whether it is sea life or birds or just the condition of the ocean?

JANET RUSSELL: I make a couple of observations related to your questions. One is that, I mean, there is data related to compliance with regulation. That's of a particular type. And that's of interest. You never know what use data is. I mean, if we could always predict where we were going to get the answers to what questions, we would know everything that we could know and we don't. And that's the difference between applied science and basic science. I mean, basic science people seem to think is self-indulgent or something, but, I mean, most applications of science haven't come from applied science. They have come from a long history of basic science. So who knows what use can be made of any particular data set. You don't necessarily know at a time. It is not necessarily even that it's going to be us that would be make use of it. But the fundamental thing is to make the data available. And then there are people out there, maybe there is people in Norway who want to compare something here with their experience. My understanding is that they can get more data on their experience than we can get on ours. And if they wanted to compare the two, well that would be even harder.

Another comment ... oh, I lost that track of thought.

COMMISSIONER (Miller Ayre): No, well that's fine. When you talk about

JANET RUSSELL: Oh sorry.

COMMISSIONER (Miller Ayre): Go ahead.

JANET RUSSELL: I think I remember now what I meant to say. The thing you say, well, is it about that we had this baseline data, now we're going to have this other data and compare it. One of the fundamental problems with the process here is when the environmental assessment gets taken seriously by the public, there is the exploration part of the trajectory and then there is the development part. And a lot of the environmental risks are taken in the beginning.

I mean, there are risks that are associated with exploration drilling that are less likely during development. I mean, exploration is risky. There is a lot of risky behaviors associated with exploration behavior, and this behavior is entered into.

I mean, my understanding of the process - and I'd love to be corrected on this - but my understanding is the C-NLOPB goes to the industry, and whatever their schedule they're on, says well, where would you like to explore next or bid on next? What area of the northwest Atlantic under our jurisdiction interests you? So the oil and gas industry comes back and says, well, we're interested in this area here. So then there is a land-bidding process that's set up to target areas that have been identified by the industry as of interest to them.

Industry in that case is really the ones selecting the areas. The government has not predetermined, as far as I know, any areas that are off limits. So, for example, if the industry said, well, the southeast shoal, that's an area we're interested in next. It is quite possible that the next fitting round would be the southeast shoal. So, the area is put up for bids. Industry bids. There is a successful bidder. They enter into a contract with the government. One of the conditions and responsibilities of the successful bidder, according to their contract, is to drill.

So, you might ask the question: Who is the proponent? Right? Who is the proponent? It's a mixture. The government is part proponent because the government has obliged industry to do exploration work, to do drilling. If they don't it, they lose their rights to that piece of offshore. So the government is actually requiring them to go out now and spend a bunch of money drilling and doing whatever. And this all predates. I mean, an environmental assessment such as the one we are here now at for Hebron, in particular, well, I mean, I'd be interested to hear you outline how long, what is the lead-up history of activity in this area that predates today?

COMMISSIONER (Miller Ayre): Well, I mean, that's the kind of issue that we can address, I think, if we have the ... we will still have the opportunity as this day goes on and tomorrow to talk to ExxonMobil on some of these issues, and I'll endeavor to do that, but we're up against a time factor here now. So I thank for your presentation.

JANET RUSSELL: Right. So with respect to data collection, I mean when you collect baseline data is kind of an important design question.

COMMISSIONER (Miller Ayre): Yes, thank you very much.

JANET RUSSELL: Thank you.

COMMISSIONER (Miller Ayre): Now, I think the next presenter, Earle, I think, are you at the ready? I know you're under some time constraints as well. So we can move right into it without. You're not going to be bothering by moving right up to the mic. Good okay, thanks.

ED FORAN: So the next presenter will be Earle McCurdy. Earle is President of the Fish, Food and Allied Fish Workers Union. And the FFAW has submitted a document, which, again, is on our website. So, we will start in a moment.

(Off the Record)

EARLE McCURDY: Am I supposed to start here or do I wait?

ED FORAN: Yes, Earle you can proceed now. Thank you very much.

EARLE McCURDY: Okay. Yes, you are right. I do have a couple of other considerations on my plate today, but in any event I appreciate the opportunity to be here. I'm joined by two members of our inshore council, Glen Winslow from St. John's and Nelson Bussey from Port de Grave, and also our oil and gas industry liaison staff person, Robin Saunders.

Nelson is a member of the One Ocean Board of Directors and Glen is a member of the working group for One Ocean. And both have spent a lot, contributed a lot of their time trying to get the considerations and the views and so on of people in the fishery impacted by the oil and gas developments, get that understood. I appreciate them taking the time to come today. I also appreciate the opportunity to be here.

I see we have five, six of the delegation that went to about a year, a little over a year ago went to the southern US, the Gulf of Mexico, for a week meeting with various affected parties from the disaster down there; the blowup or whatever it was of the rigs, explosion on the rig. And we've visited a number of communities, met with fishing industry people, oil people, mayors and so on, and had a chance to get a taste of just how devastating all that was.

In addition to Nelson and Robin and myself, I see Greg Janes from Suncor and Maureen Murphy from One Ocean here. And we had delegation to go and have those meetings, and it was a pretty sobering experience, I might say.

In any event, we have a presentation which I won't read through. I will touch on some of the main points. There is a lot of history to the fishery in this province. I mean, when it was fish that Cabot has said to have brought up in baskets, not oil. So for a long time it was fish that defined our society, our culture and everything about us, and really built the communities that we have in the province today.

While our fishery, dollar-wise, the export value of our fishery compared to the export value of oil, there is quite a difference. In terms of jobs, the fishery is a very significant part of our economy, and in the order of in excess of 20,000 direct jobs and, of course, many spinoff jobs. And really what is it, is the mainstay, still, for all the trials and tribulations of a great many of our rural communities.

The majority of our seafood, some would like to change that, but the majority of our seafood is landed for processing in this province and exported to about 55 different countries. Our union represents people working both in plants and also in the fishing boats. A lot of those, that fishing activity, has a direct interface with the oil industry and there is a direct impact and an immediate impact in their day-to-day operations.

Protection of our fishery resources, of course, has been a concern for a long time, and the impacts of foreign fishing were such that in 1977 the Canadian government extended fisheries jurisdiction to 200 miles. Unfortunately that didn't prevent the moratoria we had on ground fish species in the horrendous socio and economic fallout from that.

The prime producing fields we have in the oil industry are for the most part on grounds that are very suitable for fishing. A lot of the characteristics that make a particular piece of ground good for oil also happens to be good for fishing. So the activity actually falls right on fishing grounds.

And it attempting to look at all that ocean out there and say well it is only a little bit of space there where the oil industry is, so you got all the rest of the ocean, apart from that little bit. What's wrong with you? That should be good enough for you. But fishing grounds don't quite like that. It is like expecting all of Newfoundland and Labrador to produce blueberries, when there are some spots that are great blueberry picking grounds and some you'd have to be a pretty small bucket that you'd fill up in some areas. I wouldn't suggest out on New Gower Street you'd do particularly well.

So there are key areas for fishing and there is a lot of activity out there that can affect that. Exploration development, production-related activities, and then cumulative impacts of seismic programs, drilling, produced water, unexpected spills and so on, all have a cumulative effect.

The seismic activity, for example, is one that's very controversial with fish harvesters. This summer, for example, in the shrimp fishery, shrimp fishing in fishing area 3L, which is that's off the south of Cape Freels, and north of Cape St. Mary's, the main shrimp fishing area, the fishing was excellent. A seismic vessel, some seismic activity took place nearby and shortly thereafter the catch rates dropped off drastically. This is experienced both in the inshore boats that Glen and Nelson fish, among others - they both are involved in that fishery - as well as in the bigger offshore boats. Both experienced the same thing.

The problem is cause and effect is not easy to prove. And the tendency in any time there is a discussion of any compensation, well, if you can prove damage, we'll make it good. Well, proving that is not always easy.

We can't prove what brought green crab into Placentia Bay. What we do know is that there is a whole lot more traffic in the Placentia Bay, industrial traffic, that didn't used to be there until recent years. We do know there was never any green crab there. We know they are there now and severely threatening the habitat and the future fishery, causing a lot of harm.

So, the reports have been that when seismic work takes place, that that affects catch rates in the immediate aftermath. Nobody really knows at all what impact it has on reproduction, or spawning or future behavior of fish.

So, how does it affect migration, for instance, and so on? No real way to know because catch rates are so critical. You have to have a certain catch rate in a fishery to be able to economically pursue it. Ore than that, you're out of business and that's certainly what happened to those boats in 3L. So there is clearly serious need for further research and for local research on impacts of seismic activity on key commercial fish species.

The environmental assessment document has been through, I think of all the ones that have gone to the C-NLOPB over the years, have said that, well, the impact on fisheries are not significant. And I've gone far enough along in life that the bland assurance really doesn't cut a whole lot of mustard with me anymore. Might have worked one time but I have had too many occasions when the bland assurance turned out to be not at all well-founded.

One of the problems we have is environmental assessments that are completed are project specific, and don't include addressing the cumulative effects of decades of activity.

The Hebron report, the Comprehensive Study Report for Hebron said *"the potential environmental effects of the Hebron Project on commercial fisheries are predicted to be not significant."*

The incident that happened a couple of weeks ago, which as best I can understand, fortunately didn't give rise to any environmental fallout as far as anyone knows, no one would have

predicted in advance that that was going to happen. I would suggest, in fact I asked the question when we were in the Gulf of Mexico, prior to the spill what was the conventional wisdom? What was the oil industry say about the environmental risks? And of course they would have just said they're not significant. Tell that to the people whose lives were devastated by that.

Fishing activities and patterns have been forced to change because of oil and gas activities. And the level of research we've had to address the impacts between our view has been well short of the mark.

In the fishery now, we have a concept we have to contend with in management plans called the precautionary approach. And roughly speaking, what that says is that the lack of information cannot be the basis for failure to take necessary remedial action to protect stocks. In other words, you don't say, well, we don't know how much fish is there, therefore we don't know what the impact of the fishery is, therefore, we'll fish away. On a precautionary approach essentially says when in doubt err on the side of caution.

It is not as all clear to me that there is any application of precautionary approach with respect to the oil and gas activity. And I might point out the precautionary approach is highlighted in the Canada's Oceans Act.

On the Grand Banks, the access to traditional fishing grounds is being eroded out there. Our approach has not been to just block or pose willy-nilly oil development. We understand that how important it has been for the province to have the economic activity, the jobs and so on that flow from the offshore oil industry; but having said that, there is such a thing as squatter's rights. There are people out there fishing on those Grand Banks, paid a heavy price, God knows, over the years that have been fishing there for generations.

When a safety zone is designated, or a no-go zone, around an oil rig or something, then that's a loss of fishing grounds. It is a loss of opportunity. Oftentimes it forces detours which are costs. And as activity in the vicinity of a production platform increases, then a safety zone increases. Interesting that while there are no-go zones for people fishing on the Grand Banks or in the areas where these activities take place, there is no, to my knowledge, no drill zones. And the only prohibition is on the people that have been there a long time.

