



Draft revisions, GHG Emissions and Climate Change (Filing Manual Tables A-2 and A-4, Electricity Filing Manual Tables 6-2 and 7-1).

Table A-2 FM and Table 6-2 EFM:

GHG Emissions and Climate Change	
Filing Requirements	Guidance
<p>1. Direct-Net GHG emissions – for project construction and for project operations and decommissioning - (including maintenance):</p> <ul style="list-style-type: none"> describe the sources of GHG emissions; provide a quantitative estimate of net GHG emissions by year for each phase of the project based on the maximum or additional throughput/capacity; provide a project's emission intensity for each year of the operation phase of the project; of GHG emissions; identify and explain which climate change laws, regulations and policies apply to the project and associated GHG emissions and to what extent; provide the GHG emissions as a percentage of total sector-based emissions, and as a percentage of provincial and national reported GHG emissions; describe the mitigation measures to be implemented for GHG emissions reduction and for continuous improvement of GHG emissions management; and for proponents of projects with a lifetime beyond 2050, project applications must include a credible 	<p>The guidance below considers the principles and objectives of Environment and Climate Change Canada's (ECCC) <i>Strategic Assessment of Climate Change (SACC)</i>. As noted in the Filing Manual section A.2.4 Level of Detail, the depth of analysis should be commensurate with the nature of the project and the potential for effects. A scalable approach, as provided in Figures 1- to 4, can inform the level of information an Applicant may file¹.</p> <p>Net GHG emissions:</p> <p>The proponent is expected to follow the GHG quantification guidance in the SACC, and provide the information outlined in the SACC section 5.1.1. Section 2 of the draft <i>Technical Guide Related to the Strategic Assessment of Climate Change: Guidance on quantification of net GHG emissions, impact on carbon sinks, mitigation measures, net-zero plan and upstream GHG assessment</i> (the 1st Technical Guide), provides further details on the net GHG emissions calculation and quantification methodologies.</p> <p>The GHG emission assessment should include, as appropriate:</p> <ul style="list-style-type: none"> A description of each of the project's main sources of GHG emissions and their estimated annual GHG emissions over the lifetime of the project. This can include combustion (including flaring and incineration), venting,

Commented [E(1): Table B-1 in the filing manual lists GHG emissions as a valued component. ECCC considers that under the IAA, GHG emissions are not a valued component, but rather a separate factor to be considered under section 22(i). This is equivalent to the factor of section 183(2)(j) of the CER Act.

Commented [E(2): ECCC edits follow the project phases outlined in the SACC (construction, operation and decommissioning).

Commented [E(6): ECCC notes that we do not use a scalable approach for the SACC in terms of requirements.

Commented [E(3): This does not align with SACC guidance. The proponent's comparison usually states that a single project is insignificant compared to emissions of the sector, province, and country (or sometimes global emissions), which is an obvious conclusion. It's not clear how this information would be used in decision-making.

Commented [E(4): ECCC suggests having this as it's own section, as there are quite a few considerations for assessing mitigation measures. See below.



~~plan to achieve net-zero emissions by 2050; and~~

- ~~discuss how the project may hinder or contribute to Canada's efforts to~~

(including planned depressurizations) and fugitive sources,

- net GHG emissions by year for each phase of the project based on the project's maximum throughput or capacity (new project) or additional throughput or capacity (replacement or expansion project);
- each term of the net GHG emissions calculation (direct GHG emissions, acquired energy GHG emissions, CO2 captured and stored, avoided domestic GHG emissions and offset credits, if applicable), per year for each phase of the project;
- emission intensity for each year of the operation phase of the project. It may be useful to provide a comparison of the project's magnitude of predicted project emissions with comparable projects, federal, provincial, and sector totals, as well as to Canada's GHG reduction targets (discussed below);
- the quantity and a description of the "units produced" for each year of the operation phase of the project;
- methodology, data, emission factors and assumptions used to quantify each element of the net GHG emissions;
- a discussion on the development of emissions estimates and uncertainty assessment; and
- a description of large sources of GHG emissions that may be the consequence of accidents or malfunctions

Commented [E5]: ECCC suggests having this as it's own section to enable consideration of all of the GHG / climate change aspects (net-zero plan, upstream etc.). See below.

Commented [E8]: This comparison requirement is not relevant to the SACC, and ECCC has advised against this comparison for several projects. Furthermore, it is unclear why a comparison to emissions reductions targets is needed (it compares new emissions to targets based on 2005 baseline levels – what is CER looking for here?).



- clarify the approach to determining avoided domestic emissions and what ~~domestic avoidance, project-specific mitigation and offset measures~~ mitigation and offset measures have been taken into account in the quantitative estimate; and describe the criteria used for this

- be provided as quantities of individual gases and in terms of carbon dioxide equivalent;

for project operations, be provided on an absolute annual basis and in emission intensity terms; and.

Applicants may consider using appropriate industry-wide estimates for their assessment of GHG emissions, insofar as these are currently up to date.

If project operations depend on electrical or other energy requirements (e.g., to supply power for facility stations) that must be acquired from a third party or other corporate entity, these must be included in the project's net GHG emissions assessment of this should also be t.

The discussion of laws, regulations and policies should cover those at relevant regional, provincial, federal and international levels. Examples might include

- targets, carbon pricing, mandatory reductions or offsets, and reporting programs.

In assessing the extent of emissions, consider relevant sector-based totals as well as provincial and national reported emissions for comparison. Regional

Commented [E9]: Unclear what CER's expectation is here. The first [Draft Technical Guide](#) under the SACC includes an approach/methodology that can be used.



airshed-based studies may also be applicable. Discuss [how](#) the project's [predicted](#) GHG emissions ~~as a percentage compare to Canada's of governmental~~ GHG reduction targets.

[The GHG emissions assessment should consider relevant estimating, reporting and other technical guidance, such as:](#)

- [Environment and Climate Change CanadaECCC's Strategic Assessment of Climate Change and related Technical Guides \(as released and updated\)](#)

~~Environment and Climate Change CanadaECCC's Reporting greenhouse gas emissions~~

- [Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds \(UpstreamOil and Gas Sector\) \(SOR/2018-66\)](#)
- [Environment and Climate Change CanadaECCC's sector-specific tools to calculate emissions- including t:](#)

- [The Natural Gas Combustion Emissions Calculator produced byCanadian Energy Partnership for Environmental Innovation \(CEPEI\)](#)
- [Impact Assessment Agency of Canada's guidance: Policy Context: Considering Environmental Obligationsand Commitments in Respect of Climate Change under the Impact Assessment Act-](#)

- [Considering Environmental Obligationsand Commitments in Respect of Climate Change under-](#)

Commented [E(10): Note that this list has just moved it within the document, so it shows as tracked change.



