

Hebron Public Review Commission **Hebron Development Application**

Record of Proceedings

Public Review Sessions, Day 11:
Environmental Protection and Public Review Summary

7 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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COMMISSIONER'S OPENING REMARKS

COMMISSIONER (Miller Ayre): Okay. Well, good morning for the last time. There's a sense of relief from the audience, for sure. My name is Miller Ayre, and on June the 24th I was appointed as Commissioner of the Hebron Public Review. This is the last day of the Public Review sessions, and I am very pleased with the level of interest that the public has taken in these sessions.

According to my Terms of Reference issued by the C-NLOPB, in accordance with the Atlantic Accord Acts, I've been asked to complete an independent assessment and review of the Hebron Project Development Application to include considerations of human safety, 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 the matters dealt with in the Development Plan Guidelines and the Benefits Plan 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 topics not under my review.

Ongoing concurrently with this Public Review process, the C-NLOPB, along with Fisheries and Oceans, Environment Canada, Transport 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 ensure an environmental assessment decision statement. The CSR is intended to fulfill the requirements for an Environmental Impact Statement within the Accord review.

On behalf of the Proponents of the project, ExxonMobil, the Operator, sent the Development Application to the Board for a completeness review. The Board deemed that 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 completed, and during the Public Review sessions.

These sessions give ExxonMobil the opportunity to explain the project to the public. Individual

and groups will present their views at the sessions as scheduled. All questions will be directed through me. As Commissioner, I can also ask questions as issues arise. The atmosphere for these sessions will be much less formal than the courtroom-type environment but there will still be a modicum of formality.

After my remarks, ExxonMobil then takes some time to discuss the project, followed by any questions outstanding from previous sessions. After a short break, we'll hear from the scheduled presenters.

Each session is being taped and transcriptions of each session will be prepared. Speakers are reminded to please identify themselves by name for the transcriptionist.

Unofficial transcripts will be posted within 72 hours, and will contain a disclaimer stating that they are unofficial. When the transcripts are reviewed by the Commission, the official transcripts will be posted.

Each day we've had a safety minute and we'll repeat the one which we've had while we've been in this room. An exit there, an exit there, a slow bell ultimately followed by a rapid bell, and the signal to leave the room will, therefore, be in your hands, and proceed rapidly to one of these two exits.

Before starting the presentation, I would like to introduce my team to you: Ed Foran, our Project Manager, who has acted as the clerk throughout these sessions; Shannon Lewis-Simpson, our Communications Manager; and also, we have Claudine Murray, our Office Manager; and Pat Stamp, one of our advisers, is here today, as is Dave Taylor. David is between the two ladies, Pat is in the back, and Bridget Daley is next to Pat. And the other way around, of course.

So I think, we did ... this was our chance to switch, I suppose. But maybe, if anyone wants to stay afterwards, we'll do it. I think we're out of that one, Geoff.

PROPONENT'S PRESENTATION

GEOFF PARKER: Good morning my name is Miller Ayre. Oh no, no. (Laughter all around). First, on behalf of the entire Hebron team I want to thank you for the opportunity again today - our final day - to talk about the Hebron Project. We are very proud of the project and the work that has been done on it to date.

During the session we will reiterate 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 inside 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.

But before we get into 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. I've been with ExxonMobil for more than 20 years. During that time, I've worked on gravity-based structure projects in Australia, Western Europe and Russia.

Dave McCurdy is 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 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 has been 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 consultation and 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 continue 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 royalties 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 the process, we should keep in mind that the Hebron Project is in the defining stage which occurs prior to detailed engineering and detailed execution planning. And while all details have not been developed, 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, again, with members of the project team to walk you through our plans, 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 brief summary of our Development Application, starting by outlining the commitments that underpin our plans for development of this world-scale resource.

Summary of Development Plan

Our overall mission is to successfully deliver the Hebron Project, and while doing 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 Hebron Development Application consists of two primary documents: the Development Plan and Benefits Plan; and several supporting documents, including the Concept Safety Analysis, the Socio-Economic Impact Statement, the Comprehensive Study Report and the Development Application Summary.

Safety is embedded throughout the Development Application because safety really is a core value to ExxonMobil and its co-adventurers. Very important to all of us that everybody who comes to work on the project, goes home at the end of the day in the same healthy condition they were in at the start of the day.

We have already begun many of our safety programs. Even before we started engineering, we working with the local community and the local contractors to share experience on safety and to outline our expectations. Our ultimate goal is that "*nobody gets hurt.*"

The Development Application summarizes the petroleum resource and the offshore platform facility. The resource was first discovered in 1980, and further exploration, in 1999, discovered Pool 1. Pool 1 is the largest of the five pools and contains a heavy crude oil, and between the five pools we estimate recovery between 660 million barrels oil to over a billion barrels of oil.

The Offshore Platform Facility consists of a GBS and the topsides. The GBS is the gravity-based structure, the concrete piece predominantly underneath the water; and the topsides consists mainly above the water with the drilling and production facilities. The GBS has a single shaft through which the wells are drilled, and the base contains 1.2 million barrels of oil storage.

The topsides facilities are sized for a production rate of 150,000 barrels of oil a day. They also include a lot of water injection because we need that water injection to be able to maintain the reservoir pressure and produce the heavy crude oil.

This slide outlines the construction plan; showing on the left-hand side of the screen, the various topsides modules: the Utilities Process Module, the Living Quarters Module, Drilling Support Module, Drilling Equipment Module and Flare Boom Module. Those pieces are all fabricated and then brought together at the integration pier at the Bull Arm construction site. While that is going on, we are building the GBS, with the base of the GBS in the dry dock, and then that's floated out around the corner to the deepwater site where we complete the concrete construction while it's in the floating phase. Once the GBS piece is complete, we'll take this entire integrated deck, consisting of all the topsides modules, and float that over on top of the GBS, and so while it's then floating we have a complete platform that is towed to the Hebron field and set down on the seabed where it sits under his own weight. It is 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. The front-end engineering and design, or FEED, commenced last year, and then earlier this year, as the Commissioner has said, we filed the Development Application, and then a few months ago we commenced the preparatory work at the Bull Arm construction site. By the end of this year, we're expecting approval of the Comprehensive Study Report, the Environmental Impact Statement, and then next year we'll be commencing detail design, and then following that we'll be expecting Development Application approval, project sanction by the co-venturers and then commencing GBS construction by the end of next year. Topsides fabrication, we plan to commence in 2013, and then we have a period of several years' construction where all the pieces come back together at the Bull Arm site for the hook-up and commissioning, leading towards our target of first oil

in 2017.

The Development Application also includes our environmental management approach and that approach is implemented through systems, policies and processes and tools consistent with ExxonMobil's Operations Integrity Management System. So the Operations Integrity Management System is around protecting people, protecting the environment. It is based on sound science and a life cycle approach so that we can move towards our objective of "Protect Tomorrow. Today."

We'll actively manage environmental risks and focus on continuous improvement. So we have a structured approach to environmental management and it starts early in the process, guided by our OIMS framework. And when I say it starts early in the process, it begins back even before concept selection. So on this slide, you can see, if you start on the left-hand side, when we're looking at various concepts that are the development of the field, we do a project specific environmental analysis. And so we look at each of the concepts and then as we move through concept selection we do our environmental and socio-economic assessments. In this case, the CSR and the socio-economic impact assessment, both part of the Development Application. From there, we're identifying and implementing mitigation measures and those measures are included in the various environmental protection plans. In this case we have an Environmental Protection Plan for the Bull arm construction site, an Environmental Protection Plan for the offshore site. Those plans include training, prevention and mitigation.

We've already commenced training at the Bull Arm construction site. It includes environmental monitoring and reporting, and also environmental and regulatory compliance assessments. As part of the OIMS process we'll be testing our systems and make sure that we are complying with the various elements of the Environmental Protection Plans.

And so all of those pieces, from the early concept selection through the high level assessments, following through on the details of the plans and then implementing those plans, assessing against those plans, all of those lead to our goal of environmental protection and our objective of "Protect Tomorrow. Today."

The Comprehensive Study Report, as I mentioned, is one of the early documents and that's included in the Development Application. And this is a lengthy process. It commenced back in 2009 when the project description was filed.

The Terms of Reference were established by the responsible authorities and the methodologies accepted by them. We held public consultation sessions in 2009 and 2010 as input to the Comprehensive Study Report that was then submitted to the C-NLOPB in June of 2010. The C-NLOPB then coordinated public reviews and regulatory reviews of the document, such that by September 2011 it was complete and ready for submission to the Minister of Environment for a decision. Then, there is a further 30-day public review that was completed

in October 2011 by the Canadian Environmental Assessment Agency, moving forward to where we anticipate a ministerial decision by yearend.

So this process, commencing way back in 2009 until the current day, has been fully transparent along every step with extensive public review, and all documents have been on the Board's website.

Also - because we wanted to mention our produced water management strategy because it has been the subject of several questions - Hebron is designed for both reinjection and marine discharge of produced water. The produced water can be re-injected when it is demonstrated that it can be accomplished without damaging the reservoir. And has been mentioned by us and some of the interveners, there are some risks associated with re-injecting the water related to reservoir souring or plugging of the reservoir. So in terms of being responsible for the development we need to make sure that we're not damaging the reservoir. So in the meantime, until we've satisfied ourselves that the produced water can be re-injected, we'll be discharging the water. And that water is to be discharged after treating with the best available technology. There are several features on the Hebron Platform that we've included, including a vessel internal electrostatic coalescer which helps separate the oil and the water. And then we have hydrocyclones that on top of that an additional stage called a compact flotation unit that will provide even more removal of any oil from the produced water. So that the marine discharge, after all that production, will be in accordance with the Board's offshore waste treatment guidelines. We'll also be discharging the water at approximately 75 meters water depth and that is below the summer thermocline.