And over time the acreages of exploratory licenses, significant discovery licenses, production licenses and so on amount to considerable land ownership, if you can use that word, or the taking away from the fishing industry of land that was previously productive territory for them.

The acreage overlaps what were traditionally prime cod fishing grounds. Recovery is a good question. What would the impact be in the event of a recovery of cod fishing? Because when people, someone analyzes this, say, look, what are currently commercial viable species and what's the impact on those, it is important to consider that but the ocean changes. Twenty years ago we had virtually no shrimp fishery off the northeast coast of this province, and we had a very, very substantial cod fishery and now it's more or less the reverse.

So there is cod spawning and breeding grounds, migration quarters and so on, and quite frankly, I don't think there has been adequate attention given to those because it is sort of no longer seen as a commercial fishery. Well, the normal state of affairs in the northwest Atlantic is for cod to be king. I personally believe that the day will come when we revert to that normal situation we've had. Abnormal, there is abnormal environmental conditions compounded by excessive overfishing but that I don't believe at all. In fact, that's been seen in the Barents Sea, where cod stocks were at a very, very low level and to a point of precluding any fishery and now they're at record high levels as a result of environmental change primarily.

So we believe these are considerations that have to be taken into account. I think there is a need to factor in traditional ecological knowledge. I mean, the knowledge of these people out fishing and their peers is phenomenal. They have their understanding of the habitat and the environment that they operate in. if we're going to accurately or adequately capture historical information such as spawning and breeding grounds and migration quarters and so on.

There is a research and development requirement of C-NLOPB or of the oil industry by C-NLOPB. I don't understand all the roles of it but I gather there is a requirement to put so much money into research and development projects. And I think there's been too much emphasis on either public relations or making sure that it's research and development that helps the oil industry as opposed to research and development that really addresses environmental impacts, consequences on the fishery, in particular. And I think that should be redressed.

I think there is a responsibility in that regard with both levels of government as well. I mean, they realize very, very substantial economic benefit from these in terms of royalties and taxes and so on, a phenomenal amount from this activity, that we recently went from a 59-million-dollar surplus, I believe it was, to a 755-million-dollar surplus essentially related to a change in what was expected in terms of revenue from the oil sector. And I believe there is a responsibility there on particularly our provincial government, because federal government is pretty remote and doesn't understand the place, but our provincial government surely has a responsibility to say how are we going to use the proceeds from, these remarkable proceeds from this nonrenewable industry to stabilize and strengthen our renewable industries so that when the oil is no more, when we squeeze the last drop, that the renewable industries we've always depended on can continue to support an economy in this province; particularly those industries that interface directly with the oil industry.

Yes, I think the federal government has a responsibility as well. I just kind of despair of our prospects. I mean, clearly they are the ones who have the responsibility over the fish in the water. And but, having said that, whether or not they assert their responsibilities, I believe they should. I'm not holding my breath. I think they are more or less putting the Department of Fisheries and Oceans out of business with funding cuts. But having said that, I believe there is a responsibility on the province not just to say, oh, great, we'll put that 750 million bucks against the debt and be happy ever after. I think there is a responsibility, we need a strategy to say how do we go forward to the next generation of people in our renewable resources, as the baby boom generation moves through, and how can this unique opportunity help us to do so. It would be truly ironic, that's an overworked word, but it could be truly ironic if at the

time of our greatest prosperity, some of our traditional renewable resource-based industries that we relied on to carry on in our economic for so many generations, essentially went down the drain.

A big issue with the people in the fishery is risk. We're not confident that regulatory agencies are looking at the ecosystem as a whole. I share the view, just recently expressed about, the dual role or conflict of interest of the C-NLOPB in terms of being a regulator and a facilitator. I think it should be one or the other, not both. And there should be somebody separately looking at things like safety.

Destruction of fish habitat offshore is currently addressed with a no net loss of habitat policy. If some activity offshore results in disruption to the habitat, then the proponent or developer can say put a lobster reef in Conception Bay, or whatever it is they can do, which is good for to have a lobster reef in Conception Bay but doesn't do anything in terms of the environment or the area where the degradation occurred. And in particular, the Grand Banks is an area of a lot of offshore is a lot of activity.

The risk of spills is the one that really keep you awake at nights, and it was sobering, indeed, to meet people who directly felt the consequences of that. Just reading this recently as a couple of days ago, that compensation issues are still unsettled, and there are still people waiting to have that resolved more than a year, I guess it is a good year and a half later; 19 months or so.

The Hebron Comprehensive Study Report states that *"economic effects from accidental events, including hydrocarbon spills, could be considered significant to commercial fisheries,"* but goes on in the same paragraph to say, yeah, but *"the application of appropriate mitigative measures, i.e. compensation plan, would reduce the potential impact to not significant."*

I would suggest, even though they have a compensation plan, they got a compensation commissar, or whatever he's called, going around on behalf of the federal government meeting with people, I wouldn't be the one to go up to the people in Grand Band, Louisiana or any of the other communities we visited and say that because of the compensation plan, the impact of a spill in your area is not significant. I think devastating is perhaps a more appropriate description.

An oil spill off our coast of whatever magnitude has very significant socio-economic ramifications for many people who rely on our fishery resources for our livelihoods. Even a small spill has real problems. And one of the big concerns is that of product tainting in the market.

In the case of the Gulf spill, that's probably the most widely tested food in the world in the last 18 months. It has probably shrimp, or whatever comes out of those waters surrounding that spill has been tested seven ways to Sunday, and even after those tests were showing after time had passed and there had been a fair bit of dissipation of the spill, and tests in labs were shown that the food was not contaminated, the market contamination continued unabated. There were surveys published of the US public saying how many people, would you eat shrimp from Louisiana? And a very substantial percentage of the population said "no", long after, at least according to the sampling and so on and the testing, long after any apparent

contamination that could be detected had dissipated. They were still saying, no, no, I ain't buying that stuff. Don't trust it.

Larger spills causing fisheries closures have even further impacts on fish populations and habitat. Some particularly sensitive stocks could be obliterated if even a small percentage of the population is impacted because they may depend on one- or two-year classes for survival.

It is not only the people directly involved in fishing, but take the plants that depend on that raw material for the jobs, the truck drivers who truck it and so on. The consequences are brutal to imagine.

So I guess the question is, have we learned any questions from the Gulf of Mexico, from the Prestige - I won't say incident because that's a hard way - the Prestige catastrophe in Spain or the Exxon Valdez in Alaska, to name some of the bigger and more infamous events, not to mention a lot of smaller ones?

Oil spills happen and we need to be prepared. If you've gone to the Gulf of Mexico prior to the spill, I think people said, yeah, we're ready for it, we're prepared. And what in fact we talked to, for example, the energy head honcho, I forget his title, for the governor in Louisiana, and he said the level of preparation was absolutely abysmal. He said everybody had all kinds of manuals prepared but really nobody was ready. Didn't have the equipment on hand. Didn't have the, just weren't ready for it and, therefore, it was worse. The impact was worse.

The fishing industry needs to be more engaged in our view on preparedness for this. We have capable and willing people who want to protect the environment they depend on for a living and they have a lot of knowledge of the area they're working in. I think in my understanding of the Prestige event was that in fact the most effective work that was done was done, in fact, by fishing vessels, small fishing vessels who knew the area.

But essentially we're left in the dark in terms of what would happen in the event of a spill. And we've been advocating for a number of years that fish harvesters should be trained in advance of an accidental spill or discharge so they can be ready to assist in any containment or cleanup. Obviously the ability to do that would depend on the size of the spill, location. Might be more practical in localized inshore areas than in offshore areas, but there is a lot of people out there who are great seamen, know the grounds, know the habitat and have a vested interest in keeping the damage to an absolute minimum.

With respect to compensation, I understand from the report - and I have to say, I haven't read it myself, but I have had assistance from staff, from Robin, who did that - that compensation plan will reduce the impact from significant to not significant. We have no knowledge of what plan there is at the moment, and normally with something like that don't you negotiate that, as opposed to somebody just saying here it is?

So we really, I don't know what is And what we found also with respect to any of these activities is again, is the requirement to be able to actually prove damages which in many cases are prove cause and effect, which in many cases is very difficult.

So I guess a big question we have is, what happens after all these very, very handsome revenues, as I said to the province now, and we have to prepare for what happens afterwards.

I mentioned about the unique opportunity to strengthen and stabilize our renewable industries. Unfortunately, I see no evidence of any strategy or game plan to do that. I do know that in Norway they have such a plan and I applaud them for it. Other jurisdictions, such as the United Kingdom, have created legacy funds to enable research and development, engage and support the management of fish oil operation issues, consider decommissioning of oil and gas projects and so on.

In our jurisdiction we were active from the beginning in creating One Ocean as a kind of forum for dialogue between our two industries, and I think it was a good approach. Unfortunately, the budget has been unchanged in the ten years or so that it's been there which means it's actually, in real dollars, less.

We have a liaison officer, Robin Saunders in that position. But really one person, there is more The bombardment of paper and materials and briefs and reports you get is more than, really, one person can keep up with. But even for that one position, we get a little bit of money from One Ocean, a little bit of money from C-NLOPB. We used to get a little bit of money from DFO and they said they can't afford it anymore. And the bulk of the cost, the single biggest funder of that is our union. Now we don't have money set aside for that purpose. We don't have an oil and gas revenue flow but we realize that we had to do the best we could to at least try and keep up. And I think, really, the amount is hopelessly inadequate for the task at hand and should be improved on, because growth in one industry shouldn't come at the expense of another.

We've had our ups and downs in the fishery. We've had them for as long as time, and we'll have them in the future, but the fishery will surely be around in some fashion, some form after we squeeze the last drop of oil out of the Grand Banks.

So I think a fundamental goal has to be to ensure that our ocean and our marine environment are protected for future generations to the extent it's possible to ensure that protection.

We think we need to build on research activity, on fishery stocks and impacts of oil and gas activities. We have to build on oil spill preparedness and response initiatives. We all have a responsibility to better understand the impacts our actions have on the environment, on our society and on future generations.

I guess in a nutshell, although the fishery is such an important part of our history and culture, in a nutshell, what the oil and gas activity has meant for different people, the oil companies get the oil and the economic activity derives from it, provincial government and the federal government get revenue levels, especially for the province, previously unheard of. St. John's gets the boom. St. John's gets the boom, which has some good and bad with it, but they get the economic development, the new hotels going up, the expensive houses going and so on and so forth. A lot of people get the jobs for which I think we're all thankful. And people in the fishing industry get the risk. That's first and foremost what our people get from the oil and gas development off our coast is the tremendous amount of risk. The best they can possibly

hope for is that the extent to which of no fishing zones, no-go zones is kept, is not too serious and doesn't impact their fishery operations too much, and that the next time a supply ship collides with a drill rig or whatever the hell happens in the environment, that somehow we'll escape the potentially horrendous consequences of a major disaster. And that's as good as it gets.

