UPDATED PROJECT DESCRIPTION

Offshore – 3. Alternate Offshore Loading System
The C-NLOPB requested a side-by-side risk profile for the two alternatives. EMCP responded "*EMCP is no longer considering this option*.". The C-NLOPB questions "which option"?

SPECIFIC COMMENTS

EMCP Comment 4: C-NLOPB 3
It appears EMCP has not understood the C-NLOPB's response, in that EMCP has narrowly focused on a pumping system, where the pumps used to pump mud down the hole are used to generate sufficient head to move cuttings to higher levels of the platform, where CRI is located. The C-NLOPB does not dispute EMPC assertion that under this pumping scenario, hydrostatic head may exceed that of the substrate and the integrity of the well bore could be compromised. What the C-NLOPB has put forth is that once the cuttings are on the platform, a hydraulic break [i.e. a tank] with a pumping system that would lift a fluid [mud] to whatever height one wishes be installed. Since this is a separate pumping system not connected to the one that circulates mud in the hole, well bore pressure is not affected because the pumps used to circulate mud in the well bore would only create sufficient pressure to return the cutting to the lower level of the platform, as EMPC has proposed to do in the CSR. EMCP's statement that "The proposed pumping system would challenge well bore integrity by imposing hydrostatic loads on the wellbore…" is simply irrelevant as they have failed to consider introduction of a hydraulic break.

The proponent states properties of cuttings are based on samples captured from the Hibernia Platform. The Proponent has not made a connection between the geology of the formation the Hibernia platform drills trough and that of geology obtained from Hebron drilling programs. For such assertions to be valid, the proponent needs to provide a comparison of the geology of the Hibernia formation to that of Hebron to show they are similar.

The Proponent has provided its objectives for disposal of cuttings with a reference to disposal at the Hibernia project. This does not address that disposal formations capacity has not been demonstrated or shown by the proponent or, as more detailed information is gained through injection of cuttings, that the proponent will reassess injection of WBM and cuttings. The description of the disposal formation capacity is relevant.

EMCP Comment 5: C-NLOPB 4
The Proponent appears not to have contemplated how natural convection, as proposed, will achieve the desired effect. For the propose of this environmental assessment, the proponent should consider the need to add chemicals, i.e. biocides, to the as the worst case and should assess their use on the receiving environment. If the use of chemicals has not been assessed, it may be necessary for the proponent to amend its environmental assessment to account for the use of chemicals. The proponent should set aside the

natural convection theory and assess a worst case, the use of chemicals so that if chemicals need to be used the Proponent will not have to amend its environmental assessment.

EMCP Comment 8: C-NLOPB 6
It is understood that reinjection of produced water into a producing reservoir has certain risks which, if not mitigated, can have a serious effect on the quality and volume of oil recovered. Some of these risks are difficult to address until production has commenced and volumes of produced water obtained. EMCP appears to have taken an all or nothing approach to reinjection of produced water, and is unwilling to consider other options to dispose of produced water or the possibilities to re-inject a portion of produced water. The proponent has not presented information to preclude injection of some of the produced to a non-producing reservoir or that injection of produced water into selected parts of the reservoir is not possible. The proponent has not addressed if additional equipment may be required for the successful reinjection of produced water as mentioned in the C-NLOPB's response.

The proponent has focused on the fact that no significant effects on the receiving environment due to the discharge of produced water have been detected to justify the discharge of produced water. EMPC has stated meeting the a 44 mg/L daily oil concentration for produced water may be challenging but is unwilling to consider that with reinjection of produced meeting this oil content is irrelevant nor the implication of not meeting this target may have on their operation. The proponent has not also considered produced water reinjection comparing CO2eq estimates (150,000 t of CO2eq being released into the atmosphere annually) to other alternatives or to CO2eq from degradation of discharged oil.

EMCP Comment 9: C-NLOPB 7
See C-NLOPB Response to EMCP Comment 8: C-NLOPB 6.