So I will close be reiterating our commitments to successfully deliver the Hebron Platform. While doing that, we will achieve world-class levels of safety, security, health and environmental performance. We will provide substantial benefits to Newfoundland and Labrador, and we will strengthen relationships with the community, and ultimately, we'll create an offshore platform that everyone can be very proud of and it will operate safely and reliably for many years. Thank you, Commissioner.

COMMISSIONER (Miller Ayre): Thank you, Geoff. Consistent to the end; no running words together, any of that stuff. I think we don't have any significant issues this morning in the period in which we have a chance to review what arose from yesterday. We would just say that we want to thank you for your responses to questions raised to date and we look forward to the answers to some of the questions that are still outstanding. It is important to us that the tables, if we can get back something on the tables, and we fully appreciate there is a degree of accuracy issue that can never be overcome, and it would be of benefit to us in putting the final report together to be able to look at the detail that those tables might provide, regardless of any allowances we have to make and will make in dealing with the numbers.

So I don't know if you have any issues now or points you want to raise. I think we still have a way to go before we have our first presentation, but we'll just wait. We have to wait till people arrive, so we might as well take another break, but if you have something now that you You don't. So go ahead, yes.

JANET RUSSELL: Are you taking questions from the floor

COMMISSIONER (Miller Ayre): Well, did you want to make a comment now?

JANET RUSSELL: I have questions.

COMMISSIONER (Miller Ayre): Well, you can. Yes, if you want to make a comment, by all means.

JANET RUSSELL: No, it was a question.

COMMISSIONER (Miller Ayre): We have a mic right here if you want to come up, Janet.

JANET RUSSELL: Just following up from the presentation that you just gave where you said the produced water discharges would comply with the waste treatment guidelines. In the CSR there is mention of the Migratory Bird act, and I asked the question but I don't know the answer, and perhaps it's been asked earlier in the hearings, but the implication in the CSR was that you were also going to comply with the Migratory Bird act. And so my question is: If it is shown and - well, it is probably going to be two questions - because at the moment -- Well, here's the first question then. *"At the moment what is your understanding about the potential for produced water discharges to kill marine birds?"*

GEOFF PARKER: (Inaudible).

COMMISSIONER (Miller Ayre): Yes. Is that satisfactory?

JANET RUSSELL: Okay, that's Question 1. Question 2, then, is that: *"If the potential for produced water discharges to kill marine birds has not been eliminated by your methodologies, will you then be pursuing alternate treatment of those discharges to remain in compliance with your implied intent in the CSR to respect the Migratory Bird Act?"*

COMMISSIONER (Miller Ayre): Okay.

GEOFF PARKER: Yes. I certainly say we will be respecting all the regulations and every discharge we do is approved. And so that's the way it works.

JANET RUSSELL: Yes. This is a specific question to the Migratory Bird Act which states that

you cannot put things into waters frequented by migratory birds.

GEOFF PARKER: And that's approved.

JANET RUSSELL: And known to be deleterious.

GEOFF PARKER: And that's approved. And so they are approved.

JANET RUSSELL: Well, I would like to know more about that actually, whether they are actually applying the Migratory Bird act to you or, because I can't see how they can approve it.

GEOFF PARKER: Well, that's probably a question for --

COMMISSIONER (Miller Ayre): Yes.

JANET RUSSELL: Because that has been ... the no hypothesis in the past was that these were not deleterious, and I would like to know that that hypothesis has been rejected. I would like to know what the evidence is.

COMMISSIONER (Miller Ayre): Well, we'll try and get you an answer today and find out where all the responsibility lies and so on. Okay.

JANET RUSSELL: Okay, thank you.

COMMISSIONER (Miller Ayre): Thank you. We'll take a short break now then, and we'll see, we'll try to get going again around the scheduled time that we've allocated for the presentations to start.

(Nutrition Break)

COMMISSIONER (Miller Ayre): We'll call this session to order. Before I ask our clerk to introduce what will be our next presenter, I think that we had a question outstanding just before the break. And you have an answer? Okay. So I'm going to ask Geoff to provide the answer to Janet, as he has right now, and of course I want the questions to go through me. So would you carry on then, please? Thank you.

GEOFF PARKER: Yes. During the break, we went back and confirmed the statements I made earlier. The Comprehensive Study Report assessed the potential impact on bird populations. The Migratory Bird Act allows for authorized discharges and authorization will be sought under the Accord Acts through our Operations Authorization, which will include our Offshore Environmental Protection Plan.

COMMISSIONER (Miller Ayre): So thank you for that, Geoff. So I will take the question and Geoff's answer into consideration and we'll look at it during the writing of the report, and we'll get advice also from the experts that I call on to help me understand, completely understand the issue.

So now, Ed, if you'd please present, that is introduce our next presenter.

ED FORAN: Thank you, Commissioner. So we have the Newfoundland and Labrador Federation of Labour. The topic for today is regarding benefits and we had originally scheduled this for Monday but we are here today now with the document. It's been posted on our website, and speaking for the Federation of Labour is Lana Payne, who is the President. Lana.

ORAL PRESENTATIONS

LANA PAYNE: Thanks, Ed. I'm going to move in down here with you crowd. I feel like I've been here so much this week.

Geoff, I should let you know before I start and ask you for \$300 million that my daughter, who's ten, is for the last six months, she's been talking about wanting to be an engineer when she grows up. I don't think she ... and from that perspective, because she thinks it would be really cool to build stuff, but I don't think she understands that you actually could be doing a bunch of other things with an engineering degree. So I'm going to talk to her a little bit about running a big multi-national as well, although perhaps not.

GEOFF PARKER: She's welcome to come down and talk to us and be part of the Techsploration Program and all the other programs.

LANA PAYNE: Yes. I think she'd like that, actually. I might suggest it to her.

As I said on Monday, our Federation of Labour represents 25 affiliated unions, 500 union locals and 65,000 working women and men in our province, and they work in pretty much every sector of our economy, including the oil and gas sector, and this is our 75th anniversary as a federation. And in that time we've really tried to work to advance the rights of working people, including in areas, as I said on Monday, Occupational Health and Safety, but we also look to improve public services such as education, as well as enhanced public policy and laws that support our principles in the Federation of social and economic justice, including the overall wellbeing of not just our members but all citizens.

So we're pleased to be able to make this second submission to you this week regarding, in this case, the Benefits Plan being proposed by the Hebron Development. In doing so, we would like to acknowledge the assistance and expertise of Professor Travis William Fast of Laval

University who helped us with going through some of these very technical documents.

For the first time in our history since joining the Canadian Federation, we are now a have province. For the first time, indeed, in our history, we are now looking ahead to opportunities to not only sustain our province and the wellbeing of our people with the correct public policy decisions obviously, but opportunities to grow and prosper in ways we have yet to conceive of.

Yet, as we contemplate these possibilities, too often our language and our actions indicate that we are still using traditional lenses to define our real potential in Newfoundland and Labrador. For example, our focus on ensuring our major projects such as Hebron include prerequisite clauses with respect to providing employment and business opportunities to local Newfoundlanders and Labradorians are necessary and essential but I think we must take this a step further.

It is the position of our federation that we must rethink and broaden our definition of "benefit" in this new prosperous environment. There is little doubt that the development of our offshore oil and gas sector has been a remarkable achievement for our province, and indeed for Canada.

The Atlantic Accord, signed in 1985, over 26 years ago, was a significant milestone for our province that delivered a message of hope and new potential for our future.

The core principles of that Accord are sound and have been incorporated in all our major project development. One of the central aims of the Accord, as you know, as outlined in Section 2, is to ensure that the pace and manner of development optimize the social and economic benefits to Canada as a whole and to Newfoundland and Labrador in particular.

A quarter of a century later, it is now time to challenge our thinking and our interpretation of social and economic benefit. Thus our objective in making this submission to you today with respect to the Benefits Plan is to encourage that the maximum practical economic and social benefits from a project the size of Hebron flow to the citizens of our province as mandated under the terms of the Accord.

It is worth mentioning that Hebron represents the most recent of our major project development agreement. The project was announced on August 20th, 2008. At that time, then Premier Danny Williams was quoted as saying, *"Hebron is a breakthrough agreement for the province and this is a day that all Newfoundlanders and Labradorians can take pride in and celebrate. The signing of this agreement reflects a bold new era of partnership between government and our industry partners. We have real and meaningful ownership of our resources in the form of an equity stake in this project and a new super royalty regime. We have achieved significant commitments for local benefits for fabrication and engineering and are now embarking on a major industrial project that will fill our fabrication yards and employ*

thousands of Newfoundlanders and Labradorians. This marks," he said, "our emergence as a full participant in the global energy stage, and we are pleased to join with our industry co-venturers in the commencement of this project."

Although milestones were indeed achieved with the Hebron Agreement with respect to previous agreements, it is worth noting that in jurisdictions like Denmark and Norway, the government's after take, after-the-cost take, is considerably higher than what it is in Newfoundland and Labrador. Even with the improved terms negotiated in the Hebron Agreement, it appears the best the Governments of Canada and Newfoundland and Labrador will receive is around 35 percent of the after-cost take.

It should also be pointed out for context that the Government of Norway, in virtue of its 67 percent ownership of Statoil, has a higher direct equity stake in the Hebron Project than the Government of Newfoundland and Labrador, as a result of Nalcor's 4.9 percent equity share. So while it is true that this agreement is better than that achieved, for example, for the Hibernia Project, when systematic comparisons are made with other national jurisdictions, the fiscal regime negotiated for Hebron is still not where we think we need to be.

It is rather more of a positive step in the direction of improving royalty regimes for our province. Certainly Norway is one model to follow and our federation expects that Nalcor, as a public energy corporation, should and will play a significant role in how we improve upon royalty regimes in future. Nalcor has, as you know, been tasked with exercising appropriate control over the development of our resources to ensure they are managed and used in the best interest of the people of Newfoundland and Labrador, and that it will assume an ownership interest in the development of our energy resources where it fits our strategic long-term objectives.