So I believe there is a responsibility. I'm extremely disappointed that our provincial government hasn't said that we got to have a plan to say we hope to have a future for people, that our next generation, when the baby boomers move through, and a lot of us haven't got a lot of time left at it, that when they move through, we got to plan for the next generation; in particular, we recognize the importance of renewable resources and we're not just going to take that phenomenal but short, relatively short-lived prosperity and then money that flows from it, and just put it in a sock or build a pile of big buildings and monuments, but we're going to say, here's a unique opportunity to strengthen ourselves and be ready for the day when the oil revenues stops flowing. And the day we develop that strategy, I believe, well I'd certainly hope I see it some day. I haven't seen any evidence yet. I have no idea, really, what the mandate is, Mr. Commissioner, of your office so I am only more or less venting on the issues that in a succinct a manner as I'm capable of.

COMMISSIONER (Miller Ayre): I'm listening. I'm listening.

EARLE McCURDY: Here are the points that we see, and the people who work in the industry - the seismic, in particular, is very worrisome. I will just touch on one I missed on the way through. If it's a piece of real estate where somebody wants to check for to see if it's a potential site for oil development, they do seismic testing. And that becomes, so an oil company wants it and they hire, a company goes in and does the seismic work and that then becomes private property of somebody. And then if somebody else wants that information, they gets somebody else to go in and do it. And then somebody else go in on the same ground and does it again, and I'd like to know what sense that makes when surely it is bad enough to be in there once. That's enough disruption. It is enough risk without repeating it over and over again in the same location.

So anyway, I'll call it quits there and I'd be glad to try my best to respond to any questions you might have.

COMMISSIONER (Miller Ayre): Okay, thanks, Earle. Just a couple of comments first. We're trying to get a better understanding, as you are, of the issue of the effect of the seismic activity with regard to damage and so on. And we understand that there's a kind of shift, a little bit of a shift in the thinking out that there may be issues around that. We're just trying to find out a bit more about it so we can include some better understanding in the report.

Just on a question of clarity, the R&D funds in the guidelines that the Proponents would spend over a period of time, and with regard to the amount that has to be allocated, the actual projects that are undertaken are determined by the Proponent, and the C-NLOPB decides if, in fact, it qualifies as part of the R&D activity. We've had a lot of discussion in these hearings with the Proponent about areas that we think would be of value for them to direct some of their funding and why we believe that that value would reflect back on things that would be of

value, not just to us but also to them, in interfacing with various activities and information that we need to know to go forward, dwelling on things like the legacy and our better understanding of what's happening in various communities that are impacted or what's happening in your case. But that's an ongoing concern that we have, that there may be some potential there to improve the general legacy of what happens in this business, and also to improve our ability to deal with issues as they arise, and you've mentioned numerous issues that you would have.

That would be somewhat The definitions are narrow and we've talked to C-NLOPB. There is no doubt that the definitions are narrow on what qualifies.

So, this is just a case we'll try to make that we need some flexibility. But again, it's also related to the Shreds program and to the stricter definitions of R&D in the context of tax law and so on. That's a complicated thing. So, Geoff, you had a comment on this.

GEOFF PARKER: I mean, we do hear you in terms of the seismic, and ExxonMobil through the Canadian Association of Petroleum Producers are a member of the Environmental Studies Research Fund Board, and that board funds research based on the priority areas, and one of the priority areas is seismic. And so in 2012, I think there will be some seismic research and some has already been funded to look around the effect on snow crabs. So I can see that there will be some research in those areas.

EARLE McCURDY: Well, I'm glad to hear that. I think the other thing By the way, I don't know if anyone, a little quiz now. Who knows where the word "seismic" comes from? Anyone know? Greek word for earthquake. Seismic, s-e-i-s-m. That's where the word comes. So that kind of doesn't give you a real warm and fuzzy feeling. When you say, oh, yeah, that's an earthquake coming through. But anyway, that's the origin of the word just in case anyone was wondering.

On the issue of flexibility, I think it is absolutely crucial, those narrow requirements. I understand why an oil company, and if I was the President of Memorial University I'd probably would be delighted if we end up opening up the ACME Oil Co Memorial University Arts and Literature Center, a 50-story building or something. But it seems to me that our province is very well positioned to adequately fund the university, and that there should be ... I'm not opposed in any way to using some of that research money to have research institutes and so on in other areas, but the current restrictions, I think, preclude what could otherwise be very useful work, and I think there should be more than just what the Proponent brings forward. I think the C-NLOPB should, or somebody should play a more hands-on role there, and it should provide enough flexibility to cover projects and work that would be beneficial to assist in identifying and, if possible, mitigating the risk of those who are taking the greatest risk with all this activity out there.

COMMISSIONER (Miller Ayre): I just like to hear your thoughts a little bit more based on your work when you went down to the Gulf to see what was going on.

The lessons, that you indicated, in preparedness and readiness, were that people thought it was there but it wasn't there at all. It is my understanding that there have been some very

aggressive positions that have been taken subsequent to the oil spill in terms of being ready for the next one based on lessons learned. Did you have a close look at that and so on?

EARLE McCURDY: Well we did. Now bear in mind it was last October, fourteen months ago that we were there and so it was still an unfolding thing. But I just harken back to this, and I can't remember the man's name now. He was the chief energy adviser or director, or whatever they called him. He reported directly to the governor of Louisiana, and then his evaluation of preparedness was pretty stark.

I understand that that's given rise. I mean, we may have been benefitted from their misfortune in the sense that new technologies are developed and so on and so forth that help cope in the future, but none of that makes you feel real good.

COMMISSIONER (Miller Ayre): Yes. My understanding is that the plans and readiness issues now include equipment, as you're indicating their various use of vessels available, they're not on standby in a sense, but in the sense that you're talking about, people who know what they're doing. Everyone is involved in what could happen. Chemicals that could help the process of dispersement and so on are stockpiled and ready, that kind of thing. And that in some context, also now that there are alert programs, simply put. You could get a call in the middle of the night and say this is a drill. There is a major oil spill occurring, and a test of the readiness occurs. So, I mean, they really advance themselves in this field. Now I don't have any real detail on it. This is anecdotal information. That's why I was asking you if you had any detail. But it shows you an amazing change if things have gone from okay, we weren't ready to here's the equipment, where the equipment will come from. Here is the stockpiling of material. That always has to be on-hand somehow or other, not be brought in later. And if dispersement is important, then we'd better have the things ready. And not only is that all happening but there is kind of a fire drill could happen any time, any evening, middle of the day whatever. So, I mean that's a fairly dramatic turnaround, if that's the case. But I don't have the answers.

I don't know, Geoff. I mean, you'd know a little bit more but I think it is pretty dramatic the state of readiness and preparedness. I know it harps a little bit on the fact that it is very close to the event, but I presume that the magnitude of this is likely to keep it in place forever. I don't know.

GEOFF PARKER: And I think some of the other lessons coming out from the Gulf of Mexico, as Earle said, were the potential use of fishing vessels because it is previous experience in spills has been that, particularly in the first few days, getting the vessels that you need can be difficult. So I think that's one of things that One Ocean is looking at in terms of its collaboration between the oil industry and the fishing industry in terms of trying to identify some of those vessels upfront so they're better able to respond in that way.

EARLE McCURDY: I understand, if I could, just on that, there is no question that, and I had the opportunity to visit the BP control center, and having responded rather dimly in the early stages, I think they realized the public relations disaster that unfolded on them and I think there was a lot done thereafter, and I think the level of readiness now, I don't question that. It

is significantly greater than what they had then. But there are some things you can practice. You have to do the drills to a certain extent. It is real tough.

I was out and saw the CLB fire in 1992, and you can have all the fire drills in the world and they'll help you, but when you get out in a hurricane and wind, bitter cold conditions and you're fighting an actual fire, the actual event can be You have to be in it, to really know it. So you can do so much but it is clearly a very more than worrisome, frightening prospect, really, for people whose livelihoods could drastically turn on a dime, if we had a disaster.

COMMISSIONER (Miller Ayre): I wasn't sure, you made a number of comments on compensation plans. Is that government-funded activities, insurance policies by the industry or what were you referring to?

EARLE McCURDY: I really don't know what's in place, and I guess that may speak volumes in itself, but there is so much spinoff of impact depending on what happens. I know we got a taste of that in the Gulf, just how far flung the devastation went. I guess the real question comes back to who's taking the risk and what measures are in place, not only to mitigate. Usually if you take a risk, you not only have to have mitigation, you actually get some degree of consideration for that normally. I mean, do something that creates a risk for you. Well, okay, what are you going to do for me to accept that that risk is reasonable. What's the quid pro quo.

COMMISSIONER (Miller Ayre): Well, I think you've raised some interesting points in your presentation that we'll certainly have to explore further as we try to put things together, and I thank you for coming to do that. I don't know if you have any other comments you want to make right now or not but that's fine.

EARLE McCURDY: No, I think that would cover it for me. Thank you. And I appreciate your

COMMISSIONER (Miller Ayre): Okay, thank you. And Geoff, I don't know if you have a final comment as well for Earle.

GEOFF PARKER: Yes. We've talked a lot about our Operations Integrity Management System over the last few days, and so I would point out that it is focused on protecting the environment just as much as it is focused on protecting people. We were talking about in the context of safety, quite often, but the same system applies to protecting the environment. And so in some of these issues our focus is on prevention, but, as we've said, if there is an unplanned event we are prepared and we do carry out drills at a very detailed level of drill, including mock simulations offshore to make sure that preparedness has us ready to respond.

EARLE McCURDY: I guess the real challenge here would be to, I'd have to throw out there, to what extent? What's been the plan and the actual activity to date in terms of involving the fishermen who are out there in that preparedness exercise? Something like 160 crab boats and 300 shrimp boats who fish in the area. These are, I don't know, million-dollar boats, a lot of them, or thereabouts; some more than that, some a little less. Family enterprises, owner/operator enterprises, and they are in the area, fish in the areas generally covered by

these developments. So, they really should be part of a readiness exercise and to date there hasn't been that kind of communication that's needed there in our view.

COMMISSIONER (Miller Ayre): Well, I think this is something that has to be looked at. I don't think there is any doubt whatsoever it's got to happen. I mean, the experience shows that and with the lesson as obvious as that, we certainly should take the lesson as something we should apply.

So thank you for your presentation, and we'll take a break for lunch now. Thank you.

(Lunch Break)

ED FORAN: (Recording not turned on) ... Thank you, Commissioner. So we have, now, Bill Montevecchi, who is with Memorial University. I don't know that Bill is representing Memorial but I think it's regardless. He is here to present to us, and, as we can see, his presentation is coming up now.

We've received a presentation this morning, so I don't believe that we have printed copies, but the presentation will, nevertheless, be posted to the Commission website, and that will occur, I would expect, later today.

CLAUDINE MURRAY: It's already on.

ED FORAN: It's already on. So Bill, you may proceed. And as you can see, we've got our green, yellow and red box in front of you.

BILL MONTEVECCHI: Right.

ED FORAN: Right here in front of you.

BILL MONTEVECCHI: Oh, I just got cut back to 20 minutes. I had 30 when I stood up here. What happened?

ED FORAN: Well, we're trying to set time for presentation and then question and answer.