	<p>the Impact Assessment Act</p> <ul style="list-style-type: none">▲ Impact Assessment Agency of Canada's guidance: The Canadian Environmental Assessment Agency's Incorporating Climate Change Considerations in Environmental Assessment: General Guidance for Practitioners▲ The GHG Protocol Corporate Accounting and Reporting Standard (World Resources Institute and World Business Council for Sustainable Development) (BCSD)▲ International Standards Organization standards:<ul style="list-style-type: none">○ International Standards Organization standard ISO-14064:1○ ISO-14064:2 <p>Provincial estimating and reporting guidance could also be followed, such as:</p> <ul style="list-style-type: none">▲ Alberta Energy Regulator Manual 015: Estimating Methane Emissions (2020)▲ Update of Equipment Component and Fugitive Emission Factors for Alberta Upstream Oil and Gas (prepared by Clearstone)▲ Clearstone Update of Equipment Component and Fugitive Emission Factors for Alberta Upstream Oil and Gas Study• Greenpath 2016 Alberta Fugitive and Vented Emissions Inventory Study
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¹ [Note: the thresholds will be established based on feedback received during engagement with other government departments, Indigenous peoples, industry and other relevant stakeholders.](#)



GHG Emissions and Climate Change	
Filing Requirements	Guidance
<p>2. Impact of the Project on Carbon Sinks – projects must evaluate the impact on carbon sinks:</p> <ul style="list-style-type: none"> Proponents are required to evaluate the project's impacts on carbon sinks, separate from the GHG emissions associated with land-use change. Proponents must provide a quantitative and qualitative description of the project's positive or negative impact on carbon sinks, since some projects may improve or reduce the ability of an ecosystem, land area or ocean to absorb carbon dioxide from the atmosphere. <p>3. Mitigation Measures</p> <ul style="list-style-type: none"> Proponents are required to describe the mitigation measures they will take expected to undertake a comprehensive assessment of the various mitigation measures, best available technologies and best environmental practices (BAT/BEP) to minimize GHG emissions in the construction, operations and decommissioning throughout all phases of the project. The analysis of mitigation measures should follow the principles/principles of the SACC, and include a Best Available Technologies / Best Environmental Practices (BAT/BEP) Determination. <p>2. Construction and Operational emissions from third party energy sources – if there are electrical or other energy requirements for project construction and operations that are not considered in the direct emissions assessment:</p>	<p>Impact on Carbon Sinks The SACC section 5.1.2 and the 1st Technical Guide section 4 provides methodologies and guidance on performing a qualitative and quantitative assessment on the impact on carbon sinks.</p> <p>Mitigation Measures Information requirements for mitigation measures are outlined in Section 5.1.4. of the SACC. Section 3 of the 1st draft Technical Guide provides further details on principles and the BAT/BEP Determination Process.</p> <p>Discussion of mitigation measures, including the use of best available technologies/best environmental practices, should include the alternative means considered to reduce GHG emissions and how. The proponent should provide justification for why the preferred option was chosen, such as technical and economic feasibility. Consider the appropriateness and potential of offsets, selected. Project design features or proposed mitigation measures may should limit or reduce the extent to which a project hinders Canada's ability to meet its commitments in respect of climate change.</p> <p>Further mitigation discussion can also be included in the credible plan to reduce emissions to net-zero by 2050.</p> <p>Section 5.1.4. of the SACC outlines information requirements for mitigation measures. Section 3 of the 1st draft Technical Guide provides further details on principles and the BAT/BEP determination process.</p>

Commented [E11]: ECCC suggests breaking each number (2-6) out into it's own section (similar to how upstream emissions are a separate section). It is quite long and hard to follow between the two columns when there are multiple topics within one section.

Commented [E13]: Under the SACC, alternative means are only discussed in the planning phase.

Commented [Z14]: Suggest raising technical and economic feasibility as justification

Commented [F12]: This should be included in the net GHG estimate as 'acquired energy', not as it's own separate category.



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du Canada

—describe these requirements and the
expected sources of that energy;



GHG Emissions and Climate Change	
Filing Requirements	Guidance
<p><u>2.4. Net-Zero Plan</u> - for projects with a lifetime beyond 2050, applications must include a credible plan to achieve net-zero emissions by 2050.</p>	<p><u>Net-Zero Plan</u></p> <p>All projects will be assumed to have lifetimes beyond 2050, unless otherwise demonstrated.</p> <p><u>The SACC section 5.3. and the 1st draft Technical Guide section 3.5. provide further details on the development and contents of a plan to achieve net-zero emissions by 2050. The plan will complement and be informed by the GHG mitigation measures planned by the proponent. A credible net-zero plan should include based on the principles outlined in the SACC and related Technical Guides. The plan should include:</u></p> <ul style="list-style-type: none"> <u>actions that will be taken to achieve net-zero emissions by 2050, including an implementation schedule of for the actions;</u> <u>a description of the approach to using determining avoided emissions and using offset credits;</u> <u>any additional project-specific mitigation and offset measures that will be implemented for the project to achieve net-zero emissions by 2050;</u> <u>a description of the process that will be followed in order to make the decisions and investments needed;</u> <u>supporting information and/or assumptions for each action or measure, including a discussion of factors such as associated costs, potential impacts on tolls, technical challenges, risks, infrastructure requirements and any other relevant</u>

Commented [E15]: How does this differ from the description requested under the original direct emissions component (see bottom of page 2 of this document)?



	<p><u>considerations; and</u></p> <p><u>periodic project milestones that demonstrate GHG reductions towards net-zero. The periodic milestones should incorporate assumptions and also account for evolving regulatory measures and policies.</u></p> <p>• <u>See section 5.3 of ECCC's <i>Strategic Assessment of Climate Change</i> for more details and related Technical</u></p> <p>. Proponents must also describe how the Project meets Canada's commitment to reduce GHG emissions by 30 per cent below 2005 levels by 2030. If project operations depend on electrical or other energy requirements (e.g., to supply power for facility stations) that must be acquired from a third party or other corporate entity and that are not included in the project's direct emissions assessment, then an assessment of this should also be included.</p>
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GHG Emissions and Climate Change	
Filing Requirements	Guidance
<p><u>5. Impact of the project on federal emissions reduction efforts and on global GHG emissions</u></p> <p>The proponents must discuss the impact of the project on Canada's efforts to reduce GHG emissions, as well as how the project could impact global GHG emissions.</p>	<p><u>Impact of the project on federal emissions reductions efforts and on global GHG emissions</u></p> <p>The proponent is expected to provide the information outlined in the SACC section 5.1.3. including:</p> <ul style="list-style-type: none"> • <u>An explanation of how the project may impact Canada's efforts to reduce GHG emissions, if applicable.</u> • <u>A discussion on how the project could impact global GHG emissions, if applicable. This could include, for example:</u> <ul style="list-style-type: none"> ○ <u>If there is a risk of carbon leakage if the project is not built in Canada, they could include an explanation of the likelihood and possible magnitude of carbon leakage if the project is not approved.</u> ○ <u>If the project may displace emissions internationally, they could describe how the project is likely to result in global emission reductions.</u>
<p><u>3.5. Climate change Resilience-resilience</u> – See Filing Manual Table A-2 – Physical and Meteorological Environment, for requirements and guidance. <u>Proponents are expected to undertake an assessment of the resilience of the project to climate change impacts.</u></p>	<p><u>Climate Change Resilience</u></p> <p>The proponent is expected to provide the information outlined in the SACC sections 5.1.5. including:</p> <ul style="list-style-type: none"> • <u>The scope and timescale of the climate change resilience assessment and of the methods used to identify, evaluate and manage the climate risks that could affect the project itself</u>

Commented [E16]: This reference is unclear (it refers back to this same table).



and thereby the surrounding environment; and

- The project's vulnerabilities to climate change both in mean conditions and extremes over the full project lifetime from project construction to decommissioning. This could include the impacts of extreme weather events on project infrastructure, impacts to water quality and availability, etc.

The draft Technical Guide **Related to the Strategic Assessment of Climate Change: Assessing Climate Change Resilience** (the 2nd technical guide) provides a consistent and coherent approach to assessing how a project is resilient to, and at risk from, both the current and future impacts of a changing climate.

