

**REGIONAL ASSESSMENT OF OFFSHORE OIL AND GAS EXPLORATORY DRILLING
EAST OF NEWFOUNDLAND AND LABRADOR**
Technical Advisory Group (TAG) Session on *Climate Change*
September 17, 2019
QUESTIONS AND ITEMS FOR DISCUSSION
PARTICIPANT INPUT FORM

Name and Affiliation: Wood Environment & Infrastructure
Solutions

1) Are there any particular information sources or analysis (such as climate change projections) that you think should be accessed and used in the RA?

Yes. The recently released IPCC approved and accepted Special Report on the Ocean and Cryosphere in a Changing Climate, e.g., see <https://www.ipcc.ch/srocc/home/>

This has just been released. We have not had a chance yet to fully digest and glean possible insights and guidance for the RA; however, this valuable resource should not be overlooked for how it might inform and assist the RA.

See also 5).

2) Are there any specific environmental phenomena or changes resulting from climate change that you feel are already having (or will likely have) an effect on the environmental conditions of the Study Area that should be a focus of the RA? In particular, any with implications for the potential environmental effects of future exploratory drilling activities in the Study Area?

3) Are there any particular environmental components and conditions that will likely change over the course of an exploratory drilling program and which therefore require consideration in its initial and on-going planning and implementation? To what degree can such changes likely be anticipated and addressed in initial planning and design, or is an “adaptive management” approach required?

Whether conditions may change or not during the period of a drilling program is one issue. What should not be missed is the opportunity presented simply by virtue of an operator being present in a particular location/region. Logistics costs associated with surveys and data collection can be large; therefore, piggybacking on an operator being on the scene to collect new baseline climate - physical environment and where appropriate or possible fish and marine habitat – data should be strongly encouraged if not required. There are some regions of the RA study area where data are good; other areas not so much.

4) Do you have any suggestions around how the RA should consider climate change in its content and outcomes, including in the eventual recommendations of the Committee?

See also 1 and 5.

a) There is a need for users in the province and for operators and government agencies to be aware of and efficiently avail of global and regional climate change model predictions. This requires liaison with those (lead) scientists (e.g.,

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with Environment and Climate Change Canada and in leading universities (Victoria, Toronto, McGill and UQAM, MUN – e.g. Dr. Joel Finnis work) presently applying these models to North American and Arctic domains which will be relevant for Newfoundland and Labrador and in particular the RA study area. Current global climate models provide predictions for air temperature, precipitation, and other parameters including sea ice, under different scenarios. Separate general circulation models typically yield (at least somewhat) different predictions. Also required are statistical downscaling, or use of different regional dynamical models, to extract and assimilate information for the Newfoundland and Labrador geographic region. These are essential for input to longer term forecasts out to 20, 50, 100 years or other future timelines.

Future climate conditions inherently have some uncertainty, but, establishing a range of possible outcomes for selected scenarios offers the best chance of successful planning and preparation in order to adapt to the changes. The need exists to identify a ‘basis set’ of climate models to consider for decision making. The model strengths and weaknesses, specifically for the Newfoundland and Labrador atmospheric and oceanic domains, must be established. Suitable measurements at the boundaries of these domains and with some adequate spatial resolution throughout will also be required in order to validate and calibrate each model. This in turn requires good physical environmental monitoring – see 5.

5) Do you have any other input or recommendations that you would like to provide to the Committee on this topic?

a) Met-ocean monitoring has long been recognized as an essential activity to support oil and gas exploration and production initiatives in offshore regions. Monitoring of atmospheric and oceanographic parameters is established to satisfy operational information requirements and to comply with the Offshore Physical Environment Guidelines (PEGs) [1].

Recent experience accessing these data, e.g., for EIS preparation, suggests that all of the met, ocean, ice data to be collected with the PEGs are not making their way in a timely and effective manner to their intended destinations. Solutions and actions are required to improve the implementation of the PEGs. This is a responsibility shared by operators, regulators, government agencies and service providers. Having good quality, up-to-date (and least annual, with more-frequent data flows preferred, some of which are in place for some parameters), time-series of environmental conditions for the RA study area is essential for monitoring change. Having best possible data measurements for input to, and development and validation of modelled inputs such as ocean currents for, the various modelling undertakings (e.g., oil spill, mud and cuttings release) is a tangible benefit for exploratory drilling EIS efforts.

Aspects of this monitoring need - as well as other findings and recommendations - have been reported on previously (e.g., [2]) and should be revisited to tackle a number of outstanding gaps in offshore met-ocean practices and follow through on practical solutions which have been recommended. Many of these are low cost-high benefit items. Some improvements have been made; however, work is still required in this regard to improve the safety and efficiency of offshore operations, and in the context of the RA, better serve all stakeholders in their understanding of the physical environment and possible effects for our bird, fish and marine mammal ecosystems.

The resulting improved state of knowledge for the existing (and changing) physical environment would only benefit exploration drilling environmental assessment activities.

[1] National Energy Board, Canada-Nova Scotia Offshore Petroleum Board and Canada-Newfoundland Offshore Petroleum Board. (September 2008). Offshore Physical Environmental Guidelines. Joint Publication. Retrieved from http://www.cnlopb.nl.ca/pdfs/guidelines/peg_guidelines.pdf

[2] AMEC, 2014. State of the Art: Met-Ocean Data for Oil and Gas Operations. Prepared for Petroleum Research Newfoundland & Labrador.

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b) The RA looks to be a very good undertaking and should be kept “evergreen” with new data, thinking and possibly requirements or objectives revisited at least every couple of years. Perhaps some of the data and information flows can be ‘wired in’ so that things can be self-updating. We are particularly interested in how the GIS tools for the RA develop and can be used by interested parties.

All comments received will be considered public and may be posted to the Canadian Impact Assessment Registry. For more information on the Canadian Impact Assessment Registry Terms of Use and Submission Policy, please consult <https://iaac-aeic.gc.ca/050/evaluations/introduction?culture=en-CA#innovation> . For more information on the Agency's privacy policies, consult the [Privacy Notice](https://iaac-aeic.gc.ca/050/evaluations/Protection?culture=en-CA) on its website: <https://iaac-aeic.gc.ca/050/evaluations/Protection?culture=en-CA>