Comments on the

DRAFT ENVIRONMENTAL ASSESSMENT REPORT ON THE BAY DU NORD DEVELOPMENT PROJECT

September 2021

By the NunatuKavut Community Council
200 Kelland Drive, PO Box 460, Stn. C
Happy Valley-Goose Bay, NL A0P1C0
http://www.nunatukavut.ca

I. Introduction: Brief background on NunatuKavut, the NunatuKavut Community Council (NCC) and Engagement on Bay du Nord and Offshore Issues

The NunatuKavut Community Council ("NCC") is pleased to present its comments on both the Draft Environmental Assessment Report ("Draft EA Report") and the Potential Conditions under the Canadian Environmental Assessment Act, 2012 ("Conditions document") prepared by IAAC for the Bay du Nord Development Project.

Background on NunatuKavut and the NunatuKavut Community Council

The NunatuKavut Community Council ("NCC") is an Indigenous organization serving as the representative governing body for more than 6,000 Inuit (approximately 20% of Labrador's population) living in the area of central and southern Labrador we know as NunatuKavut. NunatuKavut includes over 4,700 kms (including island perimeters) of coastline stretching from the community of Cartwright in the north (just south of the mouth of the Churchill River/Lake Melville) to L'Anse au Claire in the south (on the Strait of Belle Isle, adjacent to the Labrador's border with Québec).

NunatuKavut means "Our Ancient Land." It is the territory of the Inuit of NunatuKavut, the Inuit residing primarily in southern and central Labrador. Our people lived in Labrador long before Europeans set foot on North American soil. As it was in times of old, we are deeply connected to the land, sea and ice that make up NunatuKavut, our home. Today, our people continue to hunt and fish to harvest country food that is important for health and well-being and that connects us to our culture and traditions of the past.

NCC serves as the representative governing body for the Inuit of south and central Labrador. A council elected by our membership and comprised of members representing each of the six regions of our territory and led by a President and Vice-President governs the NCC, whose primary function is to ensure the land, ice and water rights and titles of its people are recognized and respected. We are also fully present at the grassroots level in our communities, which are many and remote, the vast majority of which are located along Labrador's coast south of Hamilton Inlet. NCC provides a variety of services to NunatuKavut residents living in over 20 communities[1] in central and southern Labrador.

On September 4, 2019 the Government of Canada signed a Memorandum of Understanding (MOU) on self-determination with NCC, representing a significant step forward in our relationship with Canada on the recognition of our Inuit rights and self-determination. Through the MOU, NCC looks forward to finding shared and balanced solutions to a wide variety of issues – including impact assessments, regional assessments and strategic environmental assessments – that advance reconciliation in a way that respects the interests of the people of NunatuKavut and all Canadians. The MOU, which represents the culmination of formal talks that began in July 2018, further heightens our interest in Nation-to-Nation dealings with Canada in relation to strategic, regional and project assessments.

As the traditional stewards and guardians of our territory of NunatuKavut, our people are in the

[1] For the locations of these communities, please see https://nunatukavut.ca/about/our-communities/.

best position to provide relevant knowledge, make decisions, and monitor and enforce protections with respect to projects and policies that may affect the natural resources on which we depend, and thus our rights in relation to those resources. NCC asserts its Indigenous and treaty rights to lands and resources within Labrador and also along the Labrador coast, including the rights to hunt, fish and gather.

NCC's engagement on Bay du Nord and offshore oil and gas issues

NCC has been involved in assessments of offshore oil and gas projects for a number of years. With respect to the Bay du Nord Development Project ("Project"), NCC submitted comments on the proponent's Environmental Impact Statement in October 2020. In September 2021, NCC submitted comments on the revised draft Labrador Shelf Offshore Area Strategic Environmental Assessment (SEA) Update. While the Labrador Shelf region is obviously not where Bay du Nord is located, our review and analysis of the revised draft Update, as part of the Working Group for that process, brought to light various issues and concerns that are equally applicable in the Eastern Newfoundland offshore region, including the Bay du Nord Project. Additionally, NCC was highly engaged in the Regional Assessment of Offshore Oil and Gas Exploratory Drilling East of Newfoundland and Labrador ("RA"). As such, and given the fact that the Bay du Nord Development Project is located within the RA Study Area, some of our comments on the Project naturally connect to that larger context. Lastly, NCC has been involved in a number of reviews of specific oil and gas exploration and development projects in the region.

II. Organization of these Comments

We open our comments with an essential consideration for any environmental assessment of a fossil fuel project – namely, the reality of climate change, its impacts, and the interaction between those impacts and the "regular" potential effects of oil and gas development. We then provide a summary of key concerns that provides a quick snapshot of NCC's key concerns for both the Draft EA Report and the Conditions. Following that, we provide general and then specific comments, with specific comments organized according to the sections of the report and document to which they refer, where comments are presented according to key categories or issues of concern for NCC.

III. Critical Context for the Environmental Assessment of the Bay Du Nord Project

The people in NunatuKavut's many local communities are increasingly seeing signs of climate change and even suffering impacts, for example in relation to instability of ice for travel in winter/ and problems with invasive species. Other impacts experienced include warmer ocean waters, unusually warm summer air temperatures, and the arrival of species from more southern latitudes, just to name a few. We are deeply concerned about impacts like these both in the present and for future generations, particularly if past practices relating to fossil fuel projects and their approval rates are not modified in ways that reflect the onset of the climate crisis.