However, in the Terms of Reference for this review it is specifically stated, as the Commissioner said this morning, that the fiscal regime does not fall under its mandate. Therefore, given the Terms of Reference and thus the Commission's inability to alter or make recommendations with respect to the current fiscal royalty regime, it is our opinion that it is necessary to ensure that a maximum possible commitment is undertaken by the Proponents in the Hebron Benefits Plan, and we have some suggestions.

We would like to maximize the direct economic benefits in terms of local employment and contracting; maximize medium to long-term benefits of the Hebron Project by instituting a technology transfer and a training regime to ensure that the local and domestic oil and gas sector expand their capacity and technical capabilities, and I think this was referenced by NOIA when they presented earlier to you; ensure that the direct and indirect benefits are spread out in the most diverse practical manner, both in terms of geography and gender; establish an advisory committee between the Proponents, government, the supply and service contractors, the building trades unions and the Federation of Labour, among others, to encourage social

dialogue on all matters with respect to industrial relations and human resource management; minimize the negative impacts generated by the project, for example, with respect to inflation generated by such large economic projects and the cost of living, most notably on housing, and if anyone heard the news this morning, you're probably aware of what's happening in Lab West now in terms of, yes, we have good things happening on the economic side but on the housing side it's causing some serious, serious challenges for the citizens of that community, of those communities; establish where practicable maximum performance targets and minimum thresholds with respect to the specific objectives outlined in the Benefits Plan; and promote to the greatest possible degree the transparent, accurate and timely, hopefully annual public dissemination of information as it relates to specific objectives outlined in the Benefits Plan.

It is our contention that although this amounts to an ambitious agenda, we can in fact achieve these measures in the context of the existing Hebron agreement. For example, in the Hebron Benefits Plan under Section 3, it is noted that human resources planning for the project will continue to be developed and refined over the life of the project, currently estimated to be more than 30 years. Given this long duration and the fact that the project is in the early stages of development, this plan does not provide a description of all of the human resource initiatives that will be used.

The Benefits Plan is therefore suitably abstract enough to allow for creative innovation in finding ways to maximize the economic and social benefits flowing from the Hebron Project. Additionally, the specific clauses and definitions in the agreement and the Benefits Plan referencing employment benefits, research and development and education and training leave plenty of latitude to create new opportunities and to maximize benefits into the future.

Not that long ago this province was on the, really the precipice of a devastating economic depression that followed us well into the late 1990s and early years of this past decade. At the start of this period, young people, those under 20 years of age, represented 36 percent of our population. Our core working age population, those between 20 and 64 years of age, represented about 56 percent of the population. Weak economic conditions, including the closure of most of the Newfoundland and Labrador fishing industry, led to a mass out-migration from the province, especially among young workers and their families, as well as unprecedented levels of local unemployment as a result. In this environment, the concept of negotiating major project agreements that include core employment benefits for our people was critical.

Today our environment is very different. We have been witnessing some of the benefits of economic prosperity. For example, employment levels have risen to record highs in our province. We have also witnessed the emergence of other social economic impacts such as growing income inequalities that have plagued other prosperous jurisdictions for some time. Currently levels of unemployment still indicate that requirements for core employment benefits are essential in major project agreements, but the emergence of these other

unintended consequences of economic development suggest that we need to rethink and redefine our interpretation of benefits.

If this alone is not argument enough, we should strategically reflect on broader forces, particularly the demographic trends that are and will continue to impact most developed economies. Since 1986, our population has declined by 11 percent. In this number we have seen a 67 percent reduction in our youth population, while our senior population, 65 and over -- that doesn't seem that senior these days though, does it -- that's because you're getting closer to it, I suspect -- has grown by 50 percent in that time frame to now represent nearly 16 percent of our population compared to just 8.7 percent in 1985. Looking ahead, these trends will continue.

The Hebron Agreement cites a 30-year benefit regime for its operations here in the province. I hope it will be much longer. According to the report to this commission by Dr. Wade Locke, the project will generate about \$75 billion in revenue, not including your third pool. Of those revenues, about 20 billion will be paid in royalties and taxes which will flow to the province. Capital and operating costs, if my math is right, probably not as good as my ten-year-old's math, will be about 14 to \$20 billion leaving a healthy and robust \$35 billion and change - billion dollars, I should say, and change.

So looking ahead to just 2025, 14 years away, we will see further structural shifts in our population that pose significant social-economic implications, not just for our whole society but for an employer such as you, operating in our province. By 2025, seniors will represent about 25 percent of our population, and youth, those under the age of 20, will make up just 20 percent of our population. Within our core working age population of 20 to 64 year olds, the vast majority of workers by this time will be over the age of 45, 53 percent, compared to just 28 percent in 1986.

This past July, the provincial government released Outlook 2020, that provided a forecast of 70,000 job openings over the next decade. We know that that forecast was outdated almost as soon as it was released, given other mining developments and potential projects that have since come on stream or have been announced, thereby increasing job demands for the future. We do not have to be economists to consider the social-economic implications of these demographic trends for our society and for players like the Hebron Proponents in Newfoundland and Labrador.

These trends hold implications for all of us, including, but not limited to, potential labour or skill shortages, increasing tax burdens for working age people to support an increasingly dependent population of seniors and escalating health costs. As an employer and a member of our community, these issues must also be a concern for you as well.

We cannot avoid or fully stop these demographic trends but we do have the power to implement measures that can significantly help mitigate the impact, and our federation

contends that we can in fact achieve some of these measures in context of the existing Hebron Agreement, given the commitment to human resource planning for the 30 years of the project.

The oil and gas sector directly contributes about 40 percent to the total provincial GDP, but about 4 percent of provincial employment. What this means is that it is imperative that every single possibility of local employment be exploited with respect to contracting employment. While the Benefits Plan does hold this out as one of its broad goals, it sets a very low threshold for employment commitment. The Commission's own outside expert acknowledges that Hebron will generate less provincial capital spending and in the case of local employment, less so than Hibernia did.

Indeed with Hibernia, 66 percent of the project's employment occurred in the province whereas in the case of Hebron I think your outside expert said it's been estimated that the employment share will be around 40 percent.

In their written submission to the Commission, the Newfoundland and Labrador Oil and Gas Industries Association has already made a significant contribution to analyzing the ways and means through which the percentage of capital spending, contracting and employment in Newfoundland and Labrador can be increased, and we support the general thrust of their analysis.

Demanding the expansion of local capital expenditure of the maximum contracting of supply and service providers and the maximum level of employment requires that full thought be given to a robust technology transfer, and, in our case, what we'll be proposing here today, training regime.

Outside of some modest proposals for enhancing local skills and knowledge, the Benefits Plan is short on specifics. For example, most of the R&D expenditure is in the form of a grant of \$1 million - this is respect to skills - to the higher education sector. And I do understand that the Proponent has also made some indication of providing scholarships. While this is no doubt very welcome by the post-secondary sector, we question whether the sum and the target are sufficient.

In our view, technology transfer and skills development are extremely important and must be given a much higher priority than the \$1 million grant would indicate, particularly with the skill section. We propose that we need a more serious investment in human capital. In short, the Benefits Plan lacks a coordinated approach to expanding both the skills base and the capacity base of the local economy. At the very least, resources from this project must be deployed to ensure that there is a net positive expansion in the skills and capacity base of the province for the future needs of not just this project but projects to come.

As such, we would like to see a serious commitment on the part of the Proponents to what we

are proposing, a training, skills and social development fund, which would be accessible to existing workers in the industry, those that require retraining or up-skilling, those new to the labour force, and to be invested as well in the critical early years in the form of early childhood education, thus enhancing the social benefits of this project.

To that end, we would like to see the Proponents commit to and establish a 250-million-dollar skills, training and social development fund. While this may seem like an onerous amount, it will represent only 1.25 percent of the total value of the Hebron Project to the province and it is a one-off expense that will self-fund going forward. In other words, the gift that keeps on giving.

We should also like to note that both government and industry have demonstrated serious concern over possible pending labour and skills shortages. The government's own publication, as I had mentioned, Outlook 2020, is projecting at least 70,000 job openings over the next decade and all in the context of these demographic headwinds that I've mentioned.

Clearly the Proponents, as major employers in our province, must aid in the attraction, retention and retraining of the provincial labour force. In fact, it is to your benefit if you do.

The Skills, Training and Social Development Endowment Fund should be structured as follows: 30 percent to be designated to the university sector, in particular but not limited to the engineering and related applied sciences, which service the sector, for example, funding might be used to enhance those sectors that study the impacts of the oil and gas sector on the environment or society; 40 percent to be designated to retraining and apprenticeship and technical programs which are relevant to the skill profile existing and future of the oil and gas sector; 30 percent to be invested in early learning and childhood education and child care.

With these funding supports in place, it will ensure that the local labour supply and existing human capital have the capacity to absorb the demands being placed on it in the future. The Endowment Fund should minimally be managed as follows: A board of directors drawn from the government, the university and college sector, the trades unions, perhaps our federation as well, NOIA, the Proponents and representatives from the community, NGOs, including the students federation. Such a structure will ensure that the flow of funds generated from the Endowment Fund are focused on human capital formation where it is most needed. We have included the early years for obvious reasons. The multitude of international evidence confirms the need to invest in early childhood education and a substantial benefit to the economy and to industry when this is undertaken.

In addition, I would suggest it would meet one of the barriers that you are also trying to knock down in terms of trying to expand the number of women that get employment in this sector. Certainly access to high quality and affordable education and childcare for their children is one of those barriers.

As I already mentioned, although the oil sector accounts for a significant proportion of our GDP, it accounts for little direct employment at this point. Given these facts, it behooves the review commission to make sure the economic benefits are as regionally and socially dispersed as practicable, and I believe you heard about this from the Provincial Advisory Council on the Status of Women on Monday, and we would support the recommendations that they're making.

We would, however, like to stress the fact that the same arguments might hold true in terms of ethnic and geographical representation. Rural Newfoundland and Labrador is often the site of resource extraction but maybe only a minor beneficiary. We would note that the existing Benefits Plan explicitly steers clear of any responsibility for ensuring secondary processing takes place in the province.