EMCP Comment 10: C-NLOPB 8
The proponent is reminded that a further review of the technologies employed and that they are reasonable to minimize emissions to as low as reasonable practicable, will be applied at the development plan stage

EMCP Comment 11: EC 02
Environment Canada is satisfied with this response.

EMCP Comment 12: DFO 1
This response is considered adequate.

EMCP Comment 13: DFO 2
This response is considered adequate.

EMCP Comment 15: EC 03
Environment Canada is satisfied with this response.

EMCP Comment 24: EC 10
Environment Canada is satisfied with this response, providing the information to EC once the detailed design process has advanced is acceptable.

EMCP Comment 28: EC 14
EC 14 a and b, on the Offshore Wind Climate

Clarification on the source for the platform winds being Ocean Ltd archives, rather than ICOADS as assumed, is acknowledged.

Request: Specify, in the revised CSR, the source for the platform winds (Oceans Ltd archives, based on MANMAR data), since this was not indicated. This should also specify that MANMAR refers to reports generated in ship code format (World Meteorological Organization (WMO)-FM13) for transmission on the Global Telecommunications System (GTS).

EC 14 c and d, on the Offshore Wave Extremal Analysis

1) The cited reference (Berek and Wang 2009) was provided as requested, although it only states that it was a memo, and does not give number of pages. This was cited in the Nov. 2010 response to request for information about how the MSC50 hindcast significant wave heights (Hs) were calibrated to Hibernia measurements, prior to development of the design wave criteria (as described in CSR Section 3.2.2.1 Waves, referencing ExxonMobil Upstream Research Company (2009)). The Nov. 2010 response gave the calibration equation derived by Berek and Wang 2009 ($H_{s,calibrated} = 1.0507*H_{s,hindcast} - 0.4793$).

Only the first 2 years of the detailed Hibernia wave radar measurements are available on the Integrated Science Data Management (ISDM) online archive at Fisheries and Oceans Canada. The Nov 2010 response indicated that the Hibernia wave radar data are considered proprietary and are not being provided to ISDM, even though ISDM is the repository for the detailed wave measurements provided by wave buoys at the other sites on the Northern Grand Banks. Thus most of the detailed wave radar data, on which the calibration equation was based, are not available and are of unknown quality.

Request:
a) Include the calibration equation and its reference in the revised CSR in the section on wave extremes, along with the information that the calibration was based on MIROS Wave Radar measurements from Hibernia, rather than nearby wave buoy measurements.
b) Include in the revised CSR or a background supporting document, validation information (or a published reference), if available, for the Hibernia MIROS wave radar measurements compared to nearby wave buoy measurements. If not available, it may be advisable to consider such comparisons for any further more detailed design studies.
c) Complete the CSR Reference for ExxonMobil URC (2009) to indicate that it is a Memo dated 2 September 2009, 91 p. (as indicated by the Oceans Ltd and AMEC (2010), AMEC (2010) report).

2) The Nov 2010 response states that the calibration leads to a reduced operation criteria and increased extreme criteria. However the CSR extremal analysis in Section 3.2.2.6 and the Oceans Ltd and AMEC (2010) report-Oceans Ltd (2010), which appears to be based on MSC50 data without the Berek and Wang calibration, gives 100-yr extreme significant wave heights that are slightly higher: 15.1m or 15.8 m, depending on the method, compared to 14.8 m from ExxonMobil URC 2009.

Request: In the revised CSR, please indicate the level of uncertainty or confidence interval for the extreme wave estimates, given the different results presented in the CSR and its sources.

3) **T**he CSR gives a Table 3-33 Wave Height Directional Weighting Factors, which the text says may be used to scale the extreme wave estimates for consideration of waves from a particular direction. The text says the directional factors account for the reduction in long period waves as they move over the relatively shallow sea bottom. However, it would not be appropriate to scale results for depth based on the MSC50 data since these are based on a wave model that includes the bathymetry and shallow water wave physics.

Request: Please clarify in the revised CSR how these factors are intended to be used, or justify why they would be used with MSC50 derived wave statistics.

EMCP Comment 43: C-NLOPB 20
The proponent is reminded that a further review of the technologies employed are reasonable to minimize emissions to as low as reasonable practicable will be applied at the development plan stage.