BILL MONTEVECCHI: Okay. I packed in a lot so I'm probably not going to get through it in 20 minutes. I might review it. I did that for reason for context which I think is important. I'll present a challenging presentation for the Proponents. And your question was: Do I represent Memorial University? And I speak from Memorial University. I'm a university research professor, and I have tenure at that university. And I am sure most people are probably aware that in our society there are three groups of people that have tenure - either judges, senators and university professors. So sometimes it looks like it's a perk, a job perk, but it is a responsibility, and that's indeed why I'm here today, from Memorial University.

And sometimes - I would just say too, to just clarify that right from the outset - sometimes as tenured-university professor, I have to speak or I do speak, I don't have to, but I do speak for

people who can't sometimes because of government or corporate restraints. So that happens as well.

So, I'll try and go quickly. I've already used a minute and a half. We know this is an incredibly important area for marine birds. These are the ecological reserves of Newfoundland and Labrador. They are globally significant.

We know that in our area we have more than 40 million birds that use the Grand Bank; some breeding, some coming in for the winter. This is one of the best places in the world. So it's really why I'm here and it is really why I'm doing this presentation.

I will address just four issues, and at the end of the day make just four/five recommendations. And the issues are: study design; data deficiencies access and transparency; planning for episodic events; and independent assessment and input.

So study design: The major concern here is study sites, and picking study sites depends on how one slices the pie and you how start out doing that. These are the study sites for the Hebron. People have probably seen quite a bit. We have a tiny inshore area in Bull Arm, a very large offshore area, 80 percent of which is outside of Canadian jurisdiction, and nothing in between, where all the materials and product will be shipped, and importantly, where the global significant seabird colonies are located. Those reserves I just showed you.

And why is that important? Why is it important to expand that study area? Why is that study area not adequate to capture what we need? And I will just do a couple but here's a spill trajectory in summer from Bull Arm. There is the Baccalieu Ecological Reserve which isn't actually identified on that slide, but should be. It is the largest seabird colony in eastern Canada. Here's the trajectories, spill trajectories for a blowout. This is a summer one for 60 days. You can see it getting close to the coast. And if we look at the ecological reserves, we can see that they're all in the relatively immediate area. If we look at their foraging ranges, we can see that they're going to be threatened by that kind of occurrence.

And if we look at the winter distributions, I will show you a slide of this in a little bit, but if we look at the winter distributions, you'll see, this is where our murre populations are. They are on the edge of the continental shelf, they are on the Grand Bank. They are the same place where we go to get oil because of the geology. They are in the same place. They are there for a reason. Because there is capelin there. It is a good place for fish. It is a good place for birds, good place for oiling. Southeast shoal, also a very important area. I will show you a slide of that in a bit.

The trajectories for onshore oil light up Cape St. Mary's and Placentia Bay. This was 120-blowout, projected on shore sites. There is Cape St. Mary's. But what might be really critical about protecting these areas, and I think where we're really coming up short by defining these areas as simply being offshore and Bull Arm, is vessel traffic. So, most of that product that's going to go into Whiffen Head is going to go around Cape St. Mary's and into Placentia Bay.

There is terrific traffic, we know that. St. John's, the offshore, back and forth, Bay Bulls, traffic there as well associated with the offshore. Witless Bay Ecological Reserve close to both of those places. Into the transport of material in and out of Trinity Bay, around Baccalieu Island and the parking of vessels in Conception Bay, both sides of Baccalieu Island.

So we really want to include those sites within what's an appropriate study for what might be the effects of the Hebron development.

So from reading the CSR, my conclusion is that owing to that exclusion of the seabird ecological reserves, those sites are inadequate for proper environmental assessment of the proposed development.

So, data deficiencies, access and transparency: We've heard this from Mobil. I'll challenge this from ExxonMobil. It gets said a number of times in the reports, oh, I think let's just take a look at where we are and how we've gotten here and what's been done and what hasn't.

So what do we need? We've heard already, and you can hear it again, I won't belabor it, but it is really hard to get data. It is really difficult to deal with transparency. A lot of this is engrained in the Atlantic Accord and the regulatory system that we have.

Probably most importantly about data is the quality control and how it's collected. And so there are concerns about how it's collected and what's been collected, and we don't have very much access to that, but we'd like to. It's a provincial university, so we would like to have access to that information.

And what, also, is not presented and would be extremely helpful, because we talk about the long-term corporate history, what would be extremely helpful is to hear the protocols from Hibernia, from Terra Nova and from White Rose. They have been out there for a long time. We should know how to do it. We're not starting over here, and we've heard that. So why should we be starting over with scientific protocols to monitor marine birds?

We've heard about the system that's proposed. And so I'd suggest that we would have, that kind of maturity suggests that we would have adequate protocols from Hibernia and that they would be presented, but they're not. So that's a question that would be really helpful to see those protocols and what's being done, and to question their ability to capture the episodic kind of occurrences that occur in the offshore platforms.

And again, this is tricky now. This is right from the CSR. This is 9512. It says, "*ExxonMobil Properties will develop protocols for regular searches of birds that may become stranded on all vessels and facilities.*" And it is curious that we have the word "will". Again, this isn't a new exercise. ExxonMobil's been out there for 15 years, we should know how to do it. And if we do, I'd really appreciate what we do.

And I'll show you, we have a bit of experience out there, and what we find is often a bit different from what we hear, what's been reported. But also if you read that in the report, Section 9512 says that EMCP will develop protocols, and then if we read further along, further along in the report, I'll say, well, mitigation described in line 512 will also be applied

subsequently. So we get that kind of back and forth but I can't find the protocols, and I know there are few things in there but there are not adequate protocols.

And I would like to say, there are suggestions for how to do this. In 1999, six research scientists, graduate students, Tony Diamond from University of New Brunswick, we put together protocols for the Canadian Association of Petroleum Producers. That was about 15 years ago, but they haven't been implemented. It is not a very difficult thing to do. You just have to have the will to do it and it wouldn't be easy but we have to do it, I think.

So my second conclusion would be is that in fact the study report provides no protocols to assess seabird occurrences and immortality. I think it is simply impossible to do it with what's there.

And this issue of episodic events, this is why it's so tricky. I mean, we always talk about the Gulf of Mexico and we've planned for this and planned for that. Oh, it's kind of what we don't plan for, and how do you deal with something like that, that's relatively rare, relatively random event? Well, there is some ways to do it. And usually it is robust scientific design. It has to be very, very powerful to interrogate that kind of occurrence. I mean, I just put up this one statement, and I don't want to hold to it too much but less than one storm petrel per day is recorded. Well, for starters this is a good example. We don't have that information at the provincial university. We don't have it. We have no access to it. I'm not sure why. I could give lots of examples of aspects of the report that are cited.

And I think also really important, because we are the provincial university, there is a lot of key research from Memorial University that's not referenced properly or not referenced at all in the report. And I'll make sure that the Commissioner has a full listing of those studies.

So again, I think we can't deal or nothing has been presented to deal with effective protocols to deal with episodic occurrences. And why is that important? It is important - we heard from the presentation from the Alder Institute this morning - because if you can't do it and we don't have information or we don't have data, our logical inference is that there is no problem. And the reason we do that is it's kind of way we think. I didn't think hear anything. I don't expect it to be a problem. But in fact that inference is not a correct one. It can maybe be one of convenience but it's certainly not correct. And we certainly can and certainly need to get quality information transparency. We don't have it.

This is my last point. This is about independent assessment. And I will just do a contrast of how little time we've actually had to have independent researchers on, I have never been on a platform. I have been studying seabirds here for 30 years. I have never had permission to be on a platform. One time I got on a drill rig in Marystown. Anyway, somebody took me from Petro Can, but I have never been on a platform. I have asked lots of times. We've never had a graduate student who's working on seabirds to have that experience. We have never had it. And I'm not sure why.

So all I want, the point I want to make is we have very little ability to interrogate anything out there. Of that little bits, I will just show you some of what we've been able to see. For example, we'll see statements like "*some marine birds may be attracted to the sewage*

particles in the area". Well, we've got lots of research, and I shouldn't say lots, but we've got lots of evidence from some support vessel surveys that we've engaged in. I could show lots of this. We know offshore platforms attract birds. We're sure of that. Those red circles are abundances of birds. This is shear barges in the summer. We could show other but I won't. I should keep going. I got seven minutes.

These are gulls on the base of the Hibernia platform. So certainly there are some gulls there. These are black-backed gulls. There is lot of them there. I can tell you that there are slicks in the water. I can show you photographs we have of discharges in that immediate area. And again, were there for incredibly brief periods of time. And there is one other thing I want to say too, and I really say this to ExxonMobil, I don't intend to be presumption about this at all. We actually expected some of those things are going to happen. It is inevitable, that there is going to be some of those accidents. There is no question about that. The question is, is that we don't have the ability to look at it transparently and make those assessments. So I'm not saying that nothing is going to happen. I am sure things are going to happen but we have to have a public persona and perspective of that.

Anyway, just some more. This is at the Hibernia platform. So, yeah, I just want to show you, there are oil birds out there. This is the bits and pieces we can get. Oil murre picked up on the way. This is an oiled murre. This is at the Hibernia platform, and I just want to show this because this bird has very little ... this bird is at Hibernia. It has very little oil on it - very little. It has got a little on its back but that's how that bird is going to spend the next five days of its life before it dies. It is going to try and clean that little - you can see it. So it is clean on the belly and on the breast. And for the next five days it is going to try and clean that oil off of its breast, off of its back, I should say, and it's just assaulted like that. This is what happens. It is not an easy thing to watch. And that bird will starve to death and eventually freeze because of that small bit of oil on its back.

So for a long time we've been asking to have independent observers on platforms, on support vessels, to have another way to just interrogate the information that's coming in because essentially what we have is self-reporting. And that self-reporting, it goes to the C-NLOPB but it's not independent. If Husky says something about what happened on White Rose, the C-NLOPB repeats it. There is nobody there to necessarily check that. When there is a spill, there is lots of way to calculate how much went over the side. I'm not saying we can always do that but we'd certainly like to have people there independently on vessels and on those offshore platforms.

And again, this isn't new. We've been talking about it for a long time. If we are working on what we've experienced in the past, we've heard similar things from Terra Nova hearings and White Rose hearings about having independent.

And the simplest example I could give is we have independent observers on fishery vessels, and we do that for a reason. We don't call the skipper. He might never lie. He might always tell the truth, but we don't call him and ask if he's overfished. We don't call and ask what his mesh size is because it might be illegal. We don't do that because it is not an effective means of assessing what's really going on. So whatever you're doing, self-reporting is just not a very powerful means of knowing what's happening. And essentially that's the system that we have.

And even though we can't get on the platforms, we track birds from the inshore, and I want to show that it lights up. These are Murres from the Gannet Islands. We've tracked them. This is the hot spot. They're out there. They're on the edge of the Grand Bank. They are in the immediate vicinity of the production. So there is lots of birds out there.

Funk Island is the largest colony of common murres in the world. These are satellite tracks of common murres. They follow the north edge of the bank. They come around the northeastern edge there where the platforms are and go down to the southeast shoal. So they are essentially either by the platform or downstream. These are the young birds. The males take the young birds to sea. This is where they go.