The GHG emissions assessment should consider relevant estimating, reporting and other technical guidance, such as:



GHG Emissions and Climate Change – Assessment of Upstream GHG Emissions	
Filing Requirements	Guidance
<p>1. Upstream GHG emissions –</p> <ul style="list-style-type: none"> Applicants should indicate if the upstream emissions associated with the project are likely to be above or below the applicable threshold presented in Section 3.2 of the ECCC's Strategic Assessment of Climate Change. If above the identified threshold, provide an assessment of upstream GHG emissions based on currently available Environment and Climate Change Canada (ECCC) guidance. 	<p>Upstream Emissions</p> <p>In accordance with ECCC guidancethe SACC, the assessment of upstream GHG emissions should consist of two parts:</p> <ul style="list-style-type: none"> Part A should provide a quantitative estimate based on the project's maximum throughput (or additional throughput for expansion or replacement projects). Part B should provide a qualitative discussion on the extent to which those upstream emissions may (or may not) be incremental as a result of the project. <p>This assessment should describe the methodology, data and assumptions used, as well as explain how the assessment is consistent with the supply forecast and analysis of the need for the project.</p> <p>Note: The plan to achieve net-zero emissions does not apply to upstream GHG emissions, even if an upstream GHG emissions assessment is conducted.</p> <p>Further guidance and practice for upstream GHG emissions estimation can be found in includes: Section 3.2, and 3.3, of the SACC outlines information requirements for an upstream emissions and uncertainty assessment. Section 5 of the 1st draft Technical Guide provides further details on performing an upstream assessment. ECCC's Strategic Assessment of Climate Change and related Technical Guides (as released and updated).</p> <p>ECCC's proposed methodology for estimating the upstream GHG emissions</p>

Commented [E17]: How is the applicant expected to determine this? How will CER ensure that the proponent's determination of whether and upstream GHG assessment is required or not is accurate? There could be a potential risk that upstream emissions are not assessed because the Applicant does not correctly characterize the likelihood of exceeding the threshold (for example, if the methodology used is not sound, or they claim to be under the threshold in order to avoid having to complete a full assessment).



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	<p>associated with major oil and gas projects</p>
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	<p>undergoing federal environmental assessments (Canada Gazette, Part 1, March 19, 2016).</p> <p>Previous ECCC assessments of upstream GHG emissions for past pipeline projects may provide examples.</p> <p>Explain how the assessment is consistent with the supply forecast and analysis of the need for the project.</p>
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	<p>undergoing federal environmental assessments (Canada Gazette, Part 1, March 19, 2016).</p> <p>Previous ECCC assessments of upstream GHG emissions for past pipeline projects may provide examples.</p> <p>Explain how the assessment is consistent with the supply forecast and analysis of the need for the project.</p>
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Table A-4 FM and Table 7-1 EFM:

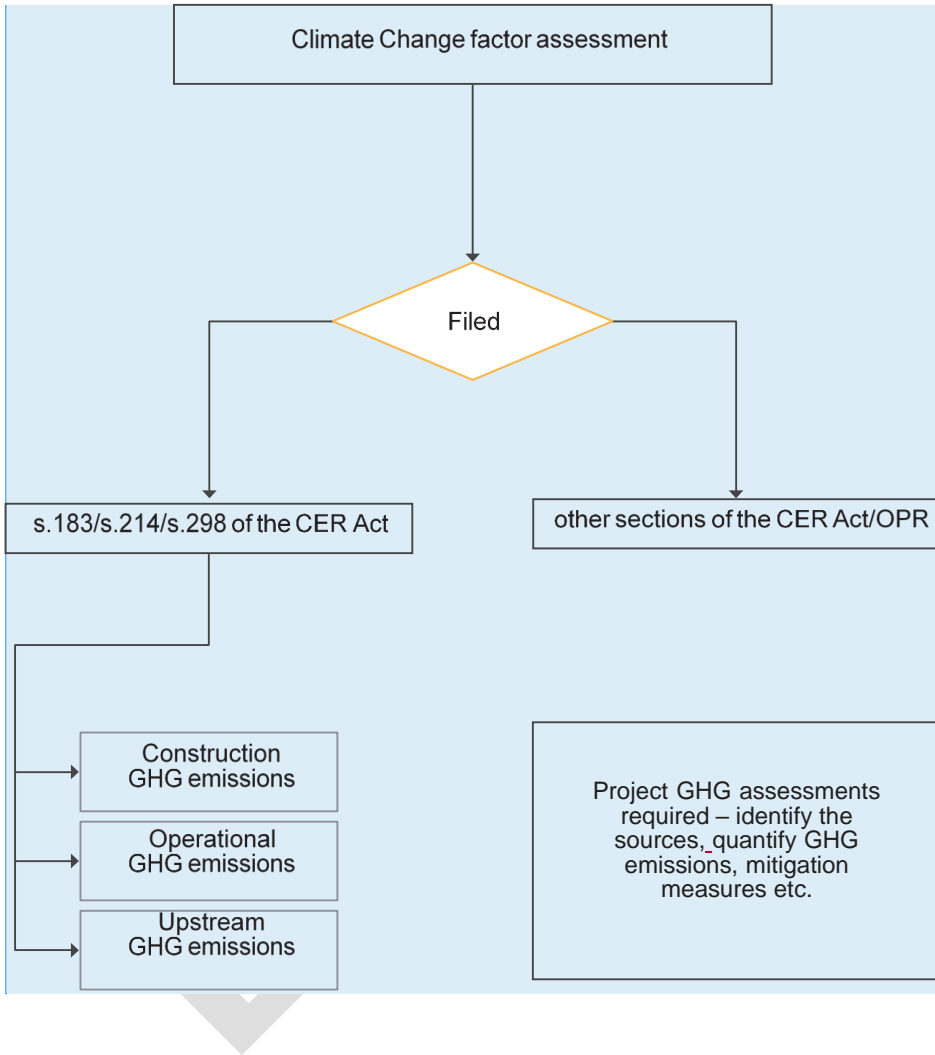
Economics and Financing	
Filing Requirements	Guidance
<p>Provide an explanation of how current climate change laws, regulations and policies, and financial risks or other uncertainties around commitments and future changes have been incorporated in the economic analysis of the project.</p>	<p>As noted in the <i>Filing Manual</i> section A.2.4 Level of Detail, the depth of analysis should be commensurate with the nature of the project and the potential for effects.</p> <p>For all projects, the applicant should, at a minimum, describe how current climate change laws, regulations and policies have been considered in assessing the expected utilization of the project, and discuss if and how the economic feasibility of the project may be impacted by financial risks and other uncertainties around changes to such climate change laws, regulations and policies. For a larger project, the applicant should also describe how existing climate change laws, regulations and policies have been included in relevant analysis and assumptions. Also include those laws and, regulations that are reasonably expected to come into force, and policies reasonably expected to come into place, and policies which have been drafted and tabled at a provincial or federal level and but which although not yet in force, may reasonably become so and are not purely</p>



	<p>speculative. Discuss implications of these laws, regulations, and policies for supply and markets in any scenario analysis or risk assessment of these factors (e.g., applicant may consider doing a sensitivity analysis of supply and markets based on carbon pricing levels). Applicants should also describe the extent to which climate change commitments have been considered. ECCC's Environment and Climate Change Canada's Strategic Assessment of Climate Change should be consulted for its project requirements and the potential implications for the project's economic analysis.</p> <p>Applicants should describe how the credible plan to achieve net-zero emissions by 2050 may impact the economic feasibility of the project.</p>
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Commented [E18]: Should GHG mitigation measures also be considered here? One of the steps of the BAT/BEP Determination Process is an economic feasibility assessment.

