



Canadian Environmental  
Assessment Agency

Agence canadienne  
d'évaluation environnementale



# Integrating Climate Change and Environmental Assessment: Canadian Experiences

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## How are we doing?

- *“Among the developed countries, Canada is probably furthest along in terms of recognition of climate change considerations within the context of EIA” (Agrawala et al., 2010)*
- *“...the CEAA environmental assessment process has not been used effectively by the Government of Canada in addressing at least one of its own stated environmental priorities – climate change and GHG emissions.” (Hazell, 2010)*



# Overall Approach to Climate Change

- The Government of Canada supports an approach to climate change that achieves real environmental and economic benefits for all Canadians.
- The North American economy is integrated to the point where it makes no sense to proceed without aligning a range of principles, policies, regulations and standards.
- For this reason, we have inscribed a 2020 economy-wide target in the Copenhagen Accord of a 17 per cent reduction from 2005 levels, a target that is aligned with the U.S. target.



# Key GHG Reduction Measures

## Electricity

- Announced intention to regulate coal-fired electricity generation
  - New regulations are for coal-fired plants to take effect on July 1, 2015
  - Proposed regulations to impose tougher performance standards on new coal-fired electricity generation units and on units no longer “of economic value”
  - New regulations will encourage electric utilities to transition towards lower- or non-emitting types of generation

## Renewable Fuels

- Regulations mandating an average 5% renewable fuel content based on the gasoline volume finalized and published September 1, 2010
- Also announced a 2% renewable content requirement for diesel fuel and heating distillate oil – start date still to be determined.

## Transportation

- Have announced regulations to reduce GHG emissions from automobiles and light duty trucks, in alignment with U.S. national standards, and plans for regulations on new heavy-duty vehicles



# Canada is also acting on Adaptation

- **The Government of Canada has invested in a suite of climate change adaptation programming – for the 2008-2011 period, this includes:**
  - **Natural Resources Canada** - \$30M for the Regional Adaptation Collaboratives program and \$5M to develop Tools for Adaptation.
  - **Environment Canada** - \$15M to improve climate change predictions.
  - **Health Canada and Public Health Agency** - \$14.9M to pilot climate and infectious disease alert and response systems
  - **Indian and Northern Affairs** - \$14M to work with northern communities in assessing vulnerabilities and opportunities.
  - **Health Canada** - \$7M for climate change and health adaptation in Northern/Inuit communities.



# Why integrate climate change and EA?

- 2003 Guidelines suggested potential benefits of utilizing the EA process as another tool to address climate change include:
  - Ensuring the EA process is consistent with broader climate change policy
  - Increasing attention to and awareness of GHG emissions from projects subject to EA
  - Stimulating consideration of less emission-intensive ways to design and operate projects
  - Helping proponents manage or reduce the potential risks associated with climate change impacts on their projects
  - Assuring the public that climate change considerations are being taken into account



# Strategic EA and climate change in the Government of Canada

- Federal Sustainable Development Strategy (FSDS) released on October 6, 2010
  - integrated, government-wide approach to environmental sustainability
  - includes federal goals, targets, and implementation strategies for addressing:
    - climate change and air quality,
    - water quality and availability,
    - protecting nature, and
    - shrinking the environmental footprint for government operations
  - for climate change:
    - **Goal:** Reduce greenhouse gas emission levels to mitigate the severity and unavoidable impacts of climate change
    - **Target:** Relative to 2005 emission levels, reduce Canada's total GHG emissions 17% by 2020
- Federal Cabinet Directive requires a Strategic EA of proposed policy, plans, and programs, that considers impacts on FSDS goals and targets
  - So, any government policy, plan or program that may result in GHG emissions requires an analysis of its impact on reaching the target or goal and proposals for mitigation



# Canadian EA Legislation

- *Canadian Environmental Assessment Act*
  - definition of “environmental effect” includes any change the project may cause in the environment and any change to the project caused by the environment
  - projects need to trigger a federal EA
  - approvals require implementation of mitigation measures to eliminate, reduce or control the adverse environmental effects of the project
- Federal EA is conducted at the project level
- Climate change factors not explicitly identified in CEA Act
- Under the Canadian Constitution, environment is a shared responsibility between provincial and federal levels of government
  - 10 different provincial EA regimes; common goal to avoid duplication



# Guidance for Practitioners

- Incorporating Climate Change Considerations in Environmental Assessment: General Guidance for Practitioners
  - Released November 2003
  
- Cooperative approach
  - Prepared by the Federal-Provincial-Territorial Committee on Climate Change and Environmental Assessment



## Guidance includes

- Methods to obtain and evaluate information concerning a project's GHG emissions and the impacts of climate change on a project
- Information sources to address climate change considerations in project EA
- Methodology to encourage consistent consideration of climate change in the EA process across jurisdictions and institutions