So finally, actually, I can actually wrap up and I think a bit here. I think the most important part about environmental input, independent environmental input is not now but it would have been at the beginning for the study design, because I could not and I really doubt that any independent biologist who is concerned about potential effects of the proposed development on marine birds would exclude those intermediate sites where all the traffic is. And I know that's how it's set up, but, again, it depends on how you slice the pie. So if we had input, independent input into the design at the beginning, and we'd have a very different CSR than the one we have now, and I think that's really necessary, Mr. Commissioner, and I think we really need that scientific input, that independent. Somebody who doesn't have a vested interest, independently, tenured professor's labs or however else you might do it. I don't know, many other ways to do it, to be able to make those design recommendations at the outset.

So my last conclusion is that we've really have a system of self-reporting that hasn't been effective in monitoring our offshore platforms and we really need this independent mechanism to do it. And the question is why? At the end of the day people are talking about why. That's the question, Mr. Commissioner. People are asking why? Why? And we've seen lots of examples from what happened in the Gulf of Mexico and that was the question. What were the lessons learned and why?

So I'm just going to use one person's answer, and it was Barack Obama's. And this is what he said when he was asked why. And this is what he said, "*A scandalously close relationship between the Regulator and the Industry.*"

So we've heard a lot of things but that maybe is the problem. We've heard a lot about the C-NLOPB and what they do and what they don't do. What did they do in the US? They split the regulatory regime into one responsible for safety and environment, and one responsible for development.

Again, not a new suggestion. Justice Wells, just recently made a similar suggestion for safety, that holds also for the environment. I don't think that it is an accident that he put a seabird on the cover of his report on safety.

So anyway, I think we really know it needs to be done. I think we just have to muster the courage to do it because it's not simple. It's quite difficult, but that doesn't mean we shouldn't do it.

And I think the last thing I'd say, and this is true and I've worked in Ecuador. I don't have to go on about that. We've all worked in lots of places and seen lots of things, but I can guarantee you around the world the greater the transparency for environmental protection, the greater the safety for every person who's working in that environment. So lots of good reasons to do it.

Five recommendations for the Commissioner at the end of the day here: to establish appropriate study areas because we don't have them; to enforce development of effective environmental protocols so we can assess occurrences and mortality. We can't do it. Out there for 15 years, we can't do it; replace self-reporting environmental protocols with independent mechanisms and observers; establish formal mechanisms.

And this, I should say this too, we heard this from some of the presenters today. This is a lot of work and we're here, as I'm sure lots of other people are here too, but it's a lot of work. It's a public thing. There should be formal mechanisms for this kind of review through universities, and again, maybe other places but they have to be independent. There isn't anything like that for this particular EA process.

And my last recommendation would be to act on the Wells Report and think about the separation of regulatory regimes for environmental protection as separate from the regime for safety.

So, I thank you very much for your consideration and time.

COMMISSIONER (Miller Ayre): Thank you, Bill. You've been presenting to hearings such as this or procedures with the SEAA and others, I guess going back to the very beginning of the process here.

BILL MONTEVECCHI: Well I wish I had done more, I suppose, as we always wish. I've had some roles in it. It is picked up over time. Sometimes you can and sometimes you can't, yes, but I've tried. Yes.

COMMISSIONER (Miller Ayre): So, I mean, are you still in the same state of frustration on the data side or are you saying there's been no I mean, do you now have a better idea of where the birds move? Has the information you just showed us there, moving around the edge of the bank and so on, is that information that's come as a result of this? Or is the impact of ... the information you received or has been made public with regard to what's happening in the areas of the rigs, has that added any knowledge or understanding the way to the process and to your knowledge of the patterns and what might be happening?

BILL MONTEVECCHI: With Husky, early on, we had some vessel surveys that were informative. That graph I showed for concentrations of birds were with Husky early on. But most everything else that was up there, though, in fact, is independent research from the university.

And the reason we were ... I mean, one, we certainly didn't have these answers but to see that the largest colony of those murres in the world, which happens to be on Funk Island, all go to that offshore bank in the immediate vicinity of those platforms, that was really important for us because we can't get out there to see them. So that has nothing to do for getting some kind of support from industry for that. We're not looking for it. I don't want you to feel that I'm here asking for anything. I'm not. And that was independent research.

But your question is, have we gotten much information. When we were on vessel surveys we got a bit. That hasn't had a long tenure or a long success. So we did get some information, but mostly we have questions and we would probably have those questions anyway.

COMMISSIONER (Miller Ayre): Well, when you mentioned vessels, was that independent vessels that you were using or was that supply vessels or?

BILL MONTEVECCHI: Yeah, they were support vessels. That's right. Yes.

COMMISSIONER (Miller Ayre): So at some stage you were involved in that process?

BILL MONTEVECCHI: Yes.

COMMISSIONER (Miller Ayre): So your concern is that overall there they may be damage to particular species or a critical mass of the species arising that we're not fully aware of. Is that what the main concern is? I mean, I understand there is individual concern about sheens and so on, and the kind of thing we saw in your presentation is of concern as well. But on the bigger scale, have you reached any comfort level whatsoever with whether the activity on the banks is in fact impacting biomass of a particular species or whatever?

BILL MONTEVECCHI: Yes. We don't have access to kind of information, so I can't answer that question. I would like to be able to answer that question. We don't have access to that information. We don't have And it's not just information, it is the quality of the information. So I tried to emphasize the protocols and how that's done.

So even, and I want to be really straightforward, even as information that we might get right now and some of the information that was presented in the CFR, we would question. I would question, and I think other independent researchers would question because of the way in which it was collected.

I referred to a 1999 report for CAPP, and it goes through a fairly simple protocol where you'd go out there in the different seasons of the year. You'd have continuous surveys day and night. And at least that would help capture some of the variability and the uncertainty that's in that system. Whether or not we could answer questions any better, I don't know, but right now we just have questions, and I think we have to move beyond that. We're limited. And you asked me what's the big question, I think. Do you want an answer to that?

COMMISSIONER (Miller Ayre): Yes.

BILL MONTEVECCHI: This is the world's oceans and it belongs to the public. Because sometimes I think ExxonMobil is doing exactly what they're supposed to be doing, but I think it's the regulator that we depend on as the general public, and it's the regulator that we have to go to, to take care of the world's oceans. I don't think we want to ask corporations to be protecting the world's oceans. I think we have a greater responsibility than that as human beings. So I think that's really the big question. And that's why all these little details are probably pretty important.

COMMISSIONER (Miller Ayre): When you referred to independent data and independent observers you basically would need somebody on the rigs. Is that it?

BILL MONTEVECCHI: Yes, we would really like to have it. And I'm sure we'll have criticisms because we've heard it before, and I'm sure some of them are valid. You can't see, you can't do this. So many other questions. We know birds. We know when birds get flared. We know it's leach's storm petrels and dovebies, we know it is those birds. We know it's mostly in the fall. We know that from some of the information we've got some from some of those surveys. We know things that could be done to reduce that; reducing light. There is lots of things that could be done and aren't being done. The light can be reduced. Flares have shutdown times. It could be a particular times of year. We still eviscerate and throw the waste water out at the platforms. The lice on the water; we have gulls out there feeding at night because fish are attracted to the platform. So it creates a reef. And there is lots of complications and there is lots of things we can do, yes.

COMMISSIONER (Miller Ayre): Geoff, I don't know. I know you're doing a study with the Canadian Wildlife Service and so on. So, I mean, I guess it's the same issue as to whether the extent of that is valuable. But if you could explain what that is, and Bill, you may have a comment on it. I don't know. But if you could just explain a little bit, Geoff, because I'm not quite sure to what degree that might or might not answer some questions.

GEOFF PARKER: One of Bill's points was around the attraction of birds to offshore platforms, and we will be implementing a research program in that area regarding the attraction of birds to offshore platforms. We'll be working that with Environment Canada's Canadian Wildlife Service to develop the program. So I think that will provide some additional data to support some of the issues that Bill raises.

COMMISSIONER (Miller Ayre): I mean, I would think, based on, I don't want to put words in Bill's mouth, and I put them in other people's mouths when I spoke earlier, maybe, I don't know. I get the sense that we need to, that any study that on the one hand we have people who ask you for money and then we have people who ask you not to spend money on it because they would sooner get it purely independently. You follow me? But in this particular case is there any ... there is no room in the study like that, is there, to include some of the wider community to observe what's going on and perhaps give them a higher confidence level?

I mean, I can see having people on the rigs or in dangerous situations on a regular basis is difficult. But in cases of particular studies, I don't know how that works quite the same way or exposes things to quite the same long run - danger.

GEOFF PARKER: Again, I think I understand your questioning in terms of the independent observers and whether they would be useful even for short amount of time perhaps, because as Bill mentioned, the discussion around independent observers gets back to safety in many ways because we do try and limit the number of people offshore. And so putting people out there to do tasks, such as being an independent observer, to us is not the best answer when you look at everything on balance. And I think the board has been pretty clear in terms of that, in terms of their looking around the world and certainly our experience around the world is that's not anything we do in any jurisdiction, as far as having independent observers.

We'd like to get to the stage where the environmental approach is similar to what we have in safety. That everybody is an environmental champion, and so we don't need independent observers. That it becomes everybody's responsibility. And picking up on Bill's point around responsibility for protecting our oceans, I think it is everyone's responsibility, and the Hebron Project is committed to environmental protection throughout construction and operations of the project.

COMMISSIONER (Miller Ayre): Are the people from Canadian Wildlife, are they going out to the rigs or are they doing this study based on other data they get? I quite understand it.

GEOFF PARKER: My understanding is that the program is being developed at the moment and so that it hasn't actually started yet.

JIM O'REILLY: That's correct. The program hasn't ... This is Jim O'Reilly speaking. You want me to get up?

GEOFF PARKER: Yes. This is Jim O'Reilly, Environmental Manager for the Hebron Project.

JIM O'REILLY: Yes. That program has not yet been defined. It is something that we have to talked to them about. And over the next couple of years before we go out into the field, that program will be further developed.

GEOFF PARKER: Thanks, Jim.

COMMISSIONER (Miller Ayre): So, I mean, but we don't know or you obviously don't know at the moment whether it will be carried out based on data collected there, or whether they would be the observers, presumably, and at some point, I guess, they have to be out in the ocean somewhere looking at this.

JIM O'REILLY: The intent of the program that we have tentatively discussed with them would be that there would be some type of radar that would be put on top of the platform, and it would be used to take a look at the movement of the seabirds to and from the platform. Whether are attracted by the flare; whether there is some operation going on, you know, night and day between the lights on the platform, whether that would be an attraction to them and things like that. But the intent was not to have an independent observer there but that this piece of equipment would be there and that the data would be collected.

COMMISSIONER (Miller Ayre): Okay. Thanks, Jim.

JIM O'REILLY: But we don't have anymore detail on it than that and it is still to be developed.

COMMISSIONER (Miller Ayre): That's fine.

JIM O'REILLY: But we've made a commitment to do that.