EMCP Comment 61: EC30
The proponent was not specifically asked for an emissions prediction, but just for more information related to emissions from upset scenarios of a more catastrophic nature. This could take the form of a discussion highlighting the range of scenarios based on historic upsets - i.e. how long did these last until they were brought under control? What do we know about the ranges in both magnitude and constituents of the emissions in situations such as this? While recognizing that the probability of such an upset is very low, it is not zero.

EMCP Comment 66: DFO 6
This response is considered adequate.

EMCP Comment 67: DFO 7
This response is considered adequate.

EMCP Comment 72: DFO 10
This response is considered adequate.

EMCP Comment 75: DFO 13
This response is considered inadequate.

As indicated in the previous two rounds of comments, information provided in the tables needs to be discussed in the text within Section 7.5. While the revisions provided in the proponent's most recent response addresses some of DFO concerns, further information is still required for some activities. These additional revisions may be addressed through new text or cross-referencing applicable information from other sections. The tables below outline the requested revisions, which have been made based on information contained in Tables 7-11 to 7-14.

Revisions required to Section 7.5 of CSR based on information contained in Table 7-11

Nearshore Project Activities for Construction and Installation	
Project Activity	**Requested Revision**
Presence of Safety Zone	Acceptable
Bund Wall Construction (e.g., sheet/pile driving, infilling, etc.)	"*Chemistry of rock and till material will be tested prior to placement*" should be added as a mitigation to Section 7.5.1.2 (Contamination). "*Potential Mortality*" should be discussed in Section 7.5.1.4.
In-Water Blasting	The mitigations provided in Section 7.5.1.2 (Noise and Blasting) on p. 7-55 do not include all the mitigations contained within Wright and Hopky 1998. The proponent should reword this section to indicate that this list is not exhaustive and that the Wright and Hopky document should be referenced for a complete listing. "*Consultation with DFO on blasting plans prior to use*" should be added as a mitigation to Section 7.5.1.2 (Noise and Blasting). "*Compliance with Section 32 of the Fisheries Act as detailed in the Section 35(2) Fisheries Act Authorization* " should be added as a mitigation to Section 7.5.1.2 (Noise and Blasting).
Dewater Drydock/Prep of Drydock Area	"Change in Habitat Use" should be discussed in Section 7.5.1.3. References related to the effect of dewatering on fish as well as the EPP and

	Fish Relocation Program should be made in Section 7.5.1.4, not Section 7.5.1.1 as indicated in the proponent's response to Comment 80: DFO 15.
Concrete Production (floating batch plant)	"*Change in Habitat Use*" should be discussed in Section 7.5.1.3.
Vessel Traffic (e.g., supply, tug support, tow, diving support, barge, passenger ferry to/from deepwater site, etc.)	"*Procedures will be in place specifying speed for vessels within the traffic lane in Bull Arm*" should be added as a mitigation to Section 7.5.1.3.
Lighting	Acceptable
Re-establish Moorings at Bull Arm Deepwater Site	"*Change in Habitat Use*" should be discussed in Section 7.5.1.3.
Dredging of Bund Wall and Possibly Sections of Tow-out Route (may require at-sea disposal)	"*Dredging of Bund Wall and Possibly Sections of Tow-out Route*" should be added to the list of activities in Section 7.5.1.2 (Suspended Sediment).
Removal of Bund Wall and Disposal (dredging/ocean disposal)	Acceptable
Tow-out of GBS to Bull Arm Deepwater Site	Acceptable
GBS Ballasting and De-ballasting (sweater only)	"*Change in Habitat Use*" should be discussed in Section 7.5.1.3. "*Potential Mortality*" should be discussed in Section 7.5.1.4. "*Intake of water at depth (10 m, below most productive zone) and adhering to the Freshwater End-of-Pipe Fish Screen Guidelines*" should be added as mitigations to Section 7.5.1.4.
Complete GBS Construction and Mate Topsides at Bull Arm Deepwater Site	Acceptable
Hook-up and Commissioning of Topsides	Acceptable
Surveys (e.g., geophysical, geological, geotechnical, environmental, etc.)	"*Survey equipment and vessels will only use the power required to attain the data, thereby minimizing noise*" should be added as a mitigation to Section 7.5.1.3.
Platform Tow-out from Deepwater Site	Acceptable
Offshore Project Activities for Construction and Installation	
Presence of Safety Zone	Acceptable
OLS Installation and Testing	It should be noted in Section 7.5.1.1 that OLS installation could result in a HADD of fish habitat thereby requiring a Section 35(2) *Fisheries Act* Authorization.