Furthermore, it seems clear from authoritative sources such as the Intergovernmental Panel on

Climate Change that future impacts of climate change may well be more serious and/or arrive sooner than previously estimated.[2] We must also underscore the fact that both the Government of Canada[3] and the Province[4] have recognized that climate change is a serious global problem with fossil fuel use playing an outsized role in global warming and impacts stemming from climate change. Fossil fuel use is, obviously, made possible when oil and gas are extracted from the Earth or the seabed. The connections are clear and the climate crisis is now undeniable. As the IPCC stated as a key headline of its most recent analysis, "It is unequivocal that human influence has warmed the atmosphere, ocean and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred."[5]

In addition to the general impacts occurring around the world today, climate change may also be affecting aspects of our ocean environment closer to home, near Newfoundland and Labrador. The Labrador Current, the inner branch of which flows through the Flemish Pass[6] – the proposed location of the Bay du Nord Development Project as well as several exploration programs – is part of the Earth's ocean "conveyor belt", the stability of which is highly important to the global climate system.[7] This conveyor belt, known officially as the Atlantic Meridional Overturning Circulation (AMOC) moves warm salty water northward in the upper layers of the Atlantic and cold fresher water southward.[8] According to the IPCC 2021 *Summary for Policymakers*:

> **The Atlantic Meridional Overturning Circulation is *very likely* to weaken over the 21st century for all emission scenarios**. While there is *high confidence* in the 21st century decline, there is only *low confidence* in the magnitude of the trend. There is *medium confidence* that there will not be an abrupt collapse before 2100. **If such a collapse were to occur, it would *very likely* cause abrupt shifts in regional weather patterns and water cycle**, such as a southward shift in the tropical rain belt, weakening of the African and Asian monsoons and strengthening of Southern Hemisphere monsoons, and drying in Europe.[9] (Italics as in the original. Bold

---

[2] IPCC, 2021: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J. B. R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou (eds.)]. Cambridge University Press. In Press, https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Full_Report.pdf.

[3] See e.g., Government of Canada, "Causes of Climate Change", https://www.canada.ca/en/environment-climate-change/services/climate-change/causes.html .

[4] Government of Newfoundland and Labrador, *The Way Forward on Climate Change*, https://www.gov.nl.ca/eccm/files/publications-the-way-forward-climate-change.pdf.

[5] IPCC, 2021: Headline Statements from the Summary for Policymakers. Sixth Assessment Report. 9 August 2021, https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Headline_Statements.pdf.

[6] See e.g., N. Marshall, F. Saint-Ange, D. JW Piper, and D. C. Campbell, "Late Quaternary history of contourite drifts and variations in Labrador Current flow, Flemish Pass, offshore eastern Canada", *Geo-Marine Letters*, October 2014, p. 458, https://www.researchgate.net/publication/268075455_Late_Quaternary_history_of_contourite_drifts_and_variations_in_Labrador_Current_flow_Flemish_Pass_offshore_eastern_Canada.

[7] Thomsen, Sören, Eden, Carsten and Czeschel, Lars (2014) "Stability analysis of the Labrador Current". *Journal of Physical Oceanography*, 44 (2). pp. 445-463 at p. 445. DOI 10.1175/JPO-D-13-0121.1.

[8] Ibid.

[9] IPCC, 2021: Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J. B. R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou (eds.)]. Cambridge University Press. In Press, p. SMP-36. ("IPCC 2021 Summary for Policymakers").

emphasis is ours).

Additionally, a study of the AMOC reported in the scientific journal, *Nature Climate Change*, in August 2021, found "consistent empirical evidence that, in the course of the last century, the AMOC may have evolved from relatively stable conditions to a point close to a critical transition."[10]

In light of the above, proponents of projects offshore NL as well as decisionmakers must plan for the possibility that offshore activities of all kinds, including oil and gas activities, could be affected by changes in the AMOC due to its vulnerability from climate change. Consequently, individual project assessments such as that for the Bay du Nord Development Project, must ensure they reflect the latest information on the AMOC and potential changes to this critical ocean circulation going forward.

Additionally, and of critical importance in the context of environmental assessments such as that presented in the EA Report, the "regular" potential effects of offshore oil and gas activities on the surrounding ocean environment and its *flora* and *fauna* could be altered and even made worse by climate change-driven impacts to ocean characteristics like temperature, chemistry and current dynamics. Specifically, NCC remains concerned about the specific ways in which oil and gas development can potentially affect VECs as higher temperatures in the climate-changed ocean are affecting the distribution of marine mammals and fish, such as salmon,[11] as increases in acidification affect the shells of crab and shrimp and potentially make them more vulnerable to disease,[12] which in turn may affect how well they tolerate the regular effects expected from oil and gas activities.

As well, future oil and gas development (including both exploration and production) offshore NL may potentially contribute to additional emissions of the "greenhouse gases" (GHGs) that cause climate change. We take the view that, in the context of the climate crisis, each and every incremental increase in GHGs is problematic and must be avoided or mitigated. To state the obvious, if all or most regulators view the GHG sources in their area of jurisdiction as small or "not significant" in terms of objectives at provincial or national levels, and if this results in new emissions, the prospect of getting global emissions under control and avoiding the worst consequences of climate change becomes dimmer.