COMMISSIONER (Miller Ayre): Okay, thank you. I guess the other, Bill, I mean, I think there are lots of concern around this obviously and you're one of the leaders of that concern and you have spent a lot of time at this. So I mean I appreciate the difficulties and so on that have been expressed by you and others on this front. And knowing what we need to know is difficult and we get focused, I guess, to some extent, on whether we can get the observer on the rig or not, and whether that provides all the ultimate answers or not is another matter as well. But obviously, we need somehow to make sure we have a proper base case for what were the realities when the rigs weren't there - and however we could collect that now - and we need some indication, we need some data that everyone is comfortable with about what changes there may be. It is the methodology or the method of collecting ultimately becomes the issue and issues of independence and so on are also critical.

But I understand that if you reflect on the time you've been talking about this, that there has to be some disappointment in advancement that you may have hoped to make ten years ago and here you are again.

BILL MONTEVECCHI: Well, it is just the way it is for sure and I am sure everybody has disappointments, whatever they are doing. That's really not so much of an issue. But I think we really have to question - we really have to question. Like I said, this isn't new. The Proponent has been out there for 15 years and we really should be upfront with what we know, what we have, what those protocols are. Because with all due respect, my conclusion is that we don't have them and we are 15 years into it. So you have to ask the question why is it going to be better the next time? I mean, maybe because there is more pressure and more people are coming forward. I don't know. Or maybe we scale up and we get more concerned as more happens. Maybe we don't because we have the benefits of it, the economic benefits. But I think we have to be skeptical about this and we can't presume that we're on the course that we're going in the right direction necessarily to get that information that we really need.

COMMISSIONER (Miller Ayre): Okay. Well, I don't have anymore questions and do you? Go ahead. Yes.

GEOFF PARKER: Perhaps just on the subject of the detailed protocols. They are not something I would expect to see in the Comprehensive Study Report or the Environmental Impact Statement. I think there they would form part of the Offshore Environmental Protection Plan. And in developing that plan, that would include those type of protocols. It would draw experience from Hibernia and our worldwide operations in developing those. So they'll be done but just not at that concept stage.

BILL MONTEVECCHI: Yes. My feeling is we should be beyond that. And again, we are here in Newfoundland and Labrador and I know how it works in the world, and I know the situation isn't any different, and I know it is just as challenging, but I think we should take that challenge. We should do it differently here in Newfoundland and Labrador. I think we have that opportunity. We don't have to worry - and I know you didn't say this, so I'm not trying to be presumptuous here, you didn't say that - but I don't think we have to rely on this is the way it gets done in the rest of the world. Well, maybe, that's true but it doesn't have to be, and this is the hard part, it doesn't have to be the way it gets done in Newfoundland and Labrador.

GEOFF PARKER: I agree and to me I think it's five years until Hebron starts operating and it would just be best for everybody if we looked for the best available protocols when we come to that operation, and so that's why that timing of the Offshore Environmental Protection Plan is in the future, we'll draw on the best available information.

COMMISSIONER (Miller Ayre): Right. Okay, I think that's

BILL MONTEVECCHI: Well, I won't. Okay, thank you. Thank you.

COMMISSIONER (Miller Ayre): Sorry, Bill. Okay, thank you very much. We'll continue with the next presentation. Are we scheduled for a break or anything? No. I think we're ready to go, are we?

ED FORAN: Yes. Well, now we have the Newfoundland Environment Association, and we'll proceed through this one, and then following this we will take a short break.

IAN GOUDIE: Thank you very much. My name is Ian Goudie. I just want to say that I'm a Newfoundlander, and I have an extensive scientific background, as many of you probably know, in Newfoundland. I did have a 20-year career with Canadian Wildlife Service which took me up to the mid-1990s, and I've been an environmental scientist consulting since that time. I've had a long-term association with the Newfoundland and Labrador Environmental Association. Stan Tobin and I have been long-term friends, and I provide scientific advice to the association.

I think the talk that I'll be presenting today meshes nicely with the previous two talks. I will be talking about science - a lot of focus on science - but I'll also be rolling that into aspects of culture, in particular Newfoundland culture, and how we need to start to blend these.

A photo there of harlequin ducks. As some of you know, that was a long studied species for me in my career, and it's still on the Species at Risk Act federally.

I want to say something about development and the environment because this is what we're talking about, and the term "sustainable development" comes from the Brundtland Commission, the World Commission on the development and the environment, and that's a 30-year-old piece of work now, 1983. And often as we're sort of rushing forward with development, we're talking about the real world as the development we're doing is what's real for us, what's actually going on, but, in fact, the real world is actually what's out here happening on a cycle of profound scales that we know very, very little about. And being

humble with what we are dealing with when we're talking about the marine environment, I think is a very important way of moving forward in environmental protection. We have to be very precautionary because there is so much we do not know.

But I also want to say a lot, I want to say something fairly straightforward, really, about government and government's and sustainable development. And the Brundtland Commission was very clear in pointing out that one of the largest reasons for unsustainable development in the world is due to governments, and, in fact, we can find my examples and we are sitting right here in one of the biggest world examples of a failed commercial fishery, like a completely collapsed, unrecovered commercial fishery that got there because it was mismanaged by government.

So we have to be careful about where we're posturing and where we're sitting when we start to move into moving forward with developing some sort of sustainable development plan. Like if we are simply working within regulatory regimes, often these are very low on the bar and they can be met, but truly sustainable development has got to move us into something much higher than that, and I'll be giving some example of that.

So with the offshore, it is offshore. It is out of site, it is out of mind. There is an awful lot going on out there, and as Bill Montevicchi has explained, we don't know very much about that.

I don't really need to repeat some of what Bill has presented there. We have an extremely rich marine environment, I think with 40 million birds in the area of the development in question.

We have a lot of focus on petroleum development in the province. We have a reoccurring problem with chronic oil pollution. We understand that there are still spills occurring on a fairly regular basis. From the perspective of the Newfoundland and Labrador Environmental Association, the inshore chronic oil pollution problem may be a little better than it was but the data is fairly short term to support that. And we know that we are getting those spills offshore, and of course, the recent blowout in the Gulf of Mexico has really raised a lot of issues about offshore.

Exploration production and risk: So one of the big things we find when we end up with events, and the Gulf oil spill is a great example of that, but the Exxon Valdez was a great example of that, is this area here is the general lack of pre-spill data against which anything can be evaluated, and this is still like a major scientific hurdle in how we're going forward in relation to development of offshore. There has never been a really good sit down think tank of if we were to have a spill tomorrow, how could we answer the question of what effect that's having on our sea birds. That's a like a huge scientific question. And there is never really been like that kind of a think tank to sit down and say, okay, how would we answer that and what would we need, and then, flowing from that, how could that be implemented through some sort of environmental effects, monitoring-type program.

Obviously this is a huge area here. There is an inability to link dead birds, oil birds with source colonies. We recognize that most of seabird research takes place on colonies. And so to really get serious about effects offshore, we have to start linking those. And of course Bill did present some very important information in relation to the Funk Island murrens and the light

loggers, and now you have a link between the offshore platforms and those birds. So that means that you could essentially show up on those colonies and monitor survival or demographic rates of those birds, and then that could potentially be telling you something about effects of an event.

A lot of efforts, of course, are always on the immediate effects of oil on the marine environment, the oil birds, but there is an awful lot that goes undetected for a lot of reasons. And from the Exxon Valdez research, and particularly some of the great work done on harlequin ducks in Prince William Sound by Dan Esler, they've been able to demonstrate that survival, statistically lowered survival lasted over a decade on that particular species in Prince William Sound, and at 20 years later you can still detect oil fingerprint in the blood of those birds, but were no longer in a place where the survival rate is probably affecting population viability.

So we have a lot of emerged and emerging science that needs to be brought to bear on how we're going forward with our development offshore. And this is an area here that's very poorly developed, which is the fingerprinting of oil in relation to, for example, the sea bird mortality that shows up onshore or anywhere, really. If the oil birds were picked up offshore, this area of how do we identify a potential source of that pollution has not really been refined to the scale and to the technology that it could be. And I'm speaking particularly of we do have the ability to do mass spectrometry fingerprinting of oils, which is quantum leaps over gas chromatography, and yet, we're still, through Environment Canada, as far as I understand, still trying to identify source of pollution using gas chromatography. And the one or two cases that have ended up in court have been dismissed.

So, there's been a lot of leading science that has come out of the Prestige spill, and this, I think, has set the bar for where we need to be in Newfoundland, and that, in particular, allows us to assess annual and season demographic rates, especially survival rates of birds on colonies linked to areas of oil exploration and development. And we are able to, through those scientific techniques, separate the oil-induced effects from other human-related effects, such as climate change. And I guess really the point of this slide is really to say that if we have people in the audience or in the public or in the panel that feel that there's still a question about whether oil affects seabirds, then I would say that there needs to be kind of some backing up and review of the science on that because we have some very strong science on this now.

We're aware of a number of these, I guess, developing work that's going on with industry and government to some degree. And there is the environmental studies research fund. I'm not entirely clear now where that is with some of the austerity measures going on.

I'm aware of some of the seabird data collection protocols being developed by industry. I've done a fair amount of consulting work with LGL Limited, and they have been involved in some of that.

We do have an eastern Canadian seabird program that's evolving, and there has been a substantial amount of work in research years on distribution and abundance of seabirds by having observers on offshore supply vessels.

Talked a bit about the platform observer question. And this has been a long-term piece of work, of course, that Stan Tobin has been leading on, coastal monitoring in southeastern Newfoundland, and that includes beach bird surveys, but there's also been extensive work on inventory of coastal birds.

Oh, and I meant to mention that the NLEA does have the only oil bird rehabilitation center in the province in Ship Cove. And so that techniques in trying to clean oil birds, that's always challenging but it is still something that is moving forward.

Okay. So I just wanted to kind of move now into this bigger question of the environment development and culture because I really feel for me, living in rural Newfoundland, this is a huge area, because rural Newfoundland is suffering, like, in a huge way and we don't see a lot of things moving forward to improve it. We see a lot of focus on the offshore oil development and a government that is very much kind of in that mode, but we're not seeing a lot of efforts going into consideration of what this might mean to what is Newfoundland. We're really lucky in Newfoundland because we have a culture. We have a very strong culture, especially for North America where a lot of North America is a century or so old, we have this Newfoundland culture that's evolved over four or five centuries. And that's probably the most important thing that needs to be preserved in all of this.

So, what we have, what we're seeing is that people who have multi-generations, earn their living from the sea, in a generation now have effectively lost their livelihoods because of the downturn of the fishery. So in relation to oil development and Newfoundland culture and sustaining that culture on natural resources, and particularly on the fishery, we've had sort of a double whammy because we have all the sensationalism and the big money that comes from big oil dropped into an environment where we have a completely failed resource base, namely the fishery, that really underpins what Newfoundland is. So we have this problem where oil is going up on the seesaw, globalization and Newfoundland culture going down.

So somehow, then, what we need to be coming out the end of a development of the scale of big oil is something where, of course, this is turning now. So the balance on big oil is being brought down in the interest of bringing the Newfoundland culture up. Part of that is, of course, the recognition that natural resources have their limits and that we have to start to recognize that and integrate that in our management. But this is the big area that I did want to sort of, the key message that I wanted to try to make today is the whole question of ethics, and this is where a lot of the world is evolving. It is about corporate ethics as it relates to development.