	"*Change in Habitat Use*" should be discussed in Section 7.5.1.3. "*Efficient installation with minimal seabed disturbance*" should be added as a mitigation to Section 7.5.1.2 (Suspended Sediment).
Concrete Mattress Pads/Rock Dumping over OLS Offloading Lines	"*Change in Habitat Quality*" should be discussed in Section 7.5.1.2. "*Change in Habitat Use*" should be discussed in Section 7.5.1.3. "*Efficient installation with minimal seabed disturbance*" should be added as a mitigation to Section 7.5.1.2 (Suspended Sediment).
Installation of Temporary Moorings	"*Change in Habitat Quality*" should be discussed in Section 7.5.1.2. "*Change in Habitat Use*" should be discussed in Section 7.5.1.3.
Platform Tow-out/Offshore Installation	It should be noted in Section 7.5.1.1 that installation of the GBS could result in a HADD of fish habitat thereby requiring a Section 35(2) *Fisheries Act* Authorization. "*Change in Habitat Use*" should be discussed in Section 7.5.1.3.
Underbase Grouting	"*Change in Habitat Quality*" should be discussed in Section 7.5.1.2.
Possible Offshore Solid Ballasting	"*Change in Habitat Quality*" should be discussed in Section 7.5.1.2.
Placement of Rock Scour Protection on Seafloor around Final Hebron Platform Location	In Section 7.5.1.1 (Offshore), "*Rock scour protection on seafloor around the final Hebron platform location*" should be added to the discussion on offshore activities that could affect habitat quantity. "*Change in Habitat Quality*" should be discussed in Section 7.5.1.2. "*Change in Habitat Use*" should be discussed in Section 7.5.1.3.

	In the second paragraph on p.7-61, "*rock scour protection on seafloor around the final Hebron platform location*" should be added to the list of activities that could smother sessile invertebrates.
Hook-up and Commissioning of Hebron Platform	Acceptable
Operation of Vessels (supply, support, standby and tow vessels/barges/diving)	"*Change in Habitat Use*" should be discussed in Section 7.5.1.3.
Lighting	Acceptable
Potential Future Activities for Construction and Installation	
Presence of Safety Zone	Acceptable
Excavated Drill Centre Dredging and Spoils Disposal	It should be noted in Section 7.5.1.1 that the construction of excavated drill centres and subsequent spoils disposal could result in a HADD of fish habitat thereby requiring a Section 35(2) *Fisheries Act* Authorization. "*Change in Habitat Use*" should be discussed in Section 7.5.1.3.
Installation of Pipeline(s)/Flowline(s) and Testing from Excavated Drill Centre(s) to Platform, plus Concrete Mattresses, Rock Cover or Other Flowline Insulation	It should be noted in Section 7.5.1.1 that the installation of flowlines could result in a HADD of fish habitat thereby requiring a Section 35(2) *Fisheries Act* Authorization. Reference should be made in Section 7.5.1.1 (Future Activities: Construction) to the discussion on the effect of flowline protection in Section 7.5.1.1 (Offshore) as it is also applicable. "*Efficient installation with minimal seabed disturbance*" should be added as a mitigation to Section 7.5.1.2 (Suspended Sediment). "*Change in Habitat Use*" should be discussed in Section 7.5.1.3.
Hook-Up, Production Testing and Commissioning of Excavated Drill Centres	"*Change in Habitat Use*" should be discussed in Section 7.5.1.3. "*Implement chemical selection management system*" and "*Adherence to regulatory limits with respect to discharges in to marine waters*" should be added as

	mitigations in Section 7.5.1.3.
Surveys (e.g., geophysical, geological, geotechnical, environmental, ROV, diving, etc.)	Acceptable