It is also critical that environmental assessments such as that for the Project look closely at potential methane emissions to the atmosphere from offshore oil and gas activities. Methane (CH_4) emissions have been widely identified by governments and industries alike as a "big bang for the buck"

---

[10] N. Boers, "Observation-based early-warning signals for a collapse of the Atlantic Meridional Overturning Circulation", *Nature Climate Change*, Vol 11, August 2021, pp. 860-688, available online at: https://www.nature.com/articles/s41558-021-01097-4 .

[11] BHP Canada, for example, has acknowledged the existence of "evidence of possible climate-induced salmon prey population changes that may be actively changing salmon distributions within the North Atlantic Ocean over time," BHP Canada, EIS, Ch. 6, "Existing Biological Environment", page 6-71, https://iaac-aeic.gc.ca/050/documents/p80174/134089E.pdf.

[12] Jeffrey D. Shields, "Climate change enhances disease processes in crustaceans: case studies in lobsters, crabs, and shrimps", *Journal of Crustacean Biology*, Volume 39, Issue 6, November 2019, Pages 673–683, https://doi.org/10.1093/jcbiol/ruz072.

method of mitigating GHG emissions. The IPCC underscored the importance of methane emissions by indicating that "[S]trong, rapid and sustained reductions in CH_4 emissions" are important for limiting future climate change.[13]

In essence, due to the impacts of climate change that are already occurring and that are expected to continue for the foreseeable future, the Bay du Nord Development Project will occur in an Eastern NL offshore environment that is *already* affected by climate change. Thus, it is essential that the Proponent and the Agency alike understand and account for these dynamics, synergies and interactions and how they may – in turn – influence the strength of potential effects from development and production on the surrounding marine environment. Otherwise, consideration of "potential effects" in the EA may be inaccurate, possibly in ways that could affect determinations of adverse effects.

IV. Summary of Key Concerns

In these comments, we have identified a number of specific issues in need of further detail, clarification or improvement for both the Draft EA Report as well as the Potential Conditions document. On a general level, our key concerns in relation to the EA are outlined in the bullet points below.

In relation to the Draft EA Report, NCC is concerned:

- That, as explained above, the EA has not sufficiently accounted for and analyzed the baseline ocean environment as already influenced by climate change, nor has it sufficiently considered interactions between climate change impacts on the marine environment and potential effects of oil and gas development and production taking place in that more ecologically challenged environment.

- That potential impacts on Atlantic salmon and its habitat and migratory patterns have not yet been sufficiently studied to a level that allows firm conclusions to be drawn about potential adverse impacts on Indigenous communities and consequently on asserted or established Aboriginal or treaty rights. Uncertainty in the available information requires a strong precautionary approach.

- That despite a finding that adverse residual environmental effects on fish and fish habitat would occur from sound emissions and drilling waste deposition, the EA Report concludes for various reasons that the Project is not likely to cause significant adverse environmental effects on fish and fish habitat". This conclusion does not appear to take into account the fact that the health of various species like Atlantic salmon, already suffering the impacts of

[13] IPCC, 2021: Headline Statements from the Summary for Policymakers. Sixth Assessment Report. 9 August 2021, https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Headline_Statements.pdf.

climate change and other stressors and may be less able to tolerate the adverse residual effects from the Project.

- That the EA Report has not yet sufficiently focused on the regulatory requirements for the Project to identify and mitigate fugitive as well as other sources of methane connected with the Project. In the context of the climate crisis, it is incumbent on industry and government alike to do all that is possible to reduce methane, one of the most powerful greenhouse gases.

- That the EA Report has not yet sufficiently focused on the issue of the potential for large-scale deoxygenation in the ocean environment following a blowout. While blowouts and their impacts may be low probability, this does not negate the need to study all of the potential impacts to the ocean environment if a blowout occurs.

V. General Comments on the Draft EA Report

During the engagement process and in the context of comments submitted by NCC on the proponent's Environmental Impact Statement, we raised several specific concerns about potential impacts to migratory fish and birds that may be affected by the Project. As mentioned in the Introduction, NCC oversees the harvest of birds and fish by NunatuKavut community members. These harvests are highly valued by our people for a number of reasons, including the fact that they provide country foods for our members, which have health benefits, and also serve to connect us in important ways with our culture and traditions. Our specific comments, below, provide more detail on these and other gaps and problem areas we have identified in the Draft EA Report.

Since we last engaged on this Project, however, unusual environmental changes in our region that appear to be linked to climate change, along with an onslaught of extreme weather events globally and the release of the latest IPCC report,[14] has increased our concerns about climate change, its effects, and its causes, including fossil fuel projects both on and offshore. NCC is convinced that, in light of the latest information on climate change, the time has come for the Government of Canada to fully consider that information as critical context for its decision processes on fossil fuel projects going forward, including the Bay du Nord Project.

VI. Specific Comments on the Draft EA Report

Crown Consultation with Indigenous Groups

Please correct the description of NunatuKavut Community Council on p. 28 of the EA Report, which states that NCC represents Inuit people "living in southeastern coastal areas of Labrador". In fact, many of those represented by NCC live in central Labrador, in the municipalities of Happy

[14] Supra note 2.

