Considering Climate Change in Environmental Assessments under the *Canadian Environmental Assessment Act, 2012*

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Overview

- Canadian context
  - Legislation
  - Climate change considerations in federal environmental assessment (EA)
  - Interim Approach and Principles

- Case Studies

- Conclusions
The Canadian Environmental Assessment Agency

- The Canadian Environmental Assessment Agency (the Agency) is accountable to the federal Minister of the Environment

- The Agency provides high-quality environmental assessments (EA) that contribute to informed decision-making, in support of sustainable development

- The Agency is the responsible authority for most federal EAs
Legislation & Decision

- *Canadian Environmental Assessment Act, 2012*

- Climate change factors must be considered under Act
  - “climate change” not explicitly identified in the Act

- Federal EA is conducted at the project-level

- Decision by the minister
  - whether project is likely to cause significant adverse environmental effects in area of federal jurisdiction
  - Decision by Cabinet if adverse effects are considered significant
  - Decision statement to approve a project includes conditions imposed on the proponent.
Overview of CEAA 2012

- Applies to “designated projects”
  - Identified in regulations or designated by ministerial order
  - Larger projects with greater potential for significant adverse environmental effects

- “Environmental effects” under legislative authority of Parliament or that are directly linked or necessarily incidental to federal decisions
  - Includes transboundary effects, any change the project may cause in the environment that would occur in a province other than the one where the project is being carried out, or outside Canada

- EA considers Effects of the Environment on a Project including those linked to Accidents and Malfunctions

- Types of assessment
Climate Change Considerations – Potential for Transboundary Effect

Greenhouse Gas (GHG) analysis under CEAA 2012

- GHG emissions result in changes to the atmosphere, contribute to climate change at the global level

- International Panel on Climate Change (IPCC) has identified impacts on water, fisheries, agriculture, forestry, human health, coastlines, and Arctic regions

- Since atmosphere is included in the definition of “environment” under CEAA 2012, GHG emissions are a “change to the environment”

- This “change to the environment” contributes to transboundary effects (p.5(1)(b))
Climate Change Considerations – Determining Projects Effects

• Estimate direct and indirect emissions from the project

• Propose mitigations, based on industry standards, requirements related to jurisdictional policies and regulations, etc.

• Compare project emissions with total provincial and national GHG emissions

• Estimated emissions serve as proxy for the project’s contributions to environmental effects resulting from climate change.
Climate Change Considerations – Effects of the Environment on a Project

• Evaluate effects on a project due to climate change effects such as:
  • Changes in precipitation
  • Droughts, extreme floods
  • Landslides
  • Fires
  • Earthquakes
  • Tornadoes
  • Ice jams, avalanches
  • Melting permafrost
• Propose mitigation measures
• Determine significance of residual effects
Interim Approach and Principles

• Principles introduced in January 2016
  • No project proponent asked to return to the starting line;
  • Decisions based on science, traditional knowledge of Indigenous peoples and other relevant evidence;
  • The views of the public and affected communities will be sought and considered;
  • Indigenous peoples will be meaningfully consulted, and where appropriate, impacts on their rights and interests will be accommodated; and
  • Direct and upstream greenhouse gas emissions linked to the projects under review will be assessed.
Upstream GHG Emissions – Considerations in EA

• Government of Canada has committed to providing leadership as Canada works to reduce GHG emissions

• Supports Canada’s implementation of the commitments made in the Paris Agreement
  • Upstream data supports ongoing efforts to achieve Canada’s policy objectives

• Responds to expectations from stakeholders and Indigenous groups that decisions will take into account all impacts that may result from proposed resource development
Upstream GHG Emissions – Analysis

• Environment and Climate Change Canada defines upstream as:
  • “all industrial activities from the point of resource extraction to the project under review and generally include extraction, processing, handling and transportation”

• Supports the cumulative effects analysis

• Decision making considers broader GHG consequences of proposed development

• GHG emissions not within the care and control of the project proponent are not subject to enforceable mitigating conditions
Case Study – Potential for Transboundary Effects
Natural Gas Liquefaction Facility and Marine Terminal

LNG Canada Export Terminal Project, British Columbia
• Requires significant amounts of energy to cool natural gas to a liquefied state

*Mitigation examples:*
• Use of efficient aero-derivative gas turbine technology to drive the refrigeration compressors

• Use of BC Hydro power for auxiliary electricity supply

• Development and adherence to a GHG management plan that would consider best achievable technology and best industry practices
Case Study – Mining
Effects of the Environment on a Project

Seabridge's KSM (Kerr-Sulphurets-Mitchell) Project, British Columbia
excessive precipitation * landslides * glacial movement and melt * seismic activity

Mitigation examples:
• Add redundant capacity to water management and diversion structures
• Excavate ice benches and encroaching ice blocks
• Monitor snow pack, glacial advance and recession
• Monitor slope stability
• Exceed the Canadian Dam Safety Guidelines
Case Study – Energy
Natural Gas Liquefaction Facility and Marine Terminal

Direct GHG Emissions
Pacific Northwest LNG Project, British Columbia

• Direct emissions were initially estimated to be 5.2 million tonnes of CO$_2$e per year. Direct emissions were considered likely to cause significant adverse environmental effects.

• Annual direct emissions were capped at 4.3 million tonnes of CO$_2$e per year, which represents a reduction of 900,000 tonnes of CO$_2$e per year than initially proposed.

• This does not prevent future reductions in emissions as the project is developed if new technologies or emissions reduction strategies become available.
Case Study – Energy

Natural Gas Liquefaction Facility and Marine Terminal

Upstream GHG Emissions

Pacific Northwest LNG Project, British Columbia

• Upstream emissions estimated to be between 6.5 – 8.7 million tonnes of CO$_2$e per year
  • Does not necessarily represent an incremental change to national or provincial inventories

• High in magnitude, continuous, irreversible and global in context

• Upstream emissions considered likely to cause significant adverse environmental effects

• This information provided context for the decisions
Guidance for Practitioners

- Federal-Provincial-Territorial Committee on Climate Change and Environmental Assessment
  - Applies to environmental assessments in all jurisdictions

- The Committee is reviewing the 2003 guidance document “Incorporating Climate Change Considerations in Environmental Assessment: General Guidance for Practitioners (2003)”.
  (Note: available at: https://www.ceaa-acee.gc.ca/default.asp?lang=En&n=A41F45C5-1)

  • Updated guidance document anticipated for release in 2017
    - Revisions will take into account best practices, current policies and other more recent guidance
      - i.e. CEQ Guidance for GHG Emissions and Climate Change Impacts.
Conclusions

• Environmental assessment is well suited to:
  • Improve project design (e.g. lower a project’s direct GHG emissions, mitigate effects of environment on projects)
  • Provide information for decision makers on the volume of emissions and project contribution to overall emissions
• Government has an important role to play in addressing climate change
• Expertise and methodology evolving, work being done to refine methodology and applicability to different sectors, uncertainties remain
• Recognition that project specific EA have limits in addressing climate change
  – cumulative effects vs project assessment
  – conditions restricted to proponent’s project
  – determination of significance of effects for decisions