Revisions required to Section 7.5 of CSR based on information contained in Table 7-12

Offshore Operational Activities	
Project Activity	**Requested Revision**
Presence of Safety Zone	Acceptable
Presence of Structures	Acceptable
Lighting	Acceptable
Maintenance Activities (e.g., diving, ROV, etc.)	"*Change in Habitat Use*" should be discussed in Section 7.5.2.3.
Wastewater (produced water, cooling water, storage displacement water, etc.)	"*Change in Habitat Use*" should be discussed in Section 7.5.2.3.
Chemical Use/Management/Storage (e.g., corrosion, inhibitors, well treatment fluids, etc.)	"*Change in Habitat Use*" should be discussed in Section 7.5.2.3.
Well Activities (well completion, work overs, etc.)	"*Change in Habitat Quality*" should be discussed in Section 7.5.2.2. "*Change in Habitat Use*" should be discussed in Section 7.5.2.3.
WBM Cuttings	"*Change in Habitat Quantity*" should be discussed in Section 7.5.2.1. "*Change in Habitat Use*" should be discussed in Section 7.5.2.3.
Operation of Vessels (supply, support, standby and tow vessels/barges/ROVs)	Acceptable
Surveys (e.g., geophysical, 2D/3D/4D seismic, VSP, geohazard, geological, geotechnical, environmental, ROV, diving, etc.)	Section 7.5.2.3 indicates that standard seismic mitigation measures will be applied, however there should be specific reference to the "*Statement of Canadian Practice on Mitigation of Seismic Noise in the Marine Environment*".
Potential Future Operational Activities	
Presence of Structures	Acceptable
Drilling Operations from MODU at Future Excavated Drill Centres	"*Change in Habitat Quantity*" should be discussed in Section 7.5.2.1.
WBM and SBM Cuttings	"*Change in Habitat Quantity*" should be discussed in Section 7.5.2.1. "*Change in Habitat Use*" should be discussed in Section 7.5.2.3.
Chemical Use and Management (BOP	"*Change in Habitat Use*" should be

fluids, well treatment fluids, corrosion inhibitors etc.)	discussed in Section 7.5.2.3.
Geophysical/Seismic Surveys	Section 7.5.2.3 indicates that standard seismic mitigation measures will be applied, however there should be specific reference to the "*Statement of Canadian Practice on Mitigation of Seismic Noise in the Marine Environment*".

Revisions required to Section 7.5 of CSR based on information contained in Table 7-13

Offshore Decommissioning and Abandonment Activities	
Project Activity	**Requested Revision**
Presence of Safety Zone	Acceptable
Removal of the Hebron Platform and OLS Loading Points	The statement, "*Use of best practices, continuous improvement programs*" should be added to Section 7.5.3.
Lighting	"*Change in Habitat Use*" should be discussed in Section 7.5.3.3.
Plugging and Abandoning Wells	The statement, "*Use of best practices, continuous improvement programs*" should be added to Section 7.5.3.
Abandoning the OLS Pipeline	The statement, "*Use of best practices, continuous improvement programs*" should be added to Section 7.5.3.
Operation of Vessels (supply, support, standby and tow vessels/barges/ROVs)	Reference to this activity needs to be made in Section 7.5.3.3.
Surveys (e.g., geophysical, 2D/3D/4D seismic, VSP, geohazard, geological, geotechnical, environmental, ROV, diving, etc.)	Reference to this activity needs to be made in Section 7.5.3.3.

Revisions required to Section 7.5 of CSR based on information contained in Table 7-14.