Valley-Goose Bay, Labrador City and other towns near to those locations. As such, it is more accurate to say that NCC represents Inuit people "living in central and southeastern coastal areas of Labrador" (underlining indicates text to be added).

Fish and Fish Habitat

First, NCC is deeply concerned that in spite finding that "adverse residual environmental effects on fish and fish habitat would occur",[15] primarily through sound emissions from drilling and production rigs as well as drill waste deposition, the Agency still holds the view that "the project is not likely to cause significant adverse environmental effects on fish and fish habitat".[16] NCC firmly believes that the impacts from sound and drilling wastes must be considered in the context of the current and likely future health of various species like Atlantic salmon, which are already suffering the impacts of climate change and other stressors and may consequently be less able to tolerate the adverse residual effects from the Project.

Fisheries and Oceans Canada, in an online resource titled "Frequently asked questions about Atlantic Salmon"[17] offers a clear and instructive Q and A that supports the notion that climate change impacts absolutely must be factored in when looking at effects of other activities on salmon if one is to fully understand potential effects:

> "Question: What are the stressors that impact the survival of Atlantic Salmon?
>
> Answer: Factors influencing salmon survival include the continued stress from high water temperatures and various other ecosystem changes in rivers and oceans due to climate change and other human-induced pressures. The resulting ecosystem changes range from modifications in ocean temperatures, currents and primary productivity to alterations in habitats, water quality, food chains and predators." (emphasis is ours).

The bottom line is that effects from the Project, such as effects from sound disturbances and/or drilling mud deposition, cannot be evaluated as if the salmon were in the state they were in before climate change impacts took hold.

A precautionary approach, which is highly justified given that Atlantic salmon occupy a highly important role in the lives of the Inuit in NunatuKavut communities (as well as other Indigenous groups in NL), must be taken. In practice, this means that more research on the interactions between climate change impacts on salmon and Project-related effects like sound emissions and drilling waste deposition is needed before conclusions can be drawn about the scope, duration and strength of adverse effects from the Project on Atlantic salmon.

[15] EA Report p. 45.
[16] Ibid.
[17] Government of Canada, https://www.glf.dfo-mpo.gc.ca/gulf/fam/recreational-fisheries/2021-faq-atlantic-salmon.

The DFO's 2019 Stock Status Update for Atlantic Salmon in Newfoundland and Labrador[18] described some very concerning trends, including trends affecting the Labrador population (Salmon Fishing Area 2) that is of primary importance to the people of NunatuKavut. This information is absolutely critical to a solid understanding of potential impacts, and it has yet to be factored into the effects analysis.

While NCC understands the Agency's explanation[19] that the 2019 Stock Status Update was published in 2020 prior to the date when the Proponent first finalized the EIS, the Canadian Impact Assessment Registry indicates that the Proponent's Final Environmental Impact Statement was updated July 27, 2021. Thus, there has been time for this more recent information to be integrated. That the draft Potential Conditions for the Decision Statement would require the Proponent to participate in research on Atlantic salmon simply does not negate the need to take note of and factor in the most recent stock status information for Atlantic salmon. In fact, it appears that a Regional Advisory Meeting was held in March 2021 to plan for a new assessment of Atlantic Salmon in Newfoundland and Labrador,[20] hence NCC strongly recommends that both the Agency and the Proponent track closely the progress of this work and take careful note of the results from the next stock status assessment, whenever that may be.

Lastly, NCC is supportive of the point raised by the Agency in relation to the need to look carefully at the potential impacts of water-based drilling muds, in addition to the synthetic-based muds.[21]

Migratory Birds

NCC finds the Agency conclusion in relation to the Project's effect on migratory birds ("not likely to cause significant adverse environmental effects"[22]) a bit hard to square with its statement that "The Agency's conclusion was made taking into account the uncertainties regarding light attraction on migratory birds…".[23] As with the EA's approach to other topics, it seems odd – on a common sense basis – that conclusions about adverse impacts can be made when it is acknowledged that knowledge gaps exist.

Indigenous Peoples

NCC finds the Agency conclusion in relation to Indigenous groups difficult to reconcile because it

[18] DFO. 2020b. 2019 Stock Status Update for Atlantic Salmon in Newfoundland and Labrador. DFO Can. Sci. Advis. Sec. Sci. Resp. 2020/045.
[19] EA Report, p. 192.
[20] Fisheries and Oceans Canada, Terms of Reference - Assessment of Atlantic Salmon in Newfoundland and Labrador, (webpage last modified January 25, 2021), https://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2021/03_02-04b-eng.html.
[21] EA Report, pp.39-40.
[22] EA Report, p. 70.
[23] Ibid.

it is rooted in the view that "[T]he only pathway for potential impacts from routine project activities on Indigenous groups is through impacts to migratory species of importance to Indigenous peoples."[24] While this may be true, the fact remains that there are significant data gaps in relation to migratory species like Atlantic salmon – data gaps that are acknowledged by the government[25] – hence logically, the presence of knowledge gaps makes it difficult and risky to draw conclusions about potential impacts to Indigenous people for whom salmon is a valued country food, with high cultural and historical significance. NCC sincerely hopes that the necessary time will be taken to complete studies prior to any final decision about the Project.