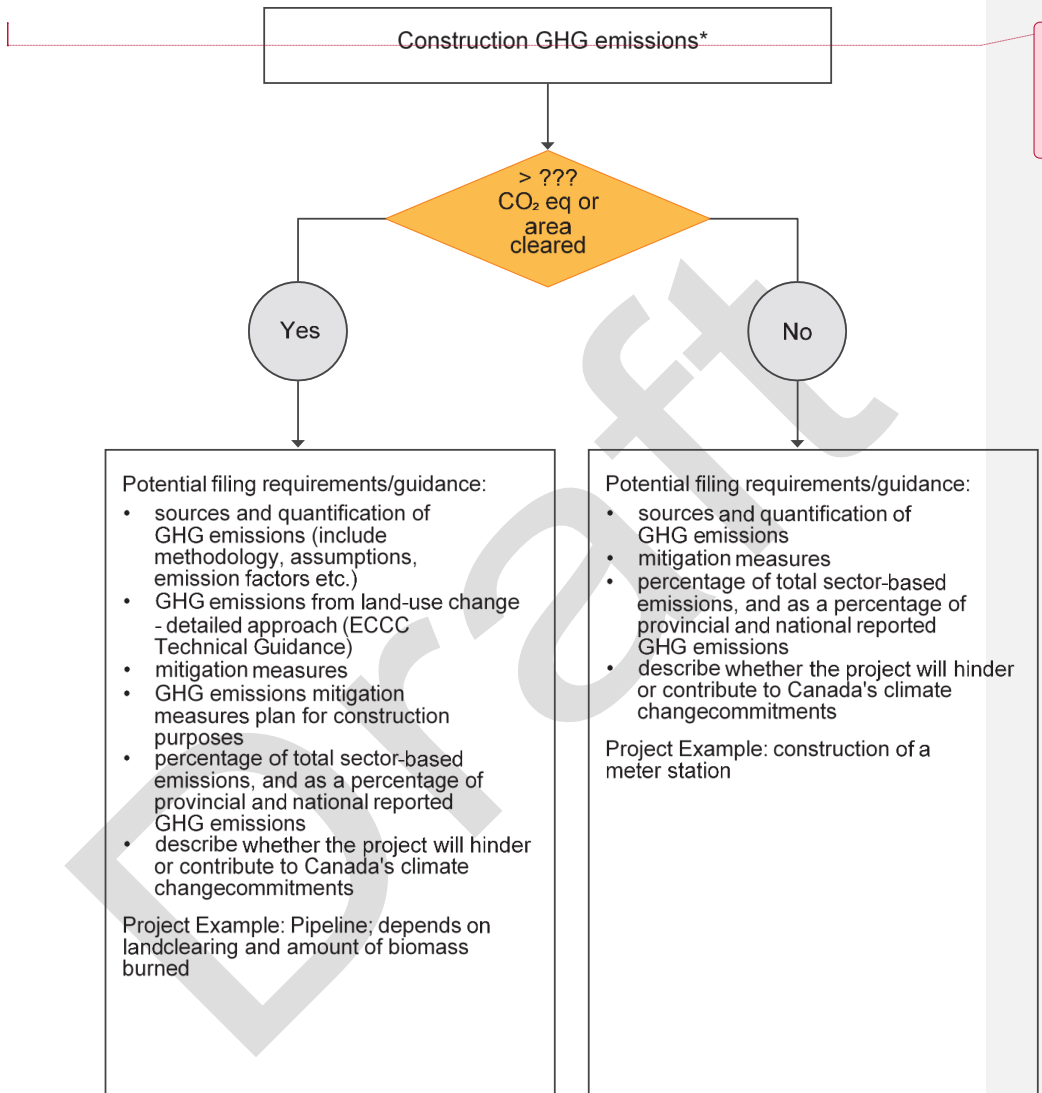
Draft



Commented [F19]: Include decommissioning as a phase in the bottom left

Commented [E20]: This figure is unclear. What happens to "other sections of the CER Act/OPR"? Is no GHG assessment required? How does the box in the bottom right corner relate to the rest of the diagram?

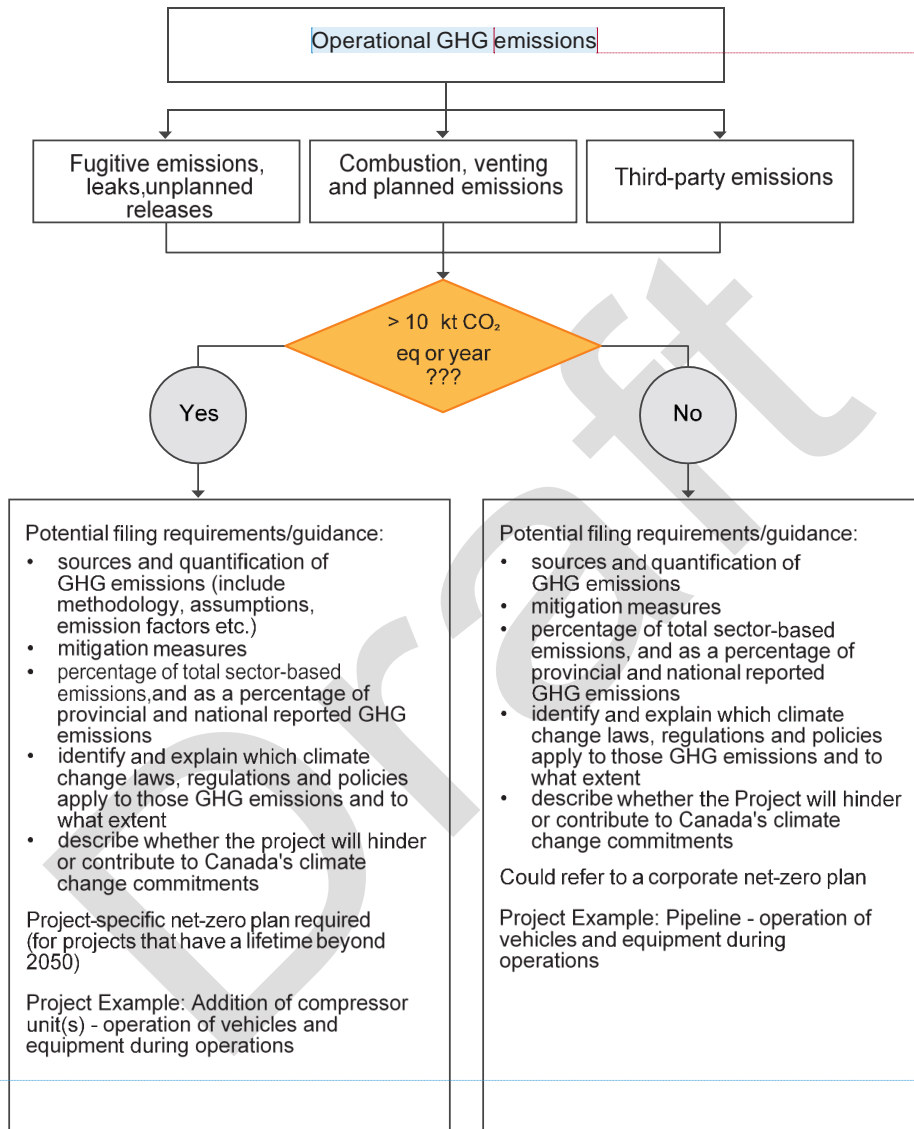
Figure 1: Scalable approach



Commented [E(21): ECCC suggests that the threshold referred to here should reflect figure 4 of the 1st technical guide. Under the SACC, land-use change related emissions should be calculated for ALL projects, but the methodology that should be used depends on the tiered approach based on project area.