Offshore Decommissioning and Abandonment Activities	
Project Activity	**Requested Revision**
Bund Wall Rupture	Sections 7.5.4.1 through 7.5.4.4 refer to "*accidental release of hydrocarbons*", "*accidental events*" and "*hydrocarbon spills*". Each section should explicitly state which specific activities listed in Table 7-14 these terms refer to. "*Change in Habitat Quality*" should be discussed in Section 7.5.4.2. "*Change in Habitat Use*" should be discussed in Section 7.5.4.3.

Nearshore Spill	Sections 7.5.4.1 through 7.5.4.4 refer to "*accidental release of hydrocarbons*", "*accidental events*" and "*hydrocarbon spills*". Each section should explicitly state which specific activities listed in Table 7-14 these terms refer to.
Failure or Spill from OLS	Sections 7.5.4.1 through 7.5.4.4 refer to "*accidental release of hydrocarbons*", "*accidental events*" and "*hydrocarbon spills*". Each section should explicitly state which specific activities listed in Table 7-14 these terms refer to.
Subsea Blowout	Sections 7.5.4.1 through 7.5.4.4 refer to "*accidental release of hydrocarbons*", "*accidental events*" and "*hydrocarbon spills*". Each section should explicitly state which specific activities listed in Table 7-14 these terms refer to.
Crude Oil Surface Spill	Sections 7.5.4.1 through 7.5.4.4 refer to "*accidental release of hydrocarbons*", "*accidental events*" and "*hydrocarbon spills*". Each section should explicitly state which specific activities listed in Table 7-14 these terms refer to.
Other Spills (fuel, chemicals, drilling muds, or waste materials on the drilling unit, GBS, Hebron Platform)	Sections 7.5.4.1 through 7.5.4.4 refer to "*accidental release of hydrocarbons*", "*accidental events*" and "*hydrocarbon spills*". Each section should explicitly state which specific activities listed in Table 7-14 these terms refer to. "*Change in Habitat Use*" should be discussed in Section 7.5.4.3 (specifically, but not limited to, drilling muds). "*Change in Fish Mortality*" should be discussed in Section 7.5.4.4 (specifically, but not limited to, drilling muds).
Marine Vessel Incident (i.e., fuel spills)	Sections 7.5.4.1 through 7.5.4.4 refer to "*accidental release of hydrocarbons*", "*accidental events*" and "*hydrocarbon spills*". Each section should explicitly state which specific activities listed in Table 7-14 these terms refer to. "*Ship operations will adhere to Annex I of*

	the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78)" should be added as a mitigation to Section 7.5.4. "*Change in Habitat Quality*" should be discussed in Section 7.5.4.2.
Collisions (involving Hebron Platform, vessel, and/or iceberg)	Sections 7.5.4.1 through 7.5.4.4 refer to "*accidental release of hydrocarbons*", "*accidental events*" and "*hydrocarbon spills*". Each section should explicitly state which specific activities listed in Table 7-14 these terms refer to. "*Ice Management Plan*" and "*Adherence with all standard navigation procedures, Coast Guard requirements and navigation systems*" should be added as mitigations to Section 7.5.4. "*Change in Habitat Quality*" should be discussed in Section 7.5.4.2.

Note: Although the commitment made by the proponent to change the text in Section 7.5.4.1 to include the possible change in habitat quantity as a result of offshore spills is acceptable (see "*Hebron Project Comprehensive Study Report: Response to Review Comments, Part 1*" dated November 2010), Table 7-14 will also need to be updated to reflect this information.

EMCP Comment 77: DFO 17
This response is considered adequate, provided the following comment is addressed:

The proponent indicates that the text provided will be incorporated into Section 7.5.1.4, however as offshore temporary moorings would likely affect habitat quality and use, it would be better to include the revised text in Section 7.5.1.2 or 7.5.1.3.

EMCP Comment 78: DFO 14
This response is considered adequate, provided the following comments are addressed:

The proponent needs to make a commitment in the CSR that the correct substrate classes will be used to construct the proposed fish habitat compensation. The response provided by the proponent indicates that, "*rock/cobble 100 to 210 mm along with dredged native sediments*" will be relocated from the bund wall to create compensation habitat. However, the creation of productive fish habitat requires the addition of rocky materials that are clean and free of sediment and is a combination of equal portions of boulder (250-750 mm), rock (130-225 mm) and cobble (65-130 mm). If the proponent cannot

provide the full range of substrate sizes indicated, then the artificial reefs may not meet their full productivity potential.