# Project's Contribution to GHG Emissions

- Preliminary Scoping for GHG Considerations
- Identification of GHG Considerations
  - jurisdictional considerations, industry profile and project specifics
- Assessment of GHG emissions
  - direct and indirect GHG emissions, and effects on carbon sinks
- GHG Management Plans
  - jurisdictional considerations and project specifics
- Monitoring, Follow-up and Adaptive Management
  - jurisdictional considerations and project specifics



# Effects of Climate Change on Project

- Preliminary Scoping for Impacts Considerations
- Identification of Impacts Considerations
  - regional considerations and project sensitivity
- Assessment of Impacts
  - impact on project and risks to public and the environment
- Impacts Management Plans
  - project specifics and ongoing data clarification
- Monitoring, Follow-up and Adaptive Management



## Project examples

- There is mixed experience with federal EAs and their use of the Guidelines
  - Most give no clear indication of whether they used the Guidelines
  - A small number of projects explicitly relied on the Guidelines to structure their analysis of climate change
    - e.g. Lower Mattagami Hydroelectric Complex Redevelopment comprehensive study
    - “Overall, the effects of climate change on the project are expected to be gradual in occurrence and are considered minimal in effect... the physical structures and systems that could be affected by a change in climate parameters will be monitored and modifications implemented, if required.”



# Sydney Tar Ponds Remediation Project

- Remediation of a former coke oven site in Nova Scotia
- Joint Canada-Nova Scotia Review Panel
  - report issued July 2006
- Panel considered the following potential effects of climate change on the project
  - predicted temperature increase of 3-4 degrees for the Atlantic region and changes in precipitation patterns
  - an increase in extreme weather events such as hurricanes, rainfall and a sea level rise, including storm surges, of a meter or more above normal
- Due to relatively short construction and operation period, climate changes not seen as having a significant effect on the project
- Illustrates some of the challenges to address in integrating climate change adaptation considerations in EAs



# Kearl Oil Sands Project

- Oil sands project in Alberta
- Joint Canada-Alberta Review Panel
  - report issued in February, 2007
- Air emissions an important issue
- Judicial Review Application
  - Federal Court found that panel failed to provide rationale supporting conclusion that proposed mitigation measures would reduce potentially adverse effects of the Project's GHG emissions to a level of insignificance
- Review Panel provided additional rationale in May 2008
- Illustrates some of the challenges to address in integrating GHG emission considerations in EAs



## Where to from here?

- There are a number of potential areas to consider (not an exhaustive list!):
  1. Improving and promoting the use of the guidelines, including guidance on methodologies and analysis tools
  2. Determination of significance
  3. Mitigation vs. adaptation – what is the appropriate policy mechanism?
  4. Legislative/regulatory changes
  
- **All suggested to stimulate discussion – no policy decisions have been made on how the CEA Agency will move forward**



# 1. Improving and promoting the use of the guidelines

- Usage of the 2003 Guidelines is hit and miss
- Several areas in the Guidelines could be improved to be more relevant (for both federal and provincial EA)
  - Linkage to most up-to-date climate impacts scenarios, regional downscaling results, etc.
  - Guidance on treatment of uncertainties in climate change projections
  - Incorporation of best practices for project GHG quantification protocols
  - Guidance on assessing significance, and how to treat overall emissions reduction policies, programs and regulations



## 2. Determination of significance

- GHGs take effect at global level, rather than local, and from wide range of dispersed sources
  - One could argue that any single project's emissions make an essentially negligible contribution to global climate change
- Should the threshold used for emission reporting requirements be a starting point?
  - e.g. proposed in draft CEQ/NEPA guidance: 25,000 tonnes of CO<sub>2</sub>-eq/year
  - not really a threshold for significant effects, but a minimum level of emissions that may warrant attention
- Does satisfying a target set under overall government climate policy make a project's GHG emissions acceptably insignificant?



### 3. Mitigation vs. adaptation – what is the right policy mechanism?

- Perhaps project EA is better suited to address adaptation to CC impacts, rather than GHG emissions reduction?
  - Governments have been slow to implement requirements for adaptation
  - EA project approvals could provide an opportunity to ensure that adaptation measures are built in to the project (where the certainty of climate impacts is sufficiently high)
- Should GHG reduction goals be achieved via the EA process, or via overall climate change policy?
  - Do government GHG reduction targets represent a science- and policy-determined acceptable level of GHG emissions?



## 4. Legislative/regulatory changes

- Upcoming Parliamentary review of the CEA Act may consider fundamental EA reform
  - Standing Committee may consider issues such as:
    - use of sustainability frameworks for assessments
    - incorporating socio-economic considerations
    - adding projects subject to GHG regulations or policies to the list of triggers for federal EA
  - Could have an impact on how we conduct federal EAs as they relate to climate change



## Key messages

- The Government of Canada is acting to combat climate change
- Federal EA can and does play a role in that process
- Some positive steps have been taken, and some progress has been demonstrated in both strategic EA and project EAs, but more remains to be done