*Construction emissions released before 2050 are not required to be captured by the Project-specific net-zero plan (could refer to a corporate plan)

Figure 2: Scalable approach – Construction GHG emissions



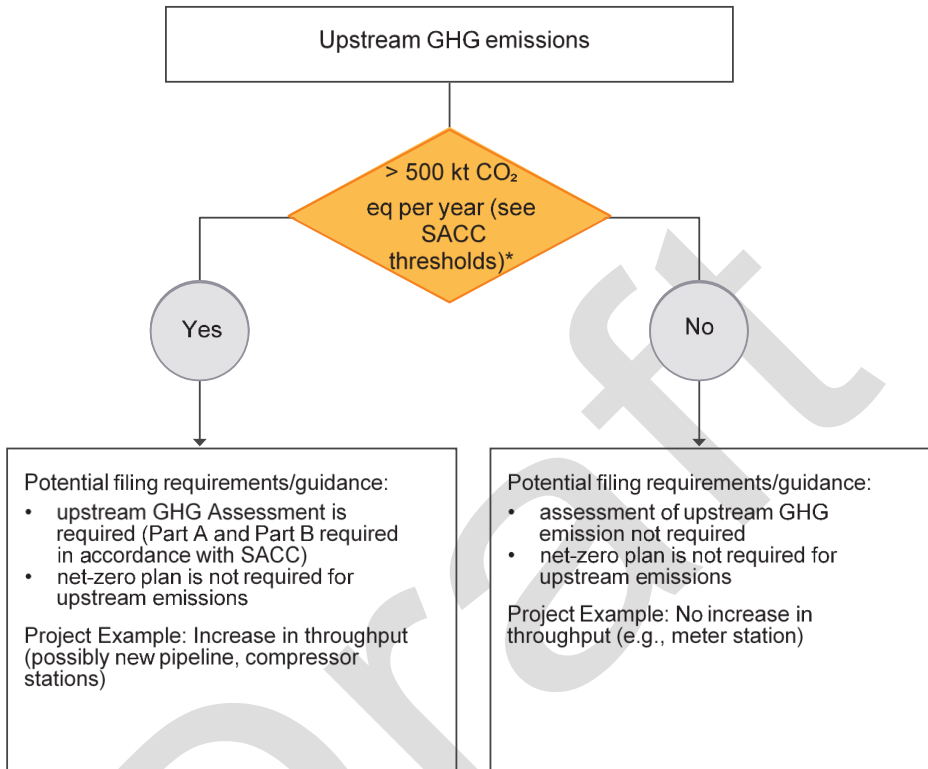
Commented [E22]: How does this threshold compare to the guiding question from the GHG supplemental guidance document about "high, medium or low volumes of GHG emissions"?

Does this figure include maintenance-related emissions?

In line with ECCC comments on the supplemental guidance document, The SACC requires a project-specific net-zero plan for all projects beyond 2050, and ECCC does not see benefit to or request a comparison of project emissions to a % of sector/provincial/national emissions

Commented [F23]: Include another chart for the decommissioning phase. Could be based on GHG emitted per year, or just if the project answered 'yes' to the construction or operations emissions threshold question.

Figure 3: Scalable approach – Operational GHG emissions



*thresholds decline over time, as set out in the SACC

Commented [E(24)]: Would CER plan to adjust the yellow diamond in 2030?

Figure 4: Scalable approach – Upstream GHG emissions



Greenhouse Gas Emissions and Climate Change Supplemental Guidance (draft)

1. Regulatory Context and Background

The *Canadian Energy Regulator Act*¹ (**CER Act**), which came into force in 2019, outlines the factors that the Commission of the Canada Energy Regulator (Commission) must consider when making a decision or recommendation for certain projects, including pipeline and powerline projects. In particular, new to the CER Act, a factor that the Commission must take into account is the consideration of environmental obligations and climate change commitments (Factor), as stated below:

“The extent to which the effects of the [project] hinder or contribute to the Government of Canada’s ability to meet its environmental obligations and its commitments in respect of climate change.”²

A similar factor was added to the federal *Impact Assessment Act*³, which was enacted at the same time as the CER Act. In January 2020, the Impact Assessment Agency of Canada outlined the [policy context](#) for this Factor. The document provides information on the requirements and expectations that the Impact Assessment Agency has when it considers the Factor.

In October 2020, Environment and Climate Change Canada (**ECCC**) published the [Strategic Assessment of Climate Change](#) (**SACC**); ~~the two~~ related ~~draft~~ Technical Guides were published in [draft form in 2021](#) and 2022. These documents provide guidance for designated projects under the *Impact Assessment Act*, and the consideration of Canada’s climate change commitments. The SACC states that guidance for projects regulated by the Canada Energy Regulator (**CER**) will similarly consider the principles and objectives of the SACC.

The [CER Filing Manual](#) was updated following the publication of the SACC [to better align with the GHG and climate change information requirements](#). The Filing Manual requires proponents to consider the principles and objectives of the SACC in their facilities applications. While the SACC provides broad direction on all types of project applications, the CER Filing Manual sets out specific requirements that need to be met for CER-regulated projects.

2. Purpose

The CER recognizes that transparency, predictability, and efficiency in its regulatory processes can contribute to enhancing Canada’s global competitiveness, while driving innovation in support of the transition to a low carbon economy. The CER has worked, and continues to work, closely with ECCC in the developing of guidance around climate change considerations, and to provide clarity for proponents of pipeline and power line projects.

¹ S.C. 2019, c.28, s.10

² This language appears in CER Act s.183(2)(j), s.262(2)(f), s.298(3)(f)

³ S.C. 2019, c.28, s.1

Commented [F(1): General notes on the review:
-In accordance with the SACC, ECCC has proposed additional sections to cover the topics of ‘impact on carbon sinks’ and ‘climate change resilience’
-Updated titles of sections to reflect the SACC section 5 (Impact Statement Phase) headings
-Changed order of sections to match the SACC section 5

Field Code Changed

Commented [F(2): Update hyperlink to this address:
[Strategic Assessment of Climate Change \(strategicassessmentclimatechange.ca\)](https://strategicassessmentclimatechange.ca)



This document outlines how the new Factor may be considered by the Commission of the CER when undertaking its assessment of new facilities projects. Although the Factor contains two distinct considerations (environmental obligations and climate change commitments), the focus of this document is Canada's climate change commitments (see section 3.5 for further discussion on Canada's climate change commitments).

Commented [E(3): Unclear why there is a distinction drawn between the two considerations, and why only one is deemed relevant to this document.

The following sections provide additional context for proponents on greenhouse gas (GHG) commitments in relation to CER-regulated projects. This includes considerations around whether a project's effects could hinder or contribute to the Government of Canada's ability to meet climate change commitments.

The Commission assesses each application on its merits pursuant to the CER Act. The information provided in this document is guidance only and is meant to complement, not replace, the requirements specified in the Filing Manual.