There are also several inaccuracies related to the offshore project area that need to be corrected. The footprint of the OLS on the sea floor would in fact constitute a loss of fish habitat, therefore it is incorrect to say that, "*…increased hard surface area afforded by structures (not including the Hebron Platform itself) and associated rock cover in the Hebron offshore production field will likely offset any footprint losses…*" While the rock cover over the flowlines and the armoring around the Hebron platform may constitute fish habitat compensation, it would be contingent upon the size of rock material used and its benefit to species present within the area. Until DFO has received all information regarding the existing habitat and species within the area as well as details on the rock covering material, it cannot be concluded that this habitat creation will be sufficient to, "*offset any footprint losses*" within the offshore project area. In any case, it is incorrect to make the statement that, "*HADD compensation will not be required for the offshore Project Area*".

EMCP Comment 82: EC 37
Environment Canada is satisfied with this response.

EMCP Comment 90: DFO 22
This response is considered adequate.

EMCP Comment 108: GF 13
(Refer to the November 26, 2010 EMCP response)
The proponent uses data from seismic surveys to support several of their responses regarding issue of attraction to light/flares. These data (e.g., T. Lang personal communication) should be summarized and presented in the EA (at the very least as an appendix), or the reports with the data should be readily available to the public (e.g., on C-NLOPB's website). Then when the proponent uses a phrase such as "large scale stranding" the public may have some understanding as to the scale at which they are referring (e.g., what constitutes a large scale stranding).

EMCP Comment 112: GF 17
(Refer to the November 26, 2010 EMCP response)
The proponent notes "Also, the height of the flare (approximately 98 to 108 m above sea level) is much higher than the altitude that Leach's Storm-petrels (and Dovekies) typically fly (B. Mactavish, LGL, pers. comm..)". While this is an interesting observation, presumably, it was made during day light. Until there are detailed data on how birds are behaving at night around platforms, statements such as the one above only demonstrate how little is known. If there are data which can be presented, which were collected at night by repeatable methods, by all means, please present them.

EMCP Comment 114: GF 19
(Refer to the November 26, 2010 EMCP response)
Providing Scientific Certainty and Probability of Occurrence for Each Prediction

In the current EA, each phase, rather than each prediction is provided with a confidence level rating and scientific certainty. I am very concerned about the change in formatting between White Rose and Hebron EAs. This is the fourth development and production EA for this jurisdiction and each EA has a difference approach. One could argue that the different approaches are an improvement on the process. But I would argue that the change between the White Rose EA and the Hebron EA up reduces the available information rather than improves on the process. As the RA, the C-NLOPB should be ensuring consistency and improvement for each EA. This current change is not an improvement. The proponent's response, "This is consistent with guidance provided by the CEA Agency (CEA Agency 1994) and represents a comprehensive level of certainty for each effect that occurs within that Project phase." does not answer why there was a change. It is very important to understand which predictions do not have strong scientific certainty and link these predictions to a follow-up program. By providing an overall rating for each phase does not allow the C-NLOPB, as the RA to make these clear linkages; nor does it allow the public to understand how predictions were linked to follow-up programs.

Presentation of Oil Sheen Data

The data I was requesting are oil sheens which occur with the legal discharges of oil content of produced water. The proponent's response "*The CSR concluded that, aside from accidental events (e.g., oil spills) (see Section 14.1.3), sheens are unlikely to occur from routine Project operations*." does not address my request that oil sheen data are presented in the EA. To reach such a conclusion that something is unlikely to occur requires data. Based on past correspondence with the C-NLOPB, it is my understanding that the operators are required to collect such data. An EA where predictions are being generated based on data not presented is problematic.

EMCP Comment 119: EC 47

Environment Canada is satisfied with this response.