With respect to the impacts of an accidental spill or subsea blowout on Indigenous fishers and communities, NCC agrees with the Draft EA Report statement that the potential impacts from a spill event may decrease the quantity, quality and health of the fish harvested by Indigenous groups. While the Agency views the possibility of a serious accident as unlikely, it admits that because there is a potential for more serious effects on species like Atlantic salmon or species at risk, some potential impacts are created on the asserted or established Aboriginal or treaty rights of Indigenous groups.

Air Quality

NCC's primary concern with this section of the Draft EA Report is that it provides very little coverage of the critical issue of methane emissions. Additionally, there is no discussion whatsoever of identifying, monitoring and mitigating fugitive emissions of methane. This is particularly troublesome in light of the fact that federal regulations authorized under the *Canadian Environmental Protection Act, 1999*, specifically aim at reducing methane emissions, including at certain offshore oil and gas facilities (development and production facilities are considered "upstream" facilities). According to a Government of Canada information webpage on the *Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector)*[26] function to "ensure that fugitive or venting emissions of methane are reduced when there is a higher potential to emit methane."[27] Part II of these regulations cover offshore facilities. Even the Proponent's recently revised (July 2021) Environmental Impact Statement does not mention these regulations. For example, in Table 1.1 in the section of the EIS dealing with the key relevant legislation, regulations and guidelines, *CEPA 1999* is mentioned, but only in relation to *Disposal at Sea Regulations*, not in relation to the methane regulations described above.

For all of these reasons, it appears that the Proponent is not sufficiently aware of or prioritizing the need to identify, monitor and mitigate methane emissions from all sources of its offshore operations. NCC calls upon the Agency to rectify this lacuna with sufficient prescriptive guidance in the final EA Report.

[24] EA Report, p. 104.
[25] EA Report, p. 42.
[26] (SOR/2018-66).
[27] https://pollution-waste.canada.ca/environmental-protection-registry/regulations/view?Id=146.

Accidents and Malfunctions

NCC's review of this section of the Draft EA Report revealed several gaps of concern and several concern methane – a very powerful greenhouse gas. In the discussion concerning blowouts and other unplanned releases of oil or gas below the water, no attention is paid to the risk that a large, sudden release of hydrocarbons into the water column from a blowout or spill could pose to oxygen levels in the water. Ever since the Deepwater Horizon catastrophe resulted in an estimated 1-million-ton deficit in dissolved oxygen attributed to bacterial consumption of escaped methane,[28] scientists have continued to study how methane leaks and natural seeps can result in deoxygenation,[29] which can put certain organisms at risk of hypoxia. Since climate change is already causing some deoxygenation in our oceans,[30] it is imperative that we not add to the problem through accidental subsea releases of methane.

NCC did not find this issue addressed by the proponent in its EIS either, and thus we now ask the Agency to take a precautionary approach that reflects the urgency of the climate crisis and require the proponent to plan for a careful study of deoxygenation, should a blowout or major underwater release occur.

A related gap in the proponent's EIS that, in our view, requires corrective attention by the Agency in its final EA Report concerns prevention of methane leaks, both underwater and directly to the atmosphere. From a brief review of the subject, NCC has become aware that a large body of knowledge currently exists on prevention, leak detection and mitigation of fugitive emissions and other methane releases in relation to offshore platforms, whether for exploratory or production work. NCC has shared reference lists with the Agency on this topic in the past, in the context of other assessments, but would be pleased to share it again, upon request.

NCC believes that the proponent, particularly as a part of the gas and oil industry, has a responsibility to minimize methane releases of all kinds because, in the words of a Princeton University researcher: "The fastest way to reduce the effects of greenhouse gases significantly is by decreasing methane emissions".[31] Researchers such as those at Princeton University have said

---

[28] University of California - Santa Barbara (2011) **"**Gulf oil spill: Methane gas concentrations in Gulf of Mexico quickly returned to near-normal levels, surprising researchers**",** Science Daily, 7 January 2011. www.sciencedaily.com/releases/2011/01/110106145436.htm.

[29] See e.g., Redmond, M. C. and D. L. Valentine (2012), "Natural gas and temperature structured a microbial community response to the Deepwater Horizon oil spill", Proceedings of the National Academy of Sciences 109(50): 20292-20297, https://www.semanticscholar.org/paper/Natural-gas-and-temperature-structured-a-microbial-Redmond-Valentine/2f6bf32c07db27bd258702f6e4b5d0a0f26a1ce7; Kessler, J. D., Valentine, D. L., Redmond, M. C., Du, M., Chan, E. W., Mendes, S. D., Quiroz, E. W., Villanueva, C. J., Shusta, S. S. & Werra, L. M. (2011). "A persistent oxygen anomaly reveals the fate of spilled methane in the deep Gulf of Mexico", *Science* 331(6015): 312-315, https://www.researchgate.net/publication/49734598_A_Persistent_Oxygen_Anomaly_Reveals_the_Fate_of_Spilled_Methane_in_the_Deep_Gulf_of_Mexico; Camilli, R. et al. (2010), "Tracking hydrocarbon plume transport and biodegradation at Deepwater Horizon", *Science* 330, 201_204, https://www.researchgate.net/publication/45720938_Tracking_Hydrocarbon_Plume_Transport_and_Biodegradation_at_Deepwater_Horizon.