To our mind, this is not appropriately forward thinking. The oil and gas industry is a close cousin to the petrochemical industry. Indeed, the corporate websites of the Proponents list an impressive range of secondary processing activities that they have as going concerns in their daily operation. As such, we think it would be appropriate and suitable that the Proponents draw up a firm list of what secondary processing facilities can be located in Newfoundland and Labrador, and in which might be situated in regionally marginalized communities and we would leave those decisions obviously up to you.

By undertaking such a commitment, the Proponent will also further the objective of maximizing the direct economic benefits for the duration of the project, maximize the medium and long-term benefits and you would play a considerable role in the modernization of our regional economy, all of which are objectives to which the Proponents have abstractly pledged themselves to do in the Benefits Plan.

We recommend the establishment of an advisory committee as well with representation from the Proponent, government, the supply and service contractors, the unions, on matters with respect to HR management and industrial relations, as mentioned at the beginning of my presentation.

Projects of this size generate a series of social-economic and environmental impacts, both positive and negative. In general we would like to see the Proponents develop a robust program for monitoring and reducing the negative impacts generated by the project. The most obvious negative impacts concern the physical environment.

In projects such as this though, there are also negative social-economic impacts. As the sector makes a positive contribution in both the general level of average annual salaries from both the direct salaries it pays and those generated indirectly, it may in that regard contribute to income inequality, inadvertently.

While we are cognizant of the fact that the income tax and transfer regime, the fiscal policy, is the relative mechanism for addressing such concerns, we think the Proponents nonetheless have some role to play in mitigating some of these negative impacts. Specifically it is our view that Proponents should invest \$50 million over the next ten years in low fixed income and cooperative housing projects, in regions with low vacancy rates such as St. John's or regions close to the construction phase. We would see the Proponents working in collaboration with the Newfoundland and Labrador Housing Corporation and community social housing organizations with an aim of creating affordable housing.

The Proponents should promote to the greatest possible degree the transparent, accurate and timely, and hopefully annual public dissemination of information as it relates to the specific objectives outlined in your Benefits Plan. To that end, perhaps we could be holding on an annual basis a Hebron public accountability forum.

In conclusion, I would say one of the specifically stated goals of the government of our province is to ensure that specific policies undertaken which contribute to the long-term socio-economic development of our province contribute to the rational development of the province's long-term goals. In particular, in the Energy Plan, under the heading of Sustainable Economic Development, one of three major objectives of the government is to develop our energy resources to help meet our social and economic responsibilities.

We will reinvest the value we receive from our energy sector to secure our prosperity today and for future generations. We will ensure energy developments capitalize on our competitive advantages, our people, our industrial infrastructure, our geographic location and our political stability. To that end, our submission makes a series of recommendations which we think will ensure that the Proponents are making their own contribution to the goals of the province and its people.

We would further note that although the Hebron Agreement is an improvement, as I've said, over previous offshore oil agreements, it is, however, marginally worse in terms of capital spending and local employment. The recommendations contained within this document and our submission seeks to improve on those shortcomings. And while it is true that the proposed Training, Skills and Social Development Endowment Fund and the affordable housing initiative will represent significant contribution on the part of the Proponents, they will, in total, amount to 1.5 percent of the total value of the Hebron Project to our province. When this is compared to what the Proponents would be paying if they were to undertake such a project in Denmark or Norway, given their fiscal regimes, the additional responsibilities recommended by us in this document are indeed not what we would call that onerous. It is our hope, and in line, perhaps, with the thinking of Adam Smith - not someone I quote often - that the Proponents and the Commission will receive these recommendations within the spirit of enlightened self-interest. Thank you.

COMMISSIONER (Miller Ayre): Thank you, Lana. And I guess A dam Smith's invisible hand is not sure what to do with itself at the moment.

LANA PAYNE: It is just \$300 million.

COMMISSIONER (Miller Ayre): Gone straight to his pocket. Well, first I'd like to thank you for what is clearly a well thought out, well conceived and well presented document. And I note your reference to NOIA and other presenters, and I would say that in the context of many of the presentations we've You can sit down for a moment. I am going to wack the elephant for a minute or two here, okay, give you a chance to, and then we'll get to questions in a minute.

I think we've heard a lot of presentations during this session that have looked to make new ground and, in particular, have indicated willingness to work together with groups, who in the past, you wouldn't have expected to hear such offers of cooperation. And where the maturity of the industry itself is, on the local grounds at least, is showing that merely stating some diverse opinion or position at a set of hearings like this has now changed dramatically to looking at methodology to alter the reality in the context of what they believe to be best for the province and looking at ways to forward the manner in which the government deals with issues here. What traction there is in this regard will remain to be seen how well people can work together as they go forward.

I would also just like to make a couple of comments. We've referenced the Norwegian model a number of times, and perhaps I've done it more often than others, and I think the Commission has certainly looked at this issue internally, and there is much need to understand and to perhaps have the Commission in its report make clear how the Norwegian model works, and so that when we reference bits and pieces of it we have it in better context. I think it behooves all of us to understand it more clearly.

I mean, there are significant differences between the way the oil industry works here and the Norwegian model, and simple illustrations that we've been referring to are perhaps a disservice to some extent to the process of moving forward with changes here because we really have to understand the full implications.

There is a significantly different fiscal regime in Norway, just as there was here when the BIP grant allowances were in place. The oil field risks are different. The construct in the field is different, including major in-place flow lines and so on. And the actual fiscal reality for the oil companies changes dramatically based on their ability to write off exploration costs that cannot be written off in the context of the Newfoundland or the Canadian reality. And so there are lots of things we need to look at. It doesn't mean the model isn't something we can learn a lot from, it just means that sometimes we look at a specific part and it doesn't reflect

the full picture. And it's ironic that the Norway was also brought up. On the one hand, we hear about it in the context of how much less the oil company takes from its opportunity relative to here. In Norway, on the other hand, the exploration rate in Norway is, as many referenced, much higher than it is here. There is much more take-up. So obviously, certain risk factors and other issues must be at play. So this is something we have to understand for fully, and this is not in the context of Lana's presentation. It is in the context of the fact that we've referenced this a lot. I think it is something all of us need to learn a little bit more about.

I do agree with Lana's understanding of the way to proceed on some of these issues, and it fits the notion that sometimes you're better off not to concentrate on maximizing within the constraints but to go straight up the constraint and kick it as far out of the way as you can. And I think that thinking has pervaded a number of presentations, and I think that the Federation of Labor has certainly led the field in trying to think in a dramatically different way.

And so in that context, now that you've opened the door and suggested that I may enter the no-go, no-entry zone, and we'll do it through the route you said. I'm more than happy to discuss some of the things you have in your presentation.

Can you comment a little bit on how you arrived at the particular numbers and what the thought process was? Did you say, were you looking at it in the context of one percent or one and a half percent?

LANA PAYNE: Well, we were trying to keep it under two percent. And I think the thought being if you looked at the total value, which I think is raised in Dr. Locke's report to the Commission, he talks about the project being worth \$20 billion. So we worked with that number and figured what's one percent of \$20 billion and then from there, but also thinking that this would be invested. So you're not spending \$250 million in one year. You have an endowment fund there. So based on the rate of return you might invest 12 to 15 million dollars in skills and early learning on an annual basis, and it would be there to meet the needs. So in 15 years from now, the training and skills needs, the human resource needs may be something entirely different than what we think it is today. So it was really trying, I think, from our perspective, to push the benefits argument, what do we mean by benefits and to have the Proponent involved in a bigger way, I think, in this notion of up-skilling and resource training people for the sector.

COMMISSIONER (Miller Ayre): Did you see any of this funding replacing what is a very significant spend in the R&D area? Is it related to that at all?

LANA PAYNE: Yes. The problem, that's the \$120 million that's mentioned in the Benefit Agreement.

COMMISSIONER (Miller Ayre): Yes.

LANA PAYNE: And then I think Dr. Locke says that it will be around 200 million.

COMMISSIONER (Miller Ayre): Yes.

LANA PAYNE: The problem with that is that most of that is research and development. It is not geared towards skills enhancement. I mean, I know I've heard some discussion about scholarships and then the one million dollars, the only target of that, that we could see, going towards education and training from the perspective that we're talking about was the one-million-dollar grant to the postsecondary system, and then the mention on Monday that I saw of scholarships that the Proponent would be doing. But I think what this does is it takes it to a different level. It says that we're going to be involved in a big way in addressing our human resource needs which they have identified in their agreement, as I mentioned in our presentation in section 3, in their Benefits Plan, that this is something that they'll be undertaking over a 30-year period. So this is a suggestion of how we might get there and help with that.

COMMISSIONER (Miller Ayre): I don't think there is any limit on education and training within the R&D envelope, as I understand it.

LANA PAYNE: But it is not clear from the plan that it would be used that way.

COMMISSIONER (Miller Ayre): Yes.

LANA PAYNE: Yes.

COMMISSIONER (Miller Ayre): But it was added because in the normal R&D envelope education and training is not included but it is here in the definition that's used in this plan.

LANA PAYNE: Right.

COMMISSIONER (Miller Ayre): I also was talking to you a little bit about the issue that we sometimes have to face in benefits with regard to whether the benefits are a trade-off, a simple trade-off against royalties and so on. But in looking at the full definitions of whether this expenditure would result in a change in royalties or could be allocated to the process in which the royalties are calculated, I don't believe what you're requesting would qualify as an expense that would qualify to reduce royalties or to be used in the royalty calculation. The expenses that get used in the calculation of royalties have to be expenses that are directly related to the actual project itself in a direct way.

LANA PAYNE: Right. Yes.

COMMISSIONER (Miller Ayre): So, this is not something where your suggestion becomes one in which this advisory committee, which you could tell me a little bit more about in a moment, but it's not a suggestion in which an advisory committee of an outside group gets a hunk of what would normally be royalties, and, therefore, is in a position outside of government to deal with funding.