3. Considerations for assessing the Factor

The consideration of GHG emissions is not new to the CER or its predecessor, the National Energy Board. The CER has updated the Filing Manual to reflect the inclusion of this Factor in the CER Act.

This guidance is intended to be considered along with the draft revisions to the filing requirements and guidance in the Guide A of the Filing Manual [\[add hyperlink here\]](#). These revisions provide further details and expectations for project applications and are based on expectations as set out in the SACC and associated draft Technical Guides.

Key elements that the Commission may take into consideration on a project's potential hindrance or contribution to Canada's climate change commitments include:

- ~~magnitude of GHG emissions;~~
- ~~mitigation measures for GHG emissions; applicability of relevant laws, regulations and policies;~~
- ~~net zero plan;~~
- ~~project's contribution to climate change commitments; and~~
- ~~upstream emissions~~
- Net GHG emissions;
- impact of the project on carbon sinks;
- impact of the project on federal emissions reduction efforts and on global GHG emissions;
- GHG mitigation measures;
- climate change resilience;
- upstream GHG emissions;
- plan to achieve net-zero emissions by 2050;
- ~~applicability of relevant climate change laws, regulations and policies; and~~
- ~~decision making and conditions based on climate change factors.~~

The following sections expand on each element above. **Guiding questions for each element** are also provided.

Commented [E(4): It is unclear how the Commission will operationalize the use of these guiding questions to reach a conclusion on the extent of that the project could hinder/contribute to climate change commitments. For example, some of the guiding questions included throughout this document seem that they would elicit a yes/no response about whether the proponent provided certain information. How does the Commission translate that answer into an extent?

3.1 Magnitude ~~Net~~ of GHG emissions

GHGs are cumulative in nature and global in impact. Canada has committed to reducing GHG emissions by 40 to 45 per cent below 2005 levels by 2030.



In assessing the magnitude of emissions, the Commission considers the sources of direct and [acquired energy GHG](#) emissions that would be expected throughout the entire lifecycle of a project. The potential GHG emission sources for a proposed project or activity will vary, depending on the type of facility and planned activities.

[The proponent is required to follow the GHG quantification guidance and provide the information outlined in section 5.1.1. of the SACC and section 2 of the draft Technical Guide Related to the Strategic Assessment of Climate Change: Guidance on quantification of net GHG emissions, impact on carbon sinks, mitigation measures, net-zero plan and upstream GHG assessment \(the 1st draft Technical Guide\), provides further details on the net GHG emissions calculation and quantification methodologies. The requirements include:](#)

- [A description of each of the project's main sources of GHG emissions and their estimated annual GHG emissions over the lifetime of the project;](#)
- [Net GHG emissions by year for each phase of the project based on the project's maximum throughput or capacity \(new project\) or additional throughput or capacity \(replacement or expansion project\);](#)
- [Each term of the GHG emission calculation \(direct GHG emissions, \[acquired energy GHG emissions\]\(#\), \[CO₂ captured and stored\]\(#\), \[avoided domestic GHG emissions\]\(#\) and \[offset credits\]\(#\), if applicable\), per year for each phase of the project;](#)
- [Emission intensity for each year of the operation phase of the project. Proponents should provide a comparison of the project's predicted GHG emission intensity to the emission intensity of similar \[high performing, energy-efficient project types in Canada\]\(#\), subject to the public availability of information. It may be useful to provide a comparison of the project's magnitude of predicted project emissions with comparable projects, as well as to Canada's GHG reduction targets \(discussed below\);](#)
- [The quantity and a description of the "units produced"¹ for each year of the operation phase of the project;](#)
- [Methodology, data, emission factors and assumptions used to quantify each element of the net GHG emissions;](#)
- [A discussion on the development of emissions estimates and uncertainty assessment; and](#)
- [A description of large sources of GHG emissions that may be the consequence of accidents or malfunctions.](#)

GHG emissions associated with **project construction** generally stem from operation of construction equipment, [land-use change \(for example, clearing\)](#), and biomass burning. Emissions from construction equipment are dependent on variables such as terrain complexity and season. [Annex B of the 1st draft Technical Guide contains a detailed methodology for quantifying land-use change. GHG emissions from onsite power generation \(direct emissions\) or energy purchased from a third party \(acquired energy GHG emissions\) must be included in the quantification. related emissions are more difficult to quantify and are based mainly on fuel loading assumptions for](#)

GHG emissions associated with **project operation** vary based on product carried, throughput capacity, individual design, and component counts. Line compression is typically the largest direct GHG emission

Commented [F(5)]: CER – Suggest adding these items to the Filing Manual Glossary

Commented [E(6)]: Is there a risk that by listing examples of emission sources, proponents will not consider other relevant sources to their project because they are not listed here?

¹ "Units produced" is defined in Equation 2 of the SACC. For many CER regulated projects, the units produced will be [units of product transported \(for example, barrel of oil transported, or million cubic feet of natural gas transported\).](#)



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source for natural gas pipeline projects, and operational emissions associated with natural gas pipeline projects are generally larger than those associated with operating oil pipeline projects (depending on the electrical grid drawn from). Other sources of operational emissions may include: maintenance and inspection activities (including aerial patrols); additional process equipment (such as glycol heating boilers or onsite generators, dependent on project design); and fugitive emissions from valves, connectors, pumps, and tanks. For facilities with electrically driven equipment (such as pumps on oil pipelines), GHG emissions could stem from onsite power generation (direct emissions) or from tie-in to the grid ([acquired energy](#) GHG emissions)⁴.

[GHG emissions associated with project decommissioning can include activities such as decommissioning infrastructure that is no longer needed, re-contouring the landscape in line with reclamation plans, revegetating, and monitoring activities.](#)

As explained in the Filing Manual, proponents are expected to provide the methods and assumptions used to quantify project-related GHG emissions. Proponents are expected to use recent and reputable emission estimate equations and emission factors. Proponents are also encouraged to use ECCC's [National Inventory Report and the 1st draft Technical Guide's](#) emission factors when calculating estimated vehicle and equipment emissions.

⁴ [Acquired energy](#) GHG emissions associated with electricity generation may be subject to provincial regulation.

Commented [F7]: The decommissioning phase should be included in this document. Note that the SACC uses construction, operation and decommissioning project phases.



3.1 Impact of the Project on Carbon Sinks

Proponents are required to evaluate the project's impacts on carbon sinks, separate from the GHG emissions associated with land-use change. Proponents must provide a quantitative and qualitative description of the project's positive or negative impact on carbon sinks, since some projects may improve or reduce the ability of an ecosystem, land area or ocean to absorb carbon dioxide from the atmosphere. An impact on a carbon sink implies the interruption or alteration of a natural continual process that removes carbon from the atmosphere.

The SACC's Section 5.1.2 of the SACC and section 4 of the 1st draft Technical Guide-section 4 provides methodologies and guidance on performing a qualitative and quantitative assessment on the impact to carbon sinks.

Impact on Carbon Sinks: Possible Guiding Questions that the Commission may consider in its assessment

- How was the impact on carbon sinks considered in the project design?
- How does the quantitative assessment of the land area's natural carbon sink capacity compare to the carbon sink capacity after the proposed project is underway?
- Has the proponent identified measures to mitigate ~~the any negative project's~~ impact on carbon sinks?

Commented [E(10)]: Note that the grey text box below is new, proposed by ECCC (although it does not appear as a tracked change).