[30] Reference to IPCC 2021 on this point to be provided.

[31] Steven Schultz, "Q & A: Princeton U. researchers say controlling methane leads can 'pay off quickly' to lessen effects of climate change", State Impact Pennsylvania, Sept. 22, 2019, https://stateimpact.npr.org/pennsylvania/2019/09/22/qa-princeton-u-researchers-say-controlling-methane-leaks- can-

that that controlling methane leaks around oil and gas wells – whether on land or at sea – offers a powerful way to combat climate change.[32] In a recent study, Princeton researchers found that offshore oil and gas rigs in the North Sea leak more than twice as much methane as they report to the British government, and they did this using measurements from fishing boats downwind of offshore rigs when they were in stand-by mode (e.g., no flaring or transfer of oil).[33]

Another key issue relating to accidents and malfunctions, which we also raised in our comments on the EIS, is the ability of the Proponent to help mitigate the risk of a major blowout through the use of a capping stack and/or drilling relief wells. As we have said before, the long delay of 18 to 36 days for mobilization of a capping stack from Norway or Brazil, and the long period of 100 to 115 days for the drilling of a relief well are simply unacceptable. Rather than be seen as a "plus" to help mitigate potential effects of a blowout, these long delays create enormous risks of harm to the surrounding ocean area and its life. Since prevention and mitigation of the harm seems unlikely in the case of a major blowout, NCC simply does not agree with, nor can it follow the logic of, the Agency's conclusion that after taking into account "the implementation of key mitigation measures", the Project "is not likely to cause significant adverse environmental effects as a result of accidents and malfunctions." We note here that compensation for harm alone, will likely never cover the harm done to Indigenous peoples connected closely to the ocean, such as the Inuit residing in NunatuKavut communities.

Effects of the Environment on the Project

NCC is pleased to see climate change mentioned among the various environmental factors and phenomena that may potentially affect the project. Including this factor is critical in light of the fact that climate change impacts now affect the ocean environment in numerous ways, including but not at all limited to increased extreme weather events, and this altered ocean environment will, in turn, create new challenges for the Bay du Nord Development Project.

Cumulative Environmental Effects

NCC strongly encourages the Agency to take a much broader view of cumulative environmental impacts for the Project than one that looks simply at the effects of oil and gas development and production from the Project combined with the effects from other users in the vicinity. is currently reflected in its section on this topic. The sources of cumulative effects upon valued environmental components are not limited to projects and other human activities in the vicinity of the Project, but must also include natural processes occurring in the environment. Project and other human activities in the ocean occur in an environment that are undergoing changes (e.g. resulting from climate change) and to look at cumulative effects on VECs without taking such processes into effect is to ignore potentially important additive and synergistic effects between oil and gas activities and those natural processes.

pay-off-quickly-to-lessen-effects-of-climate-change/.

[32] Ibid.

[33] Ibid.

Additionally, while we understand that the approach and scope adopted by the Agency for this topic reflect to a large extent how cumulative environmental effects have been handled in various project reviews to date, the fact remains that the approach is too narrow given the strong impact that climate change has had, and is still having, on the baseline environment. Perhaps it is partly for this reason that the approach to cumulative effects in Chapter 11 of the draft Labrador Shelf SEA Update specifically includes climate change in its discussion of sources of potential cumulative effects.[34]

Finally, given that climate change is, in fact, partly the result of past oil and gas extraction around the world, and the impacts of climate change have already begun to change the baseline marine environment in various ways, it seems to us that when considering potential impacts of new oil and gas projects, excluding impacts of climate change from a discussion of cumulative environmental effects results in "tipping the scales" a bit in favour of a no-impact finding.

For these reasons, the Agency finding that, taking into account the implementation of the mitigation measures proposed for the Project, the Project is not likely to cause significant adverse cumulative environmental effects seems inaccurate. Additionally, NCC has difficulty understanding how reasonable the conclusion is on its face in light of the relatively close proximity to other oil and gas projects of an exploratory nature in the region of the Flemish Pass.

VII. Specific Comments on the Potential Conditions Document

Disclaimer and note: While NCC is willing to provide comments on the Potential Conditions document, such comments should in no way be interpreted as evidence of a position that the Project should proceed. That said, we trust that NCC's comments presented below, according to the numbered conditions in the document, may offer certain specific suggestions and recommendations that could substantially improve the conditions in certain areas, should the decision be made to let the Project proceed.

General conditions

2.1 NCC is pleased to see the requirements in this condition that the proponent consider its actions within the Project in a careful and precautionary manner, promote sustainable development and include community and Indigenous traditional knowledge, among other things. This condition would be strengthened, however, by the addition of specific consequences for not fulfilling those requirements.