I do most of my work or a lot of my work these days in relation to forestry and forest management, and we have in Canada now a very important agreement which is called the Canadian Boreal Forest Agreement which arose because of the woodland caribou and the endangerment of those herds in provinces right across Canada; all of which arose under government management. I need to emphasize that. Every herd of woodland caribou essentially outside of the island of Newfoundland are federally listed. This created a crisis in the industry, in the forest industry which led to international boycotts of forest products. And what kind of came down the pipeline of that was the importance of certification, international

certification in environmental excellence. And while I don't think that's something that's happened yet with big oil, I think it is something that we will see. And I hear rumors of that, for example, in relation to concerns for the Alberta tar sands, that maybe that's the next place we'll see efforts. So you had conservation groups clashing with big forest industry internationally over the issue of taking care of woodland caribou. Well, eventually what arose from that is the putting aside of differences and the development of the Canadian Boreal Forest Agreement, and that agreement is between industry and environmental groups. I don't think it would have to be confined to environmental groups, and there are probably reasons why seabirds academia is important as well, but the CBFA does have an independent science panel. But what that did is it allowed industry and environmental interests to develop a much higher bar for where conservation needs to be and where science needs to be. And so what we have now in Canada is some 200 million hectares of high quality woodland caribou habitat that have been deferred from forest harvesting activities, voluntarily by industry and develop with environmental groups.

So I think, really feel at this stage in my experience that this is the sort of direction that we start to need to move if we truly achieve sustainable development. And if we're going to simply be working within the lower bars of what regulatory agencies require, we're really not going to have that precautionary approach out there that's going to really sustain these environments in the long term.

And so we all know that people are exposed to a much wider world now and they want more of what the world offers, and this requires money. And, I guess, like, it's sort of like I have to ask in our kind of rush forward in development, and we're seeing lots of that in St. John's and surrounding areas, like what are the cultural costs of losing these rural communities and all these beautiful unique settings in Newfoundland in the rush into the oil boom and the oil bubble. And I guess, more importantly, is how through a process like this can industry take a bigger responsibility in ensuring that those sorts of effects are minimized and culture survives.

So, some general needs, then, that are apparent to us is we feel that, yes, like an industry-driven marine program can be developed but that program needs to be modeled in the context of something like the Canadian Boreal Forest Agreement, something along this lines where other players are at the table, everyone is working cooperatively, and the highest, best quality science is what comes forward. And of course that requires perspectives that identifies the players; who are they, and some sort of terms of reference of how it's to function.

There is an awful lot of work out there published and sitting in databases; somehow or other all that needs to be all brought together. Then, out of that then we would see emerging strategies to address quality and quantity of baseline and Effects Monitoring. And of course the application of state-of-the-art scientific approaches, and the Prestige work certainly speaks to that.

More specifically then, it's extremely important that Effects Monitoring is supported underneath by rigorous science and we know we don't have that yet. We have some preliminary work that's linking breeding colonies to offshore areas but we need a lot more of that. NLEA, of course, would like to see continuation of coastal-based surveys. And we need a

lot more work in this area which is really the stuff coming from the Prestige work, which is applying protocols to determine annual and seasonal survival.

So then for the more cultural side of what I've presented here, we really feel that industry should step up and take the high bar for scientific excellence in environmental sustainability. In other words, it is not held back by where the bar is from a regulatory point of view. It is kind of like what's the very best thing that could be done here and what's the most precautionary.

That the environmental issues are themselves linked in and brought together with the cultural issues, and I really have a lot of concern personally for where Newfoundland culture is headed. And I really feel that I see absolutely no reason why industry shouldn't be itself investing somehow in rural Newfoundland and ensuring that rural Newfoundland survives. And that survival of rural Newfoundland has to be itself based around renewable resource and sustainability of those resources.

When I was getting ready there earlier today and I was talking with Stan and I was taking him through this presentation and Stan, I was talking about the environment and development being inextricably linked. So if we're sustaining a healthy environment, healthy ecosystem we're sustaining a healthy economy. He said in his opinion that we actually tend to be thinking of it the other way around; that if we have a healthy economy, we're somehow going to have a healthy ecosystem, and, of course, that's not necessarily the case.

Okay. Thank you.

COMMISSIONER (Miller Ayre): Well, thank you, Ian. There are a number of questions that arise from this but just to ask you, first of all, to explain a little bit more about the forestry agreement that you mentioned.

IAN GOUDIE: Right.

COMMISSIONER (Miller Ayre): In which both parties came together, and that may be a well-known thing but I would just like to hear a little bit more about what you think drove it to occur and the outcome, the results in the context of whether you were satisfied and whether issues of objectivity, there was a lot more comfortable objectivity and so on.

IAN GOUDIE: Well, I guess the important thing from the science of, and I should point out that a lot of that is focused on woodland caribou because woodland caribou require a large intact forest landscapes in order to remain viable. It has a structured independent science panel that advises to the stakeholders. So, I think it always gets a little tricky when you're trying to keep the science in house. So with the Canadian Boreal Forest Agreement, that comfort level was dealt with by having an independent science panel that advises on matters, and then whatever is brought to the table is acted on in a consensus-type process, decision-making process. So there is that layer.

The other layer is that there is the Forest Stewardship Council certification which is FSC, many of you have probably seen that on envelopes and now especially like a lot of the envelopes coming from banks and whatnot are using FSC logos. It's the international standard and it has

a boreal standard. It itself has a lot of high quality science input in its development. So, for example, it is finalizing its own caribou, woodland caribou guidelines. So that's a certification that a corporation goes into a process when it goes into a certification, and then once they go in through that process then they go through a formal audit, and the audit is open to public input and environmental groups regularly input into those FSC audits. And environmental groups do support the FSC audit. It is a very, very good one, but only as good as the follow through as well.

So you do have sort of two things going on. You've got a certification process that's going on, that's endorsed by industry and environmental groups. Everyone is happy with the protocols in that and development of that. And you also have the independent scientific panel that advises the boreal group stakeholders. And the overall Canadian Boreal Forest Agreement also goes through an annual independent audit itself. So it is a relatively stringent process.

COMMISSIONER (Miller Ayre): Geoff, do you see this - I mean this kind of program which occurred - do you see changes in the industries approach to some of these issues that perhaps over the past 15 or 20 years where you could ultimately see this kind of agreement occurring in issues where you're working, where the oil companies are working? The forest industry, of course, has critical problems in this country, and still does. But I mean this kind of cooperative understanding between both parties working on a particular problem, have you seen that kind of activity growing in the industry?

GEOFF PARKER: Yes, I have and I think it's come with more knowledge but also better dialogue in many ways. I think one of the things I've appreciated about the discussions today has been the tone of the presentations in that I think the industry environmental groups are starting to work together a lot better, and so those sort of collaborations can really help when you get some genuine listening.

COMMISSIONER (Miller Ayre): I was just curious also. You indicated the base case, when you talked, referenced the base case and talked about having a major sit down with all parties to see if you could come to an understanding of what the original size, what the normal size to be expected would be of a particular colony or grouping of birds or whatever. How would that actually occur? What kind of things would you see coming out of that? I mean, it is not just a think tank session, but, I guess, is it collecting all the possible data? Is it just trying to find a way to develop an agreed base with regard to comparing numbers when you have something that happens so you know what was it like before and so on?

I mean, are you optimistic about what you'd learn in that kind of process? Do you think you could actually re-establish what the numbers should be or might have been?

IAN GOUDIE: I guess, like, science is really about asking questions. So you would pose a question. If we have an event offshore, the burning question would be is that affecting seabirds. Of course, there is other things but in the context of seabirds is that affecting seabirds, and, if so, where are those seabirds and how are they being affected. And we know from the last couple of decades with increasing work in the area of telemetry, which is kind of short term kind of data, but longer term is mark reciting data on colonies, that you can do a very, very powerful assessment of effects on survival of birds, and then you can test for effects

on survival of events such as offshore spill or what have you? I mean, you can test for effects for global warming. You can test for all sorts of facts. It is a statistical exercise. But in order to do that, you have to have the program. You have to have the program on the ground on those colonies that's sufficiently robust to handle or answer those questions should the event arise, right.

COMMISSIONER (Miller Ayre): Did you have anymore questions, Geoff, or any comments to make? No. I think I've ended my questions. I don't know if you had some other thought has come up in the last minute or two? If there's anything else you want to add, by all means do so.

IAN GOUDIE: Well, just that the seascape and the forest scape are very different things. And I think the Canadian Boreal Forest Agreement is a good one to look at in an analogous sort of context.

I thought that because it is a very new thing - we will be unrolling a chapter here in Newfoundland hopefully over the next number of months, it would be the first here - that maybe this could kind of put a new context on how the sort of industry, the academic interest, the environmental interest kind of move forward with offshore oil development.

COMMISSIONER (Miller Ayre): Well, thank you for your presentation, and I think it certainly has, or you hope, perhaps, provided some additional avenue of thought on a whole bunch of fields and how we should proceed into the future and so on. And thank you for your advice.

We'll have a short break now and then resume with a presentation from Wayne Chipman who has asked that he speak towards the end of the process. And after that, I think perhaps we'll have an opportunity to ask some questions of each other, Geoff, and that'll be the end of the day following that. Thank you.

(Nutrition Break)

COMMISSIONER (Miller Ayre): Okay, Ed, if you would introduce our first presenter, I think our only presenter at this particular session, preceding some questions. Thank you. We'll get started now.

ED FORAN: Yes. So we'll call Wayne Chipman forward. Wayne, please come up. And Wayne is, as we said, is a nonregistered participant but has provided a presentation deck that will go on the website. And Wayne, I know, is well-known to the industry here and has had a role both, that's a long standing role, so we welcome your input Wayne. Please proceed.

WAYNE CHIPMAN: Thank you, very much, Mr. Commissioner, for the opportunity to speak here today. Probably I will just give a bit of background on where I came from. I'm a native Newfoundlander. I graduated from Memorial in 1977; went to work with Gulf Oil in Calgary as a reservoir engineer; moved back, in 1980, to Newfoundland. I'm the Newfoundland Labrador Petroleum Directorate where we provided support for the negotiating team which signed the Atlantic Accord. We also served on a technical committee that reviewed the Hibernia Development Plan Application.

There, I went to the Board as Senior Reservoir Engineer and went to the position of Manager of Resource Management and Chief Conservation Officer at the Board, where we developed a regulatory system that you see offshore at this point in time, enforced the regulations. We developed many of the guidelines and had input on many of the regulations.

Besides that, certainly engaged in the review of the Terra Nova Development Plan, the White Rose Development Plan and subsequent amendments.

From there, went to Nalcor and served on the negotiating team that resolved the Hebron Agreements, the White Rose participation, as well as the Hibernia South.

So, a bit long-winded but that's my background. And hopefully today what I want to go through is just to give a perspective and some challenges. The areas I plan to touch on is resource management which was my role, certainly, at the Board from a regulatory point of view, to touch on the environment which is very near to our hearts, all of our native Newfoundlanders and so forth, and very important. Talk a wee bit about benefits and, again, not last, but least, certainly one of the most important is the safety aspect. To make sure all of our workers come home safely every day.