3.1 Impact of the project on federal emissions reduction efforts and on global GHG emissions
In recent years, there has been a substantial evolution in Canada's climate policy environment, shaping the future context for Canadian energy supply, demand, trade, and infrastructure. Among these commitments are the Paris Agreement, the Pan-Canadian Framework on Clean Growth and Climate change, Canada's 2030 target, and the goal of Canada achieving net-zero emissions by 2050.⁵ Given the magnitude of change required for Canada and the world to reach net-zero emissions by 2050, future policy, market, and technology changes will continue to shape energy in Canada over the next three decades. Examples of key developments include the Canadian Net-Zero Emissions Accountability Act (including and the 2030 Emissions Reduction Plan),⁶ and the 2016 Pan-Canadian Framework on Clean Growth and Climate Change.

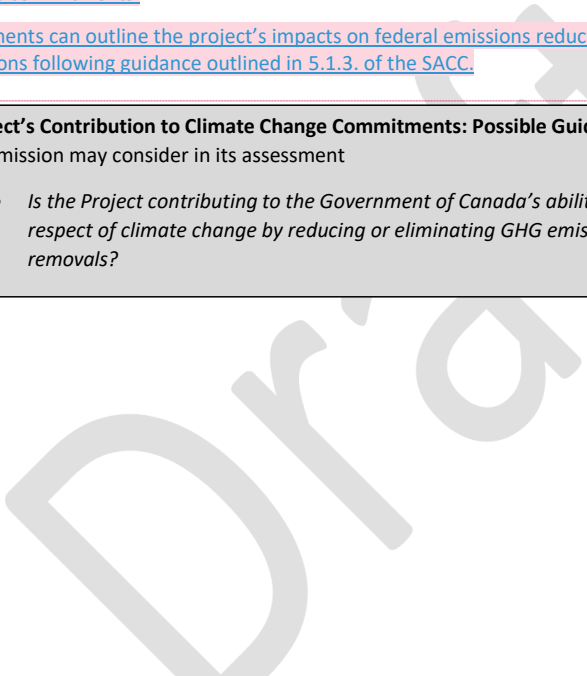
The Commission recognizes that certain projects have the potential to impact Canada's efforts to reduce GHG emissions. Examples of impacts could be displacing high emission intensity projects with lower emission intensity projects, or by facilitating GHG removals, thereby contributing to Canada's climate change commitments.

Proponents can outline the project's impacts on federal emissions reductions efforts and on global GHG emissions following guidance outlined in 5.1.3. of the SACC.

Project's Contribution to Climate Change Commitments: Possible Guiding Question that the Commission may consider in its assessment

- Is the Project contributing to the Government of Canada's ability to meet its commitments in respect of climate change by reducing or eliminating GHG emissions, or facilitating GHG removals?

Commented [E(11)]: Existing section written by CER. Moved up to follow the order used in the SACC section 5.1.





3.2 Mitigation measures

Proponents are expected to undertake a comprehensive assessment of the various mitigation measures, including through the use of best available technologies and best environmental practices (BAT/BEP) to minimize GHG emissions in each phase of the project. Considering potential mitigation measures early in the design and planning process offers opportunities to identify and plan ways to minimize absolute emissions as early as possible. For example, in a Project application, a proponent may propose situating a project in a location that requires less biomass removal or propose capturing or flaring natural gas instead of venting.

BAT/BEP are defined as the most effective technologies, techniques, or practices, including emerging technologies, that can be technically and economically feasible for reducing GHG emissions during the lifetime of the project. An assessment of BAT/BEP, using the SACC's BAT/BEP Determination Process, should be conducted to confirm that the project's design will minimize GHG emissions. This should align with the boundaries of the project. Setting the scope of the analysis at the project level, instead of the equipment level, gives project proponents flexibility to optimize the project's overall design while demonstrating the use of BAT/BEP.

Section 5.1.4. of the SACC outlines information requirements for mitigation measures. Section 3 of the 1st draft Technical Guide provides further details on principles and on how proponents can follow the BAT/BEP Determination Process to mitigate the project's GHG emissions.

Mitigation Measures: Possible Guiding Questions that the Commission may consider in its assessment

- How were GHG emissions considered in the project design?
- Are the proposed mitigation measures reasonable and likely to be implemented?
- Are the technical and economic feasibility criteria reasonable? Did the proponent provide appropriate rationale for eliminating a technology or practice from further consideration?
- What mitigation measures are proposed to avoid, reduce or capture GHG emissions from the project and how do these compare to current best practices? Should the proponent have considered other GHG mitigation measures?

3.1 Plan to Achieve Net-zero by 2050

Unless clearly articulated in a project application, the CER assumes that all new project applications will have a lifetime beyond 2050. As such, proponents are required to provide a credible net-zero plan for projects beyond 2050.

The level of detail in a net-zero plan expected by the Commission will depend on the nature of the project. For example, a compressor station that has significant point source GHG emissions released continually over the operating life are likely to require a credible net-zero plan to explain how the proponent will mitigate or offset these emissions in either a stepwise or gradual manner by the year 2050. For projects where the primary GHG emission sources are more driven by the system of which it is

Commented [E12]: Suggest removing the term phase here as is may cause confusion with the project lifetime phases mentioned just above.

Commented [Z13]: Suggested edits since this concept is not introduced elsewhere

Commented [Z16]: Suggested edits since the BAT/BEP Determination Process was not mentioned elsewhere.

I am assuming that the CER would not require a project proponent to conduct a BAT/BEP Determination?

Commented [E17]: Guiding questions:
1) Unclear what the first guiding question is trying to accomplish. This question would not only apply to the mitigation measures component as it has broader implications.
2) Suggest removing the word "avoid" and "capture" for consistency with the SACC, as these terms could be considered as avoided domestic GHG emissions or offset measures under the SACC.
3) How does CER define the term innovative, and what would be included in that distinction?

Commented [Z18]: Proposed additional consideration for "innovative approaches" such as using emerging technologies

Commented [Z19]: Additional guiding questions proposed on ensuring the proponent considered appropriate technical and economic feasibility criteria and ensuring that proponent provided appropriate rationale

Commented [E20]: Note this section was already existing and written by CER. It appears as track changes because it was moved.

Commented [E21]: This statement is not accurate. The SACC does not discuss corporate net-zero plans. The 1st technical does, but says that "The project's net-zero plan can refer to the proponent's corporate net-zero plan, if any. Proponents should describe how the corporate net-zero plan will assist in reducing the project's net GHG emissions, if applicable.



[a part \(such as maintenance inspections, aerial patrols\) or are managed at a corporate level \(such as compliance with a company-wide fugitive emission management program\), adherence to a corporate plan for achieving net-zero emissions by 2050 may be more appropriate. If actions being undertaken by the company at a facility separate from the project are included in the project's net zero plan, the proponent must explain how those actions and related GHG reductions will be assigned exclusively to the project.](#)

Commented [E(22)]: ECCC reiterates that under the SACC, a project-level net-zero plan is required, but that this could refer to a corporate net-zero plan.

Commented [E(23)]: ECCC notes that this would be a corporate-level initiative (one type of offset measure) as described in the 1st technical guide of the SACC.