LANA PAYNE: Right.

COMMISSIONER (Miller Ayre): It becomes a complete add-on in general expenses of the Proponent.

LANA PAYNE: Yes.

COMMISSIONER (Miller Ayre): And you might just tell me a little bit about the committee, because we've had suggestions of other tripartite committees in other concepts that were suggested at the time during the time that we've been here over the last few weeks. So if you could just elaborate on your committee a little bit.

LANA PAYNE: Well, we have, in the province, already a pretty high level tripartite forum, social dialogue forum called the Strategic Partnership Council, and Dr. Doug House, actually, is chair of that council, and it operates exactly like this. So the parties come together and they make decisions. Now we don't have a \$250 million endowment fund to deliver, but it would operate in the same way that. And this provides, I think, an open discussion around what it is we should be funding in terms of the skills needs, and I would suggest having government there and their labor market division is very helpful in that because they have very good information on where the demands are going to be and where the push-pull kind of factors will be in terms of that and where we might go to seek labor, which I also think is part of the discussion that can take place there.

But it is just kind of elevating the fact that I think in any kind of situation like this that our experience is that a tripartite system does work and it does force the parties to have a discussion around meeting the broader kind of goals. I think that's an important thing to do.

For your information, the Strategic Partnership Council also has five subcommittees, and one of those subcommittees is a labor market committee that deals with many of the issues that we've raised here around up-skilling and education, where the skill gaps will be. So it would be bringing that kind of discussion to this advisory committee.

COMMISSIONER (Miller Ayre): Lana, you're aware, as we all are, that there is a Benefits Agreement, quite apart from the Benefits Plan, that has been incorporated into this particular project, and I don't know if you have any comments to make about that. It's something that

doesn't exist in other aspects of, well, in other projects it wasn't in place.

LANA PAYNE: Yes. No, I mean, I think what we've analyzed for our purposes here is, and for the review process, is what's been in the Benefits Plan and how we might put some real teeth in the words that are there, because I think that there are some good commitments made by the Proponent in the Benefits Plan. What we're trying to say is here is way that we might be able to action some of those commitments, and as a large corporate citizen in our province, and, hopefully, as I said in my presentation, one that will be here a lot longer than 30 years. I think we're at a point where we need to have all the players at the table to be discussing some of these challenges, particularly around skills and labor shortages, and employers definitely have a role to play there. And I don't think it is enough to be able to say, well, this should be traditionally covered off in the royalties that we pay or in the taxes that we pay. I think that there is a sense that the employers not only in our own province but around the world are engaged in a different way around skilling and training and being part of human resource planning outside of what we would have as a social policy from the government.

COMMISSIONER (Miller Ayre): And have you found any creative ways that the burden of this number might be assisted by projects already in place that might in fact make it more likely to be a reality?

LANA PAYNE: You mean in terms of the training that's already done in our province?

COMMISSIONER (Miller Ayre): No, I mean in the fact that as a general statement there are other, there is Hibernia, there is White Rose, there are other people who are already working in the province who are taking their share of what was established at that time. And I just didn't know if you were expecting all of these funds to come directly from the Proponent and the partners in this project.

LANA PAYNE: Well, I think we were told very clearly in the provincial election that we can't go backwards and try and renegotiate some of these deals. So this is about going forward and setting a new

COMMISSIONER (Miller Ayre): I think anyone could tell you anything.

LANA PAYNE: Well, no, they can't, but I mean that certainly was the message that we received, I think, from the premier is that you can't go back and open up these agreements. And I think what this agreement has done is said we're going to take things to a different level. We've done that obviously with the super royalties and the equity stake, and so what we're saying is that as we go forward, these are also the things we need to consider in new agreements. That's the point, I think.

COMMISSIONER (Miller Ayre): Geoff, I'm not sure what question to ask you, but I don't think

a simple "yes" is going to be the answer to any of them. So, but I would like ... I am sure you've looked at Lana's presentation and would like to have a comment or two.

GEOFF PARKER: I think you summarized the issues well, Commissioner. As I said before, the Hebron Project will result in tremendous benefits for everyone in the province. And as you said, the benefits need to be looked at as an overall package. It is a bit hard to just pick one bit because it might be something that comes out of the other, and so to me that overall complete package is what everybody agreed to when they signed the Benefits Agreement. I think it is a good deal for everybody in the province.

I think a lot of what we're talking about is, throughout these reviews, is what is the best plan for the Hebron Project, and to me the best plan will result in a safe project and it will protect the environment. That's clear and everybody has been very aligned on that. The plan also has to balance the interests of all the stakeholders in the project and the plan needs to be economic. That's a reality; that for the co-venturers to sanction the project, it does need to be economic so that it can proceed and provide these tremendous benefits that we've talked about.

So I agree that comparisons to other regimes are not appropriate. We need to look at what the situation is here, the risks here, the costs here, and we need to come up with a good project that then the co-venturers can sanction.

COMMISSIONER (Miller Ayre): Well, I mean, we're not going to agree here today and it is going to be my job to say something about this.

LANA PAYNE: I suppose if it was

COMMISSIONER (Miller Ayre): We can agree or be scorn or otherwise later on certainly somebody or other. But, and I really do want to thank you for the work you've put in on this.

LANA PAYNE: Thanks.

COMMISSIONER (Miller Ayre): And we will certainly be taking everything under advisement and seeing how we can advance things.

LANA PAYNE: Great. Thanks so much.

COMMISSIONER (Miller Ayre): Thank you.

GEOFF PARKER: Thanks, Lana. And I think this is a great province for a ten-year-old girl to be growing up in.

COMMISSIONER (Miller Ayre): Me, too.

GEOFF PARKER: You hear the energy around gender equity in the last few weeks and the look at the programs available, I wish my three daughters had had the same opportunities. It's great.

LANA PAYNE: Thanks so much.

ED FORAN: So we'll take a brief break and then at 11 o'clock we have Nature NL. So we have a few minutes now while that presentation gets ready as such. So again, we'll resume in about ten minutes. Thank you.

(Nutrition Break)

COMMISSIONER (Miller Ayre): Okay folks. We're ready to go, I think. All right. I know we're ready to go. I'm not just thinking about it. So, I'll ask our Clerk to introduce the last presenter for the Public Hearings for the Hebron Project.

ED FORAN: And that is quite an accomplishment in that we've had 11 days of hearings. Eleven days of very interesting well-thought-out presentations, and I'm sure this one from Nature Newfoundland and Labrador will be no less. And speaking for them today is Dr. Len Zedel, and Len, please proceed.

LEN ZEDEL: Thank you. Thank you for the opportunity to present.

My name is Len Zedel. In my day job, I'm a professor at the university in physics and physical oceanography. My background area is physical oceanography, and in particular, underwater acoustics and you'll, for better or worse, get that flavour as I go through this presentation.

A bit of my background apropos this context is, I've worked as a student for a period of time as a reservoir engineer which I find a valuable background on these issues.

I worked for the Commonwealth Scientific and Industrial Research Organization for several years in Australia.

I have, I would say, significant sea-going experience, so I understand the issues of being at sea.

I've always had an interest in environmental issues, sustainability, which kind of brings me here, and I've been involved with the Natural History Society, which is the precursor to Nature Newfoundland and Labrador for about 20 years in various capacities as President and every imaginable office. So, that's my personal background.

Nature Newfoundland Labrador is a traditional natural history society active in the province since 1910 with various labels, a Nature Canada affiliate. The purpose of the society is to promote appreciation for environmental issues. In that capacity, it hosts monthly meetings, publishes a quarterly journal, The Osprey. It has about a hundred members, which kind of shifts around.

It's not primarily an environmental activist group, I would say, but the group does make submission to government on issues of significance, and certainly offshore oil development falls in that category.

Previously, the Nature Newfoundland and Labrador has been involved in reviewing both the White Rose and Terra Nova Projects in some detail.

So, the first thing I want to start off with, having read several of these reports over the years, and I believe this one came in at a thousand pages, it was organized very well, and I appreciated that. It was easy to navigate through and find sections I was interested in. And there's a lot of people that go into putting these things together, and maybe that's a statement for the evolution of these studies and reports, but I recognize that and appreciate it. It made my job, as reviewing it, much easier. So, that was good.

Not so good. I was frustrated, and I've heard it come up before in a couple of the other presentations that I was fortunate enough to hear, is that some of the details were deferred after the feed front end engineering design, and I just gave an example there.

And all I could take from that is that a concern has been identified, perhaps the scale of it, well, metered, but the response, I can't judge, and perhaps the Proponent doesn't really know quite how they're going to deal with it yet, but it did make evaluating the Project difficult. I don't know if there's a solution to that problem.

More of a specific gripe for me was, like, I was, Table 5.2 was a rosetta stone for me for the presentation because I could say, okay, what are the issues. Okay, where did they deal with it? And I was a little disappointed sometimes in what I would find because this is a pet issue for me and I certainly didn't have time to sort of leaf through all of the issues, but one of my desires would be to see 24-hour real time data on discharge monitoring information. And so, that was noted in the report, and it says go to Chapter 15 to go see that, so I read Chapter 15 and I couldn't find anything about making these reports available in a timely fashion publicly. So, at least my issues have been heard, but I'm not sure if they've been responded to.

Project Need. It's not really a big issue for me, but it did catch me a little bit off guard when I was reading the document. The impression I got from the document was that the Project need was for the economic benefit of Newfoundland and Labrador, and I don't want to deny that there is and that that's a factor in all this. But the need for the project, in my mind, is the

fact that our society, our culture depends on available energy and lots of it. We're energy hogs for transportation, agriculture, industry, heating, plastics. Everything revolves around the availability of primarily fossil fuel energy.

So, I thought that that should be made quite clear, and ultimately, any benefits of this project have to be balanced against an environmental impact. And the day will come when these projects don't pass mustard on environmental impact, that we will have some other source of energy, and we won't be addicted to oil, but for now, this is the reality and that is ultimately in my mind, the justification for the project.

The biggest sort of operational discharge by far of a project, offshore oil development is produced water. The Hebron Project projects 366 million cubic metres of this waste stream. And I tried to fit that into a physical perspective. It's a cube 700 metres along the edge, so you can sort of think, in my mind I can see a big blob of jelly sitting there, produced water. It's 30 times the volume of St. John's Harbour. That's the amount of produced water that will be discharged. And in that produced water will be about 13,000 cubic metres of oil, the residual oil that can't be removed or 80,000 barrels.

I smile, when I saw that Hebron proposed to re-inject this. And that is just so excellent because it is the best place for that waste stream because it keeps it out of the environment.

But I want to caution that in assessing environmental impact of this project, because the industry can't, with some good reason, can't commit to this eventual path, the assessment has to be made on the assumption it won't be re-injected. And, furthermore, something I would really appreciate is to know what criteria are going to be used to decide when that day comes, when they do know what the reservoir chemistry is like, when they do know what the consequences of reinjection are, I'd like to know what the decision basis is going to be.

Because there will be a cost associated with this to the industry potentially. There'll be a cost to the reservoir in terms of recoverable oil. And what costs are we prepared to accept or is the industry prepared to accept in making that decision relative to the significant benefit to the environment. I'd like that up front first because otherwise, it's really hard to judge whether, how that decision will be made. I'm not even sure who will make that decision.

Okay. I'm going to ignore reinjection for a moment, although I do acknowledge the intent of the Proponent to use that route.

The regulations for produced water are rather woolly. 30 milligrams per litre average oil in water with a 44 milligram per litre max on a 24-hour average. And the reason for that regulation that is so woolly, is that can be reasonably achieved with the technical abilities available today.

Now, by comparison, and this is what kind of really grates me, deck drainage and bilge must be, the regulations are that they have to be reduced to a level of 15 milligrams per litre average oil in water. That's a marine pollution international regulation. Now, that's a fraction of the volume of the produced water, and like, so why 15 milligrams per litre for bilge and 30 milligrams per litre for produced water? The issue ultimately is that this regulation is not based on environmental impact, and it hasn't accounted for the consequences of discharge water, whether it's acceptable or not in an environmental sense. It's simply what's technically available, and I don't think that's environmentally defensible.

With regards to produced water, the monitoring programs in place have proven inadequate. They've been based on ocean, like, sampling of ocean water, perhaps once a year. If you consider how waste stream might enter the water, it's quite possible that you don't actually sample the waste sample if you just go out and take a sample.

The residual oil in that produced water, if high, could have the potential to create a slick, which would impact seabirds. So, it's a concern. And the reason for the woolly regulation is because treatment of that water is difficult. It states in the CSR that there's irregularities. There might be upset conditions, which would lead to higher levels of oil and water.

So, my recommendation here would be that why are we trying to monitor this produced water, kind of, in the ocean. Like, yes, we should do that. Yes, we should consider that problem, but it makes more sense to monitor the content of that produced water at the source, where you can actually sample it effectively.

Accidental spills are a reality, and the C-NLOPB reports these with unbelievable accuracy. I actually question it; for instance, 62.83 litres in spills of less than 1 litre.

When I spill oil when I'm putting oil in the car, in the lawn mower, I don't know if it's, like, 1 millilitres or 10 millilitres, but that's okay.

I think that reporting these spills is very valuable. It's valuable for safety. It's valuable for identifying where there are problems, so I recognize that, and I think it's valuable. And I'm sure the industry takes this information and works with it and uses it to do a better job.

But there's no effective quantification of the environmental impact just by recording these quantities and is kind of a lead-me-on to independent observers in a little bit.

Tsunami risk.: I'm sorry I love tsunamis, and as an oceanographer, the physics involved, that just got me going here. So, I'm apologizing, but I'm still going to cover it.

The report states that there's not a lot of seismic -- well tsunami risk is evaluated as low because, first of all, there's not a lot of seismicity around Newfoundland, the Atlantic coast. In

fact, there's only one historic tsunami kind of recorded in 1929 in Burin Peninsula, and it's not actually clear what that was directly caused by an earth quake or actually the subsequent turbidity current that it set off.

And furthermore, Bull Arm is well inshore, and Bull Arm is obviously the most at risk with regards to tsunami impact. I'm just going to hit on these issues one at a time. It's true there's not a lot of seismicity in the Newfoundland Region, but with tsunamis, it's not the local region is always the issue, and I cite the 2004 Indian Ocean Tsunami which impacted shorelines all around the Indian Ocean.

So, when you talk about tsunamis, you really have to consider them in the context of the entire Atlantic. Okay. There's not a lot of seismicity in the Atlantic Ocean, but a tsunami is not always caused by earthquakes. They can be caused by mudslides, landslides into the ocean, all manner of things. And to bring this kind of home, by chance, fast moving storms travelling along the Grand Banks, typically in the fall, these are like the post tropical storms, have the ability to make tsunamis-like waves that propagate and impact the Newfoundland coastline.

Back in '99 and 2000, like, two years in a row, we had these events occurring on the coast. I remember a spectacular video of this wave running up into Petty Harbour. So, these possible sources of tsunamis, and there are a lot, should be taken into account.

And the last thing, Bull Arm is well inshore. Yes, it is well inshore, but tsunamis can travel up channels and can excite resonant responses. And, as an example, 1964 was a tsunami on the coast of BC, and Port Alberni is a small town at the end of a 50 kilometre long inlet, and it got hammered by this tsunami. So, just being inshore isn't always protection enough.

Okay. So, tsunami risk: It's low, but all possible causes should be investigated and, I would submit, a more comprehensive assessment should be provided there just to get the numbers on the table.

Noise pollution: Another pet project for me since I study underwater acoustics. Offshore seismic surveys generate chronic noise. Ship traffic associated with it, more chronic noise. Pile driving will create periods of intense noise and blasting is a different category altogether, and these things have been noted, for the most part, in the report.

My biggest concern really is the chronic noise. I think we tend to ignore that. We tend to think, the oceans are quiet, which they're not. They're very noisy places, and we are contributing to that in a substantial way.

How many people here have heard of seismic pulse for under water? Well actually, I'm not surprised that no hands are going up. So, I've got one here. I synthesized. Now, the oil industry people are probably looking at that and saying that's not what a seismic pulse looks

like, right. But then you never recorded a seismic pulse 500 metres to the side of the ship. So, this is a synthesized seismic pulse, but instead of looking underneath the seismic array, I've gone off to the side. It changes it a little bit, but not substantively. So, I'm going to get you listen to that.

Andy, can you cue that up for me please? So, that's a seismic pulse and this repeats now about every five seconds and that's what would be going on in the Grand Banks when they're doing a seismic survey.

That's just going on in the background. The further away you get from the source, obviously the quieter it gets. It will be like thunder, distant thunder. It will kind of start to smooth out and get longer.

But one of the problems in assessing that is that pulse is most of the energy is around 50 Hz, which is what the seismic survey requires. And we don't actually use 50 Hz to communicate very much. Fifty hertz is kind of like those piano keys down on the far left. It happens to be the frequency the whales use for long-distance communication because this signal will go for hundreds of kilometres in the ocean. That's an important thing to bear in mind. It's not like sound in air, where you might only hear a sound for a few hundred metres. No, we're talking about hundreds of kilometres, if not, thousands.

So, I took the liberty of taking that pulse and shifting it up a thousand hertz to the frequency that we use to communicate, up around a thousand hertz, it's kind of like, more like the middle of the piano, and I'll ask Andy to hit that one for me please.

So, that's kind of what it would be if it was in our operating range, just a background tweak like that all the time. And if you're really close to it, it would be kind of, like, what was that. And as you get farther away, it's just kind of like an irritation to the communication.

So, the point I'm trying to make here is that by itself, there's not a lot of direct impact to animals. They aren't -- there's not a lot of animals that suffer a fatal injury because of seismic surveys, and the industry takes steps to avoid that problem, but the chronic noise, they don't really do anything about.

And so, what I would ask, in particular, is that they make efforts to avoid making noise, making these noises, discretionary noises, shall we say, at times of the year when there would be the least impact, in particular, on marine mammals, but in the environment in general because that's a real difference that they can make. And the impression I get with seismic surveys is they generally take place when we can get the seismic survey ship.

Light pollution. That didn't come out as well as I'd like. It's a particular concern to birds, and I didn't have a slide for this, but then I looked on the web and I found a website where they had

made a mosaic of nighttime lights over the world. They must have had to take a lot of satellite shots of Newfoundland before they got those lights.

But, so you can clearly see St. John's there and the rest of the island. And then off to the distance, there's two lights where there are no towns. There's no civilization. Oh, but there's industry. So, those offshore oil projects, and you still only see two there really, but that's 2002 and White Rose isn't out there yet. They've changed the sort of environment of the Grand Banks. There's now a light source out there, and on a continuous basis. So, that's going to have an effect on any animals that cue on light.

So, my last point. I'm out of time it says. Independent observers. Why do we need these? Well, it's notable that in 1991, if you looked at St. John's, it was a pretty dreary place. There were buildings boarded up downtown. There was a lot of ship traffic in the harbour. It was pretty slow moving.

Twenty years forward, 2011, that's a whole different scene. There's new buildings. There's supply ships, service ships coming and going all the time. It's a happening place. So, the oil industry has done a lot of, I mean, that's a visible, significant impact on the economy of Newfoundland that everyone sees. Everyone in St. John's sees that. It's a benefit. It's great.

You know, 300-odd kilometres off to sea, we cannot see these offshore developments, this heavy industry. And I was cruising the web to find pictures of these things, and the only pictures I can find of Hibernia online are, well, pictures that have been kind of mediated by the industry. They are all out there by themselves doing what they do, and they are controlling the information that comes back.