EMCP Comment 120: GF23
(Refer to the November 26, 2010 EMCP Response)

I requested that the following information be included in the EA "…paragraph which discusses small spills known to originate from all production platforms in the C-NLOPB's jurisdiction, the frequency of these spills *and* follow-up on them especially regarding persistence & size. Information should be provided on whether attempts were made to contain/clean up small spills from platforms and how the impacts of theses small spills on seabirds were assessed and by whom (i.e., CWS or operator). If data on estimated mortality associated with small spills were not obtained, it should be discussed why this was not possible."

I understand that the oil spill section is forthcoming, but based on the proponent's response, I assume they will not be providing data on how spills were assessed:

persistence & size (spatially, not quantity spilled), on whether attempts were made to contain/clean up small spills from platforms and how the impacts of these small spills on seabirds were assessed and by whom. Predicting future impacts without using past data is not good EA practice. If the proponent does not want to disclose those data, then they should just state it. However, as RA, I think the C-NLOPB should require the proponent to provide these very important and relevant data for this EA.

EMCP Comment 129: EC 46
Environment Canada is not satisfied with the response. The draft CSR indicates that "attraction to illumination on structures and vessels during all phases of the Project are predicted to be "*…low in magnitude, geographic extent, duration, frequency when mitigation measures are practiced*". To EC's knowledge, these effects have not been adequately demonstrated due to there being very little data worldwide on seabird attraction to platforms, and no studies in Atlantic Canada. It is our understanding that research is planned for the near future to assess attraction of sea birds to platforms in Nova Scotia, but has yet to be initiated.

Environment Canada is satisfied that the detailed study design can be completed after the CEA Act section 38 decision is made, however, the need for, and the requirements of, any follow-up program in respect of the project is a clearly identified factor to be considered in the comprehensive study report. Environment Canada will not be able to exercise its section 38 decision making authority until this matter is resolved.

EMCP Comment 133: DFO 27
This response is considered adequate.

EMCP Comment 138: DFO 32
This response is considered <u>adequate, provided the following comments are addressed</u>:

Based on the new information provided in the Bull Arm Nearshore Spill Trajectory Modelling Report, Table 7-14 (Page 7-18 of the "*Hebron Project Comprehensive Study Report*", dated June 2010) appears to have some inaccuracies. Under "*Nearshore Spill*", both the magnitude and geographic extent appear to be understated. Many of the spill trajectory outcomes provided in the new report consisted of hundreds of kilometres of shoreline, which included shallow nursery habitats. The spill model also includes trajectories which appear to encompass several significant habitat areas in some of the stochastic scenarios. The ratings for magnitude and geographic extent should be re-evaluated and revised based on information provided in the new spill model.

ExxonMobil's response states that, "*The fish species that are likely to be present in the eelgrass include juvenile and adult cunner, juvenile lumpfish, juvenile lobster and pelagic juvenile Atlantic cod and herring spawn in eelgrass.*" Although it is correct that pelagic juvenile Atlantic cod could be present between June and October, it is the recently post-settled demersal juvenile life stage that would be of greatest concern for this species. Please make the appropriate revisions based on this information.

EMCP Comment 199: NDOEC 2

Item F)

Based on the response to item F, the proponent would calculate the maximum PM2.5 concentration to be 27.7 ug/m3. This would be an exceedance of the standard (25 ug/m^3) in the *Air Pollution Control Regulations* if the province had jurisdiction in that regard. The current Canada-Wide Standard is 30 ug/m^3, and therefore the emissions would fall below that standard. The proponent should however, be cognizant of the fact that in 2012 / 2013 a new Canadian Ambient Air Quality Standard for PM2.5 is to be introduced and that their emissions may not be below this new standard. The proponent is therefore encouraged to take mitigative measures during the design phase of the project to limit PM2.5 during operation.

SECTION 5 OF EMCP RESPONSE

Additional Deficiencies and Editorial Comments from Fisheries and Oceans Canada

B4) 7.3.2 Offshore: Page 7-16

The DFO RV data for 3N was provided to Ms. Sandra Whiteway (Stantec) on March 30, 2011. This information should be incorporated into the next draft of the CSR.