2.2 NCC strongly suggests specifically requiring the Proponent to stay apprised of any changes flowing from the COSEWIC process. As an important example, in the Fall of 2020, an updated COSEWIC Assessment for Atlantic Salmon was triggered. The previous COSEWIC Assessment was completed in 2010. The DFO Terms of Reference pertaining to this activity states: "[T]he overall objective of this process is to peer-review DFO existing information relevant to the COSEWIC

[34] Aivek Stantec Limited Partnership, *Labrador Shelf Offshore Area Strategic Environmental Assessment Update*, July 26, 2021, Chapter 11, Section 11.1.7, https://www.cnlopb.ca/wp-content/uploads/sealab/lsch10_14.pdf.

status assessment for Atlantic Salmon in Canadian waters, considering data related to the status and trends, threats to the species inside and outside Canadian waters, and to summarize the strengths and limitations of the information."[35] A schedule of activities pertaining to this COSWEIC assessment is provided in the Terms of Reference.

Consultation

2.3.2 Please clarify whether the 15-day period mentioned in this condition refers to time period during which the party or parties being consulted can provide input, or whether it refers to something else. In any case, if it includes Indigenous groups, 15 days is an unreasonably short period of time for such groups to evaluate new information from the proponent, consult with leadership and/or community members as appropriate, and prepare a response. Even the standard 30-day period is burdensome for Indigenous groups like NCC, which often must carry out numerous responsibilities with limited staff and/or resources. NCC recommends a period not shorter than 45 days.

Follow-up requirements

2.6.4 NCC is pleased to see that the levels of environmental change relative to baseline conditions and predicted effects that would require the Proponent to implement modified or additional mitigation measures also includes "instances where the Proponent may require Designated Project activities to stop." If possible, please clarify whether this includes potentially permanent as well as temporary activity stoppages.

Annual Reporting

2.13 NCC favours this condition, which requires the Proponent to communicate with Indigenous groups ahead of time about how they will be updated about research programs.

Change of Operator

2.16 NCC finds that the 60-day notification to the Agency and Indigenous groups in this condition is unreasonably long, and recommends a 30-day period in its place.

Change to the Designated Project

2.17 NCC request that Indigenous groups also be notified in writing in advance – not just the Agency – in case the change desired by the Proponent may have impacts that the Indigenous group may need to react to in order to protect its asserted or established Aboriginal or treaty rights.

2.17.1 Does this condition let the Proponent, alone, determine what environmental effects may result from the change(s) to the project? If so, this seems to circumvent the normal process of

[35] Fisheries and Oceans Canada, "Terms of Reference, Pre-COSEWIC Assessment for Atlantic Salmon" (webpage last modified on October 23, 2020), https://www.dfo-mpo.gc.ca/csas-sccs/Schedule-Horraire/2020/10_26-29-eng.html.

determining environmental effects, which involves an interaction between at least the Proponent and the Agency. NCC does not favour this procedure of letting the Proponent be the sole determiner of potential effects.

Fish and fish habitat

3.1 and 3.3 For both of these conditions, NCC recommends updating the name of the National Energy Board to its current name, the Canadian Energy Regulator.

3.2 This condition seems good, but is an on-shore facility for disposal of drilling muds approved yet? If not, what is its status, and what is the contingency plan if the facility is not approved?

3.6 NCC strongly recommends adding the example of shallow gas to the description of seabed hazards that may be identified during the pre-installation survey, rather than let it potentially be implied under "under seabed hazards". This idea comes from a response the C-NLOPB provided to NCC in the context of the Labrador Shelf SEA Update putting forth our concerns about detecting potential methane seeps from the seabed and avoiding shallow gas pockets. The SEA Update language was accordingly revised as follows:

> Prior to undertaking exploration drilling in the Canada-Newfoundland Offshore Area, an operator will normally conduct a high-resolution geophysical site survey to detect potential drilling hazards. When a hazard such as shallow gas is detected, the well will be relocated to avoid that hazard. In this way, methane (CH_4) emissions to the sea during drilling of the upper portion of a well are avoided.[36]

3.10 NCC is of the opinion that the 30 km measure for concurrent seismic testing is too small and that the area should be at least 50 km rather than 30 km in order to help guard against cumulative effects from concurrent seismic testing. What is the rationale behind the choice of 30 km?

3.14 NCC strongly recommends the addition of a sub-condition that requires Proponents, as part of follow-up requirements, to develop and implement requirements to verify the accuracy of the environmental assessment and mitigation measures on fish and fish habitat not only in relation to wells and subsea infrastructure, but also in relation to the FPSO and any supply and standby vessels because the effects of wastes they discharge to ocean waters should be considered as well.

3.14.3 NCC requests that this condition be modified to include verifying the accuracy of the environmental assessment as it pertains, also, to *cumulative* effects of underwater sound emissions. Please see condition 3.10, above, for an example of why this is preferable.

3.15 Please see our recommendation concerning the new COSEWIC process for Atlantic salmon, under condition 2.2, above.

Migratory Birds

[36] Aivek Stantec Limited Partnership, *Labrador Shelf Offshore Area Strategic Environmental Assessment Update*, July 26, 2021, p. 3-17, https://www.cnlopb.ca/wp-content/uploads/sealab/lsch1_4.pdf.

4.61 and 4.62 NCC prefers to see the FPSO mentioned specifically, rather than possibly implied under the term "Designated Project-related vessels". We do not understand why only MODUs are mentioned, since as we understand it, that term is not typically used to include FPSOs. In any case, conditions related to monitoring for migratory birds need to apply equally to FPSOs and we would like to see that clarified.

Indigenous and commercial fisheries

5.1.2 Similar to the concern just mentioned, please add a specific mention of the FPSO to this condition, which deals with movements of vessels.