So, you can't see the footprint, and what we do see is kind of controlled, and that's something that independent observers could go a long way to dispelling because they would be out there to provide that independent review of what's going on. They can provide validation of the success of environmental safeguards. They would quantify any impact on animals, and they would be there dedicated to do it all the time because that would be their job. They wouldn't have some job that they would have to do and then on the side, oh we'll check on these things. Twenty-four/seven they're looking for that. It might even become a valuable scientific record in the end.

And I've heard a lot of excuses why this isn't possible: safety concern, training concern, cost concern, space concern. I've heard that independent observers are put, kind of, in an awkward situation because they're like, kind of the enemy, and, like, they're kind of shunned in the culture of the rig, if you will.

But I actually kind of reject that statement. If there's a culture of environmental awareness, of environmental sensitivity, then you should welcome the independent observer, just like you'd

welcome the safety officer who is making sure that the operations are safe.

So, I've heard a lot of excuses why not, but I'd like to see it possible. I'd like to see it possible because it would Otherwise, we don't have an independent record of what's going on out 300 kilometres. It's driving the economic benefits that everyone does see.

So, quick summary of my recommendations twisted out of this. Got to review environmental assessment in the assumption that reinjection is not possible. And I'd really like to see the decision criteria laid out for all to see.

The regulations concerning produced water should be environmentally defensible, not simply what we can achieve.

The tsunami impact/risk should be revisited, and I would ask the scheduled, that noise sources be scheduled for times of the year when they do their least impact, and ultimately, I'd like to see some mechanism that would allow independent observers.

Thank you very much for this opportunity to present, and I'd welcome any questions that anyone might want to ask. Thank you.

COMMISSIONER (Miller Ayre): Len, thank you very much for a very interesting presentation for us to end, and our last presentation covering a number of areas which have, in various ways, come up before, but you presented them in a slightly different light, which I think is very valuable.

I just wanted to ask you a question or two, and that relates to the produced water issue. If reinjection is not used, am I accurate in saying you're really suggesting that the C-NLOPB get more vigorous in wrapping up the regulations surrounding that? Is that what you're saying or change the standard or?

LEN ZEDEL: The international standard for discharge of oily water is 15 milligrams per litre. That's a regulation that all shipping adheres to. Well, we hope they do. So, it defeats me why it's 30 milligrams per litre.

Well, no, I know the reason. And, in fact, in fairness to the industry and in fairness to the board, they have cranked down that regulation. I think it started out at 50 milligrams per litre. And so, the fact that they've reduced it is acknowledgement that it's not environmentally defensible.

Word on the street is that at 15 milligrams per litre, you don't get a surface slick, any sheen; I shouldn't say slick. And at higher levels, well, maybe sometimes you do. So, I would encourage the board, well, I can't say to require that because apparently we've got three

facilities out there operating at 30 milligrams per litre at the moment.

And that's why I would be so pleased to see reinjection because then the Hebron Project would be the only project, in my mind, that would be approaching that 50 milligram per litre on average at least, because, well, they'd be injecting it, and it wouldn't be going over the side, for the most part.

COMMISSIONER (Miller Ayre): Geoff, in my reading of your presentations, you concern yourself with the reinjection issue, and is that a stated objective you have if there's any way at all of not disrupting the issues with regard to extracting oil as a result of where you would re-inject? Is it a question of drilling new, you just have to simply look at and assume you can find a spot to drill that's not going to interfere? What are the parameters around your decisions at this point?

GEOFF PARKER: It is our objective to re-inject the water, and it's not an economic decision. It's a technical decision. We already have water injection wells to provide the pressure maintenance. So, if we can re-inject the produced water instead of re-injecting sea water. That would be fantastic. We would be very happy to do that.

So, this is purely a technical decision around, also remembering our responsibility to protect and produce the petroleum resource. We don't want to damage that, so that is the technical work that we want to do, but it is our objective to re-inject the water.

COMMISSIONER (Miller Ayre): And there is, I gather with the heavier oil, there tends to be more water. Is that the case? I don't know if that is the case. It is, I guess.

GEOFF PARKER: Yes, there is more water because we need that to maintain the pressure of maintenance. If you imagine it's very thick viscous oil and trying to get that to flow, it needs a lot of water injection.

COMMISSIONER (Miller Ayre): So, you're, in fact, motivated as well to get the pressure increased and you have the water with which to do it.

Sometimes I feel really ignorant on some areas, but it suddenly struck me I really didn't know the answer to this.

You indicated the impact of seismic in the context of noise. But when the Fish, Food and Allied Workers talk about fish disappearing, or worse, maybe being killed or something, I'm not exactly sure, but when they indicate that they can't find a supply of fish after seismic goes through, to what are they attributing ... you weren't here for their presentation, but what would your understanding be. How does the seismic affect the fish? You talk about whales, but they're talking about shrimp and other types of marine life. So, in your mind, what would

the impact be?

LEN ZEDEL: Yes. I wouldn't want to put words into anyone else's mouth on this.

COMMISSIONER (Miller Ayre): No, no, I understand. Just take a wild guess.

LEN ZEDEL: Go on a flier. That's been, like, a question that people have been asking and trying to get to the bottom of for ages. There is active research into it, and I know in the case of marine mammals it is kind of like both, it goes both ways. Sometimes the seismic surveys actually attract the animals which is a bit of a problem in and of itself. Often there is no obvious response. Some visual reports see the animals are being kind of that may be 10-kilometer scale going around these survey ships, and there are some reports of some response that, like, as far as 100 kilometers away.

So for marine mammals it is kind of, yeah, there seems to be some effect. Fish are much harder to get a handle on. And I have not seen any kind of definitive statement one way or the other. The sort of fatal impact area, it would be very small. So I have never worried too much about fish impact by the seismic source in and of itself. So then you're left with the question of, well, what behavioral responses are to these animals when they're subjected to these loud noises. And like I said, that's one of these vague, hard-to-nail-down questions. I've not seen a definitive answer on it.

COMMISSIONER (Miller Ayre): Well, I think there are still lots of work being done on it for sure.

LEN ZEDEL: Oh yes.

COMMISSIONER (Miller Ayre): But so, you're telling me that if I call my goldfish he can hear me or is this a vibration that they're feeling?

LEN ZEDEL: Well, no, if you call your goldfish

COMMISSIONER (Miller Ayre): I don't know. It depends how loud and where I am in the room, I suppose.

LEN ZEDEL: As a physicist, I need to tell you that the sound in the air doesn't get into the water very effectively. So you need to wrap on the side of the aquarium.

COMMISSIONER (Miller Ayre): Oh, I'm doing it wrong, am I? That's why the lips are right there on the bowl.

LEN ZEDEL: There we go. There we go. Yeah, if you start tapping it, at a point you'll start

irritating the animal.

A lot of animals in the marine environment use sound either actively to sort of communicate or just to sense things around them. So the biggest chronic issue is if we start hitting them with some irritating noise. And you can do an experiment with your goldfish. You just wrap on the side slightly, he thinks you're probably coming with food. You bang a little harder and he might sort of jolt and jump, and have like a fear response. And I would submit that's what the fishing community would argue is happening, is the fish are going into some kind of escape response, not allowing themselves to be caught in their nets, which I would almost submit might be an environmental benefit but that's another story.

COMMISSIONER (Miller Ayre): That's another side. Well, we'll have to get you and Earle in the room at the same time.

LEN ZEDEL: That would be an interesting conversation.

COMMISSIONER (Miller Ayre): Well, I don't have anymore questions. I don't know, Geoff, if you do. You may have a comment.

GEOFF PARKER: I really appreciated the presentation. Thanks, Len. There was one area I wanted to pick on to share some of our experiences on safety and trying to relate those to the improvement we're trying to make also in environment. And you mentioned when we were talking about the independent observers of the concept of the safety officer. And what we found is that the role of a safety officer has really changed in the last 20 years, and I think that change in role has really helped us in some of the breakthroughs we've made in safety performance. In that, 20 years ago the safety officer was the police, the safety police. It just wasn't effective. So that's why all our programs are designed around trying to make everyone in the workforce a safety champion. And so to me, if we get this culture that you talked about of environmental awareness, then everyone will be an independent observer.

And if you think about it, we've got hundreds of Newfoundlanders and Labradorians working out offshore, and I guarantee you they are all independent observers. They have the same stake in protecting their environment as we all do. So, I don't think we're too far from where we want to be in that environmental culture, and I just don't think independent observers are sort of that step back into making the environmental police, that didn't work really in safety and I'm not sure it would work on the environment side.

COMMISSIONER (Miller Ayre): I was curious about one thing in this process that has never been clear to me. When people are requesting independent observers, you mean there'd be somebody there all the time or would this be something that would occur twice a year for two weeks or three weeks or? And what, just so I understand just what in general people would be looking for.

LEN ZEDEL: I would submit everyone you asked would have a slightly different answer on that one. For me, it's simply that they be allowed in some form or other. I question the need for 24/7 services, but if you talked to somebody like Dr. Montevicchi he would see immediate benefits to having someone there making observations on a continual basis, so.

COMMISSIONER (Miller Ayre): No, he would say 24/7, 365.

LEN ZEDEL: Yes, sorry, my mistake. So, yes, all the time.

COMMISSIONER (Miller Ayre): Yes.

LEN ZEDEL: So there is the difference. My biggest thing is just that they be allowed in some form. That there be some independent way for information to be made available from the offshore developments.

COMMISSIONER (Miller Ayre): Okay. Well, I think we're pretty much Well, thank you for your presentation. And if you take a seat, I think there is maybe another question or two from the floor before we wrap up the hearings.

JANET RUSSELL: Yes, I would just like to make some other comments.

COMMISSIONER (Miller Ayre): You want to move the mic down a little bit, Janet. No. Yes, I think if you pull the, yes, just aim it a little bit.

JANET RUSSELL: Like that?

COMMISSIONER (Miller Ayre): Yes, perfect.