From a resource management, I just want to touch on the resource development delineation, talk a wee bit about facilities, access to infrastructure, commercial arrangement and gas conservation. These are not all the important resource management aspects but they are important considerations.

From resource development delineation related to the Hebron Project we are dealing with multiple oil and gas cumulations. There is a limited area proposed for development and all these cumulations are proposed to be produced at this point in time.

The development proposal for the oil resources proposed for exploration certainly, in my view, is very reasonable. The approach, I think, is a very comprehensive approach, but there are other resources, there are other opportunities that need to acquire information to fully assess the resources not proposed for development.

And this is certainly not unusual in some of the challenges that's there in Hibernia today, that they're still delineating and still getting information. You can't get everything up front. So it is certainly not unusual. But I think a plan to fully assess all resources not proposed for development should be put in place at an early stage. And the goal here is to maximize oil and gas recovery in the area, and that's economic recovery, and that's a challenge, and I think I need you a long lead time in order give yourself that opportunity. Get information early.

From the facilities perspective, I noticed that there were a number of options that were evaluated, but certainly the GBS is the best option to maximize oil and gas recovery. It is well suited for the type of resource that we're dealing with, and I think it has being shown that floating facilities tend to result in a lower oil recovery because of the higher operating costs and other factors. So I think important in the facilities, it should provide for additional

production and development with the jay tubes and well slots, and I think that is being incorporated into the facility but it is a very important aspect.

Water and gas processing facilities is also a key, and a key item because they tend to restrict production or limit the amount that you can produce. And I think a lot of consideration is being gone here and they've well optimized in that particular regard.

Another element, I think, that really needs to be captured at the early stage is a maintenance program, need to accommodate full resource exploitation. I think it needs to put in place that program for a long field life.

Access to infrastructure: And I think that these facilities that we got out here are very important to the area. If they are standalone developments and there are smaller fields that may not support a facility or a standalone. So they are almost as a utility and they need to provide access for potential resource development by operators outside the development area. And that's where the jay tubes and the other facilities, put it on the platform. If they are not put on at an early phase, they won't be put on later. So I think it's important that that be put into account, and it is almost an investment that has to be made upfront to capture that resource for the benefit of the area.

Commercial issues, I think, is always a center item. It should not be a profit center. I think it is there to maximize the oil recovery, but yet, there's got to be a fair commercial return. And I believe industry and government should develop a code of practice. It is something we're looking in our area. It is something that's being put in place in the North Sea, and I believe that it would only make things go a lot better if that code of practice was put in place to access infrastructure.

The commercial arrangements, it's an element that can lead and I certainly believe can cause a delay in developments occurring. They are complex, and currently only SDLs 1006/7/9 and 10 are included in the development area, and commercial arrangements should provide for all Hebron and Ben Neven's Significant Discovery Licenses. There is two licenses currently outside that. And these commercial issues should be resolved early so as not to impede resource development in the future.

Gas conservation: There is a limited gas supply and that will largely be required for fuel. And gas flaring needs to be managed in this particular regard. And certainly from our experience I think there's been fairly solid gas management plans that's been put in place for Hibernia, Terra Nova and White Rose. The amount of gas that is conserved right now is in the high 90 percent which is very good for any offshore area in the world, and but it has to be managed and it has to be a solid plan put in place.

Also, technology to reduce gas flaring should be considered, where possible. There are pilotless flares and that may reduce gas flaring.

Talk a bit on environment the year and certainly the big threats are spills and unauthorized or authorized discharge. And I will say that when dealing with the environmental, particularly on reporting and reliance from industry on those, it has not been an issue. As chief conservation

officer at the board, there was a lot of cooperation, and certainly oil spills out there of any magnitude was reported. It is a zero tolerance. There is surveillance both from flights and certainly from satellites when we're dealing with the regulatory aspects of as well.

But gas flaring and produce water probably other than spills and spills is something that's uncontrolled, that none of us want and work on to avoid.

Gas flaring, again, is a controlled item. And produce water is a major item. And this particular field is different characteristic than what we got in Hibernia. It is a heavier crude oil and we're probably going to produce a lot more water. In relation to the oil production I think there will be roughly over two billion barrels of water that could be discharged. So produce water reinjection is an issue and needs to be looked at, but it is also a reservoir threat that you can cause souring of the crude oil when you put it in. But I think, if at all, produce water reinjection is to put it back in rather than to discharge it is the preferred way to go.

Another element observation is training of fishing persons in oil spill response. I think this is an item that, right now to my knowledge, has not occurred with our fishermen, and it is probably not as much in Hebron, as probably it should be in industry approach, that our fishermen, they have a lot of local knowledge and they would be very effective, I believe. And we seen on the Gulf coast what happened after the fishing industry was engaged. So I think some type of program to train fishermen in oil spill response. We don't want to wait till it happens. I think we need to get ahead of the game in that particular regard. And as I say, it is not a Hebron problem as much as that should be addressed from an industry perspective.

Benefits: It's no doubt Hebron will help sustain oil development and provide opportunity to exploit other oil fields and gas resources. So having those infrastructures out there will certainly help reduce costs and provide an opportunity to tie in other resources.

Will provide an opportunity to farther advance Newfoundland business, research and development and education and training. And I know there's always been a lot of incidents, more around the R&D, than the E&T. And I really think that a long lasting legacy would be to provide and try to focus some more on the education of training of Newfoundlanders, and I think it will leave a long lasting benefit.

And the other opportunities to make substantial progress on women's participation in the workforce. I think we all agree that we can do a better job in that particular area.

The other item probably most, it is the most critical is safety. And oil industry has made a substantial contribution to the Newfoundland and Labrador safety culture. And to watch that evolve over the last 35 years has been tremendous when you see where we were and where we're going, and to be able to sit down and actually have a conversation with people now and talk about safety. It's largely stemming from the efforts, I think, of the oil and gas industry. But I think we have been somewhat reactive in the way that we've approached some and we implement some of the procedures. And when I look at things like the Ocean Ranger, where it was known at the time survival suits was needed. I recall going out in the field and the only thing we had was the helicopter suits, which you didn't feel very secure. There were no survival suits. And even at the Alexander Kielland went down and knowing it took a while to

adopt those same procedures to Newfoundland. And unfortunately, I think with 491, the underwater breathing apparatus that we don't know what effect it would have had but it was debated for eight years. It's too long. We design and build platforms and put them out there. I think we got to be a bit more proactive in bringing these systems in and always looking for the best available technology for safety.

I think we need to engage worker representatives in the development of safety legislation. That has not occurred in my experience when we've dealt with industry, we dealt with other organizations, but the workers representatives have not been around the legislative table. I always felt that probably that should be, and finding a way to have the workers representative, particularly on the safety end of things.

There's been a lot of energy around 491 and the helicopter run dry issue. I think this issue really needs to be resolved. There has to be some leadership, either through the regulator or governments and industry. There has been a lot of concern out there in public. In my years of experience, and I haven't seen this type of thing, this type of debate is very important and it should be closed. It should be closed. It's for the benefit of our workers and all others.

And we should strive to be a world leader in our operating environment. I think we are in a cold oceans environment. We are under very unique conditions. And we know that if we get in trouble out here we are talking about minutes in the water to survive. We are not talking about hours. We are not talking about days. And I think we have to bear that in mind and we should strive to be world leaders in this type of environment. And I think we can be.

Mr. Commissioner, I would like to thank you. And the other element I would like to take note of. I've tried to sit in on as many of these sessions as possible, and as I've said earlier, I've been involved in the Hibernia process, I have been involved in Terra Nova and White Rose, and I think the public sessions are a very important aspect. And I've really seen the quality of the presentations made here today or over the last weeks, I think it has been very well balanced. I think the people, the opportunity to communicate, and I think it is leading to a wonderful opportunity for growth and success of this project and this industry in Newfoundland, these public review processes. And it's done a tremendous job with the number of people that's been attracted to speak and speak openly and honestly on some very important topics to us all. So, thank you.

COMMISSIONER (Miller Ayre): Well, thank you very much, Wayne. Thank you for that intervention. We did want to end with, just cover off a couple of questions that we didn't have the opportunity to ask today though. Wayne did raise one of them.

First of all, with regard to flaring and air emissions, our question is: *If one of the gas compression turbines fails or the gas compression train is not performed to expectation, what effect will that have on maintaining compliance with the area mission standards quoted in the CSR upon which the finding of no significant effect was based?*

GEOFF PARKER: I'll ask Dave McCurdy to answer that.

DAVID McCURDY: Thank you. Your question was relative to the CSR, right. And the CSR was built around the regulation limits, but we also have, built into our operating practices, how we will manage situations when we have an outage of equipment. So it is built into the CSR.

COMMISSIONER (Miller Ayre): Okay, thank you. The last question is on produced water. And you indicated that, and this really relates to heavy oil issue that Wayne produced or suggested there a minute ago. You indicated that Hebron would have state-of-the-art treatment for produced water. *Can you foresee that this technology will be able to meet future, potentially more stringent standards for treating dissolved hydrocarbons in produced water, especially considering the introduction or considered introduction of a new legislation of the Gulf of Mexico covering the issue of suspended hydrocarbons and organic acid, and so on, in the actual water itself?*

GEOFF PARKER: I will start. As I mentioned in the opening presentation this morning, the Hebron design does include some state-of-the-art equipment such as the coalescer and the flotation unit.

Often it is difficult to predict exactly what the performance will be. We know that we'll be below the limits but how far below is a bit hard to predict until we get some operating experience. So, because every crude is different and even during the life of the field it will change in terms of the mix that we're trying to deal with there. So difficult to answer the question on sort of trying to predict how, we'll be within the limits, but how far within the limits, I don't think we could predict that.

COMMISSIONER (Miller Ayre): To the extent our legislation doesn't cover the dissolved hydrocarbons, and, yet, they appear to be a problem because of decisions that have already been taken on this in the Gulf. It was my understanding that there is another treatment process that may have to be introduced, another level of treatment, and the concern was that you'd be in the position to do that if it became necessary.

GEOFF PARKER: Let me pass to Dave who has more technical knowledge on this.

DAVID McCURDY: The typical process right now is hydrocyclones, and what have beyond ours is the compact flotation unit which is state-of-the-art. But even in addition to that, recognizing that the things could advance, because we actually have space onboard beyond that, so if there is an advancement of something we can either upgrade what we already have or add something to it if we need to be able to accommodate that.

COMMISSIONER (Miller Ayre): Yes. Okay, thank you. And that I had one more question, Dave, for you, in particular. Can you explain to me why the geo-carbons and the sedimentary rock face of Signal Hill and the leered slope of the incline in an east/west direction impacts so heavily on the supply boat entry angle into St. John's harbor? (Laughter all around).

DAVID McCURDY: Yes, I can.

COMMISSIONER (Miller Ayre): Good. Because your wife wanted to hear the answer.

DAVID McCURDY: I will talk to her later.

COMMISSIONER (Miller Ayre): So I welcome her to this session. I know you came down to see Dave perform, and we really got him involved there in the last five minutes or so. Well, I think that's it for today, and tomorrow will be our last session, and thank you all for your attendance today.

-END OF DAY 10-