5.1.5.5 Unless the Agency determines it to be obvious, NCC recommends specifically naming abandoned wells as some of the subsea infrastructure to which this condition applies.

Air quality and greenhouse gas emissions

6.2 NCC strongly requests that the term "fugitive emissions" be specifically named as one of the greenhouse gas and air emission reduction measures. We urge this because, in general, the issue of fugitive emissions has been sorely overlooked by the Proponent (i.e., there is no mention at all of fugitive emissions in the EIS (updated in July 2021). Fugitive emissions identification and control are important parts of reducing methane emissions.

Accidents and malfunctions

7.1.1 NCC strongly recommends that this condition be modified to add post-tropical cyclones as well as hurricanes to the list that now includes "poor weather, high sea state, and the presence of sea ice or icebergs". Post-tropical cyclones and storms with hurricane force winds are likely to become more frequent as ocean waters become warmer as a result of climate change, which can then spur more storms.

7.7.1 NCC strongly recommends that this condition be modified to include also responding and mitigating a potential secondary effect of an oil spill wherein the spill triggers a deoxygenation process. (The deoxygenation problem is discussed in the main part of our comments, but see also the discussion in the next item, below).

After 7.10.4, additional condition needed

NCC recommends adding a condition, **7.10.5**, that would require the proponent to measure methane released in connection with a blowout or other major subsea accident as well as oxygen levels in the vicinity of the accident, both immediately following the spill and later. The purpose would be to check for deoxygenation, which could potentially affect living things near the accident site. As one research article states: "Hypoxia [low oxygen levels] causes numerous

potential detrimental physiological disturbances in fish, depending on the severity".[37] Negative impacts of hypoxia have been observed at salmon farms, ranging from loss of appetite, growth and activity[38] to massive die-offs with more extreme deoxygenation.[39]

It seems reasonable to think that, whether caused by conditions on a fish farm or caused by deoxygenation following an oil spill, hypoxia can have potentially severe impacts on fish. Climate change is also increasing the risk as it warms the ocean and results in lower dissolved oxygen levels. An article about a very recent fish farm die-off, in which some 93,000 Atlantic salmon perished off the southern coast of Newfoundland as a result of deoxygenation quotes a fish farm representative as saying "lower dissolved oxygen levels are generally associated with higher summer water temperatures and abundance of plankton".[40]

Methodologies for measuring subsea reduction in oxygen when methane is consumed by bacteria have been in use at least since the well-known blowout at the Deepwater Horizon rig, where researchers studied the massive oxygen anomaly left behind after bacteria consumed most of the methane released during the blowout.[41]

After 7.11 or at the end of section 7, additional condition needed

NCC observes that the Potential Conditions document imposes no specific conditions on the proponent with respect to the prevention, detection, monitoring or mitigation of methane from all sources (fugitive as well) emitted from the FPSO or MODUs used in connection with the Project. Methane reduction has been a key concern of research on offshore oil and gas drilling and is attracting increased attention by the industry[42] and with good reason: it is among the most potent of greenhouse gases. As Canada, and the world, confront the climate crisis, adding conditions to ensure the prevention, detection and mitigation of leaks and releases of this potent greenhouse gas should be viewed as a serious responsibility for the Agency in relation to this and all offshore oil and gas projects.

Record keeping

9.3 NCC requests that in addition to notifying the Board and Agency of any change to contact information, the Proponent similarly notify Indigenous groups previously identified in connection with the geographic scope of the Project.

---

[37] M. Hvas and F. Oppedal, "Physiological responses of farmed Atlantic salmon and two cohabitant species of cleaner fish to progressive hypoxia", Aquaculture 512 (2019) 734353, p.2, https://www.sciencedirect.com/science/article/pii/S0044848619313845.

[38] Ibid.

[39] Chris Chase, "Nearly 93,000 salmon die at Mowi NL site", Atlantic Salmon Federation blog, Sept. 14, 2021, https://www.asf.ca/news-and-magazine/salmon-news/nearly-93000-salmon-die-at-mowi-nl-site.

[40] Ibid.

[41] Kessler, J. D., Valentine, D. L., Redmond, M. C., Du, M., Chan, E. W., Mendes, S. D., Quiroz, E. W., Villanueva, C. J., Shusta, S. S. & Werra, L. M. (2011). "A persistent oxygen anomaly reveals the fate of spilled methane in the deep Gulf of Mexico", *Science* 331(6015): 312-315, https://www.researchgate.net/publication/49734598_A_Persistent_Oxygen_Anomaly_Reveals_the_Fate_of_Spilled_Methane_in_the_Deep_Gulf_of_Mexico.

[42] NCC would be pleased to provide a resource list of articles on this topic, upon request.

VIII. Conclusion

After careful review of both the Draft EA Report on the Bay du Nord Development Project and the document on Potential Conditions under CEAA 2012, NCC has identified a number of gaps and other issues in need of improvement or resolution in both documents. NCC respectfully submits this input to IAAC for careful consideration prior to preparation of a final EA Report for the Minister.

NCC thanks the Agency for the opportunity to participate in the review of this Project and looks forward to continuing the conversation about the Project and its potential impacts on NunatuKavut communities. To that end, we would be pleased to answer any questions in relation to the present comments.