JANET RUSSELL: You can hear me. Yes. Just to follow up on the independent observer comments initially. I used to be a fisheries observer so I have some experience of the use of that service for the fishery. And I know that it didn't save northern cod but on the other hand I know that years later people like Graham Myers could come along and mind the data that was collected and find things out about the distributions of deep sea corrals and things like that, a lot of basic biological data. Some basic biological data was able to be extracted from that data that had been collected as part of the observer effort.

So there can be indirect benefits. If you do, do something like that, I think it should be designed to maximize the potential for the collection of independent data that has potential use down the road. But I'd rather see other things. I'd hate to think that we give independent observers and then that would be it, because that wouldn't work. That wouldn't be enough.

The project Proponent has said that they stress prevention and I would go along with that, but they also indicated just a little earlier that they would be applying for exemptions, authorized discharges under the Migratory Bird Act. That would be the approach they were going to be taking with the Migratory Bird Act. And I want to ... my interpretation of that is that these authorizations amount to exemptions. And if you know a priori that you are putting substances in waters frequented by migratory birds that are deleterious to migratory birds, you know yourself that that is a violation of the intent of the act. So, while technically you may be able to apply and undoubtedly you will receive authorizations to disclose of the things you wish, I would like to challenge you to consider not pursuing that route and revert to your stress on prevention because the authorization is not going to prevent the harm. The authorization is just going to permit you to cause the harm. And so if you're going to pursue prevention, I would suggest that you raise the bar yourself because you're obviously operating in an environment where the bars are not high enough, and so this is something I would like to point out, and I ask the Commissioner to take very seriously when you go over everything that you've been reading and hearing during these hearings and the readings that you are doing, is that what's permissible here is not good enough. What's been permitted has not been good enough. We have decades of offshore oil and gas exploration that is expanding in our offshore waters in an environment that's been identified as one of the most important places in the oceans of the world is an international crossroads for migratory birds. And Canada is a signatory to the international treaty governing our responsibilities and obligations to protect those birds while they are in our waters.

So they are there from northern hemisphere, southern hemisphere, across the pond in Europe, down the stream from the states. They're from everywhere there and they're out there. And Bill had a good slide that showed how they're actually concentrated in the neighborhood in which you're operating.

He also had ... there is also information it is clear that the operations you're engaged in do also attract birds. This attracts quite other marine wildlife as well but there is, most definitely, an attractant effect to the operations as they are currently conducted.

If you want to prevent harm in future, I would suggest that this is a very important area to address, because at the moment you are permitted to put ... there are - let me rephrase it - there are chronic regulated permitted discharges that are known to kill seabirds. We know this. This is a very serious fact. We have permitted it. It is happening. It is happening chronically and it is happening cumulatively, and the species involved has been identified in environmental assessment after environmental assessment as the valued ecosystem component that is the most vulnerable to the effects of oil or oily-like substances in the water, because they can die of hypothermia from the wet suit, holding your wet suit phenomena in the interaction between their plumage.

So something, it doesn't have to be toxic because people will go on at length about how these

new drilling muds, this thing and that thing, oh, it is not toxic, but it wasn't have to be toxic. It is a practical effect, it is a physical effect on the plumage. So you can still kill birds with it. And that's been known for a long time that it's been suspected. It is only last year that there was a paper that looked at this with the synthetic drilling muds. Could they also cause this problem with the feather structure and I think it was an ESRF study. Finally 2010, I mean this was coming up years ago. It's been a recurrent theme, right. What about, can you, and then eventually. So now there's some black and white paper about it that says, yes, the synthetic drilling muds can also, because of course they're designed to behave like oil. So they will have the same effect on the bird's plumage.

So if you know you're attracting birds, you know you're in the neighborhood where there's already globally significant concentrations of birds that are international, you know you're operating in a waters of a signatory that's signed on to protect these birds while they're in the water, you know you're operations are attracting them to your operating sites, the very localized, right around the platform, you know that the chronic discharges can kill them, this is the context. This is out there, out of sight, out of mind, and this is a really amazing thing that's a difficulty with public perception because, as Len pointed out, I mean we see, we see the benefits here and most probably of what you've heard about at these hearings is about benefits.

And I really want to end by underlining some of the costs and pointing out that it's already a completely unacceptable situation for people like this time that we live in, given the amounts of resources that are involved in extracting the benefits, not to be taking more effort to minimize some of these costs is really, really untenable. And I know that the regulator, you're not being required. So you can say we're meeting all the requirements. We will meet the regulations.

There is a couple of things, observations on that. You operate around the world. Do you only meet the lowest? You go to the lowest common denominator, right. Like, if you're allowed to pay someone a pittance, is that what you pay them, if you value them more? Or do you usually, you know, these kinds of things, you can set the bar higher on yourself, and I think this is something that has to be considered because we are no knowingly killing seabirds after having attracted them, and we're not even, we're not even This is an unestimated mortality. There are no, to my knowledge I know of no estimates of the amount of seabird mortality associated with current permissible operations in the offshore oil and gas industry. And it is just kind of ridiculous. I can't fathom it. And so I just challenge you to do better.

COMMISSIONER (Miller Ayre): Well, look, I understand the point you're making, and as I indicated to you, if you We've taken notes on what you've said now and certainly they are in the transcript as well. So we're going to get a full understanding of it. But if you did want to augment your previous presentation as well on any point, then, even though at this stage we're not taking anymore submissions, we certainly would accept something from you as an

extension of the points you're making now, if that's of any value.

JANET RUSSELL: Okay, thank you.

COMMISSIONER (Miller Ayre): And I'm happy to leave it at that, if that's all right with you?

JANET RUSSELL: Yes. No, I will make some other further written submission. Thank you very much.

COMMISSIONER (Miller Ayre): Okay. Thank you very much. I would like to make a few closing remarks and then, Geoff you may have something as well. So I'll just, I'll do mine first and then we'll hear from Geoff's, and then we'll draw our hearing to a close.

So, over the past 11 days of these Public Review Sessions, the Commission has heard 43 presentations, in Marystown, Clarenville and St. John's, with more written submissions received. The presenters reflected every part of our community; included business leaders, municipalities, unions, leaders of advocacy and special interest groups, educators and environmental groups, charities, contractors and individuals.

This is the fourth major oil field development in the province's offshore and in current dollars the largest in its history, and yet, the interest level has remained remarkably high.

These sessions have generated a great deal of media interests surrounding all four aspects on the review - safety, environment, development and benefits - as well as much unsolicited public feedback in the form of web comments and extended conversations on open line radio shows, that this development should proceed, it is not in question. What is in question is how the development should proceed and what legacy this development would leave for our province and for the country.

There were several common themes heard in the last three weeks: the need for more transparency and reporting in terms of local benefits; safety management systems and environmental protection; better communications and cooperation; a call for representatives from the workforce, business, the oil industry and government to work together to strive for continuous improvement; the problems of inadequate housing and infrastructure in some municipalities as a result of economic growth; suggestions for different approaches to regulation project monitoring and benefits creation; the need to proactively engage representatives of the fishery; and sustainability and creation of a legacy for the future.

Many presenters look to ExxonMobil as an industry leader to establish best practices and innovations towards worker safety, towards the environment and towards the community, diversity, gender equity, local benefits, sustainability.

At this juncture, I would like to thank all the presenters for taking the time and effort to speak to the Commission. Among these there are very important issues. The informed and thoughtful nature of the presentation indicates to me that the public are aware of and engaged in what goes on in the oil industry, and are deeply concerned about how such a huge development proceeds.

The Newfoundland and Labrador oil industry is maturing. This was reflected in the number of presentations that indicated willingness of diverse members to work together to solve problems, strengthen the economy and find new ways to benefit all Newfoundlanders and Labradorians now and in the future.

I would also like to thank Geoff Parker and his team from ExxonMobil for their cooperation throughout all stages of the Public Review, and for their professionalism in meeting the deadlines aligned to them.

The Commission will not be formally accepting any further public submissions after today. My final report will be submitted to the C-NLOPB, the Minister of Natural Resources provincially, and the Federal Minister of National Resources by the end of February.

The final report, along with all other material submitted to the Commission will be made available on our website. And I thank you and we'll wait for Geoff to make a few remarks and then I'll formally adjourn.

GEOFF PARKER: Thank you, Commissioner. And on behalf of the entire Hebron team I would like to thank you for the opportunity over the last three weeks to share with you, your team, and other interested members of the public details about the Hebron Project Development Application.

I would also like to thank the Commissioner's team. Kept the sessions running very smoothly and professionally. The Hebron Project team thanks all people who have taken the time to present their views at consultations over the past few weeks and at these sessions.

We have found that the information presented and the insuring dialogue has been both informative and thought provoking. I've particularly appreciated the passion around safety and environmental protection. I think it is clear that we all share the same goals, of "nobody gets hurt" and Protect Tomorrow.Today."

Hebron is a world-class resource. We're proud of the work that we've done to date, and as we prepare to enter the detail design phase we will continue to develop the resource with the same sense of pride, knowing that we're developing the resource for the benefit of the people of Newfoundland and Labrador.

If sanctioned, the project will provide meaningful employment for diverse Newfoundlanders and Labradorians, and revenue for the province through equity royalties and taxes generated from the operation. This revenue will help fund infrastructure, social programs, research and development, education and training, and other services for decades to come.

You've heard me talk repeatedly about the emphasis we place on a rigorous approach to safety and protecting the environment; and as we conclude this Public Review session, I would like to reiterate my commitment and that of my team and the project co-venturers to develop this resource in a safe and environmentally responsible manner.

Commissioner, we look forward to your report and to the continued advancement of the Hebron Project. Thank you.

COMMISSIONER (Miller Ayre): Thank you all very much. I don't know when I said that the presentations were extremely creative and promised all sorts of vigorous action. Whether we've got ourselves a more difficult or an easier report to write but time will tell. And Leslie, I'm hoping you got a crack at winning your 20 bucks so we can get it done on time. Thank you all very much. And we adjourn.

-END OF DAY 11-