[Section 5.3 of the SACC and section 3.5 of the 1st draft Technical Guide provide further details on the principles, development and contents of a plan to achieve net-zero emissions by 2050. The plan will complement and be informed by the GHG mitigation measures planned by the proponent.](#)

Plan to Achieve Net-zero Plan by 2050: Possible Guiding Questions that the Commission may consider in its assessment

- *What specific actions or measures will be undertaken to achieve net-zero emissions by 2050?*
- *What are: the associated costs of implementing each action or measure; potential impacts on tolls; technical challenges; risks; infrastructure requirements; and any other relevant considerations?*
- *Has the proponent committed to providing periodic project milestones that demonstrate progress in GHG reductions towards net-zero?*
- *Has the proponent made efforts to reduce emissions and meet project milestones using technologies and practices, while offset measures are considered as a last resort?*
- *How does the credible plan to achieve net-zero emissions by 2050 impact the economic*

[3.1 Climate Change Resilience](#)

[Proponents are expected to undertake an assessment of the resilience of the project to climate change impacts.](#)

[The proponent is expected to provide the information outlined in the SACC sections 5.1.5, including:](#)

- [The scope and timescale of the climate change resilience assessment and of the methods used to identify, evaluate and manage the climate risks that could affect the project itself and thereby the surrounding environment; and](#)
- [The project's vulnerabilities to climate change both in mean conditions and extremes over the full project lifetime from project construction to decommissioning. This could include the impacts of extreme weather events on project infrastructure, impacts to water quality and availability, etc.](#)

Commented [E(24)]: With regard to guiding question 2, ECCC notes that several of these considerations should already be considered in the proponent's BAT/BEP Determination.

Commented [Z(25)]: Proposed additional question – on offset measures – to align with the SACC's draft technical guide

Commented [E(26)]: New section that ECCC is proposing to align with the requirements of the SACC.

Commented [E(27)]: Should CRD do their own review of these documents?

[The draft Technical Guide Related to the Strategic Assessment of Climate Change: Assessing climate change resilience \(the 2nd draft Technical Guide\) provides a consistent and coherent approach to assessing how a project is resilient to, and at risk from, both the current and future impacts of a changing climate.](#)



Mitigation Measures Climate Change Resilience: Possible Guiding Questions that the Commission may consider in its assessment

- *Is the project at risk from climate change-related impacts?*
- *Has the proponent considered the climate-related risks and identified appropriate risk treatments and adaptation measures (as necessary) in the project design?*

3.1 Upstream emissions

The Filing Manual sets out when proponents are required to provide an estimate of upstream emissions and the extent to which those emissions would be incremental as a result of the project. The SACC and the 1st draft Technical Guide contains thresholds for when an upstream emissions assessment must be performed, and these thresholds are applied in the context of CER-regulated projects. Consideration of upstream emissions will typically include quantitative estimates of emissions, as well as the qualitative discussion about the incrementality of these emissions. The qualitative discussion provides a context for which the project will be operating in, and whether the estimated upstream emissions would occur with or without the project.

Section 3.2. and 3.3. of the SACC outlines information requirements for an upstream emissions and uncertainty assessment. Section 5 of the 1st draft Technical Guide provides further details on quantifying upstream GHG emissions.

Upstream emission assessments may also be a key element in the considering the overall cumulative effects of any proposed project. The Commission expects that the upstream assessment, when submitted by the proponent, must be scoped to be consistent with the development assumptions that support a given project. Further, the Commission expects the assessment to be consistent with the long term economic, financial, and engineering assumptions made in an application.

Section 3.2. and 3.3. of the SACC outline information requirements for an upstream GHG emissions and uncertainty assessment. Section 5 of the 1st draft Technical Guide provides further details on quantifying.

Commented [E28]: The CER filing manual relies on the proponent to indicate whether a project is likely to meet the upstream threshold. It does not seem that there is a mechanism to validate their claim at any point. It could be in the interest of a proponent to claim that emissions are below the threshold even if they are not. How will CER ensure that all projects that should actually complete an upstream assessment are doing so?

Commented [E29]: Is incremental/incrementality clearly defined anywhere by CER or referenced? If not, proponents may not understand the term if they do not look for it in the SACC. Suggest that CER adds this term to the glossary.



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⁵ [See Strategic Assessment of Climate Change](#)

⁶ [For additional and updated information, please see ECCC's Canada's climate plans and targets - Canada.ca](#)

Commented [E(30)]: This reference is vague. What part of the SACC is being referenced here?



Upstream Emissions: Possible Guiding Questions that the Commission may consider in its assessment

- Are the project-related upstream emissions above the thresholds outlined in the SACC? If yes, did the proponent undertake a quantitative assessment of upstream GHG emissions associated with the project?
- Did the proponent follow the methodology outlined in ECC's ~~draft-1st draft~~ Technical Guides?
- Will the project result in incremental upstream GHG emissions? Did the proponent discuss the impact of cumulative and incremental emissions on Canada's climate change commitments?
- How have the potential risks associated with future changes to climate change laws, regulations, and policies applicable to upstream emissions been quantified and planned for?

Plan to Achieve Net zero by 2050

~~Unless clearly articulated in a project application, the CER assumes that all new project applications will have a lifetime beyond 2050. As such, proponents are required to provide a credible net zero plan for projects beyond 2050. Both the SACC and the Filing Manual specify that proponents may submit either a project-specific or a corporate net-zero plan, depending on the nature, scope and scale of the project.~~

~~The SACC section 5.3, and the 1st draft Technical Guide section 3.5, provide further details on the development and contents of a plan to achieve net zero emissions by 2050. The plan will complement and be informed by the GHG mitigation measures planned by the proponent.~~

~~The level of detail expected in a net-zero plan expected by the Commission will depend on the nature of the project. For example, a compressor station that has significant point source GHG emissions released continually over the operating life are likely to require a credible net-zero plan to explain how the proponent will avoid, reduce, mitigate or offset these emissions in either a stepwise or gradual manner by the year 2050. For projects where the primary GHG emission sources are more driven by the system of which it is a part (such as maintenance inspections, aerial patrols) or are managed at a corporate level (such as compliance with a company-wide fugitive emission management program), adherence to a corporate plan for achieving net-zero emissions by 2050 may be more appropriate. If actions being undertaken by the company at a facility separate from the project are included in the project's net-zero plan, the proponent must explain how those actions and related GHG reductions will be assigned exclusively to the project.~~

~~Section 5.3 of the SACC section 5.3, and section 3.5 of the 1st draft Technical Guide section 3.5, provide further details on the development and contents of a plan to achieve net-zero emissions by 2050. The plan will complement and be informed by the GHG mitigation measures planned by the proponent.~~

Commented [E31]: Note this section was already existing and written by CER. It appears as track changes because it was moved.

Commented [E32]: This statement is not accurate. The SACC does not discuss corporate net-zero plans. The 1st technical does, but says that "The project's net-zero plan can refer to the proponent's corporate net-zero plan, if any. Proponents should describe how the corporate net-zero plan will assist in reducing the project's net GHG emissions, if applicable.

Commented [E33]: ECC reiterates that under the SACC, a project-level net-zero plan is required, but that this could refer to a corporate net-zero plan.

Commented [E34]: ECC notes that this would be a corporate-level initiative (one type of offset measure) as described in the 1st technical guide of the SACC.



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The Filing Manual sets out that proponents are expected to provide a list of the federal, provincial, or territorial GHG legislation, regulations, and policies that will apply to the project, and explain any implications for the project.

Given the rapidly evolving space of climate change policy within Canada and internationally, proponents are encouraged to plan for how further changes to laws, regulations and policies may potentially impact the economic feasibility of a project. Potential risks of changes to the regulatory environment that could require adaptive management by the proponent could include a project's available supply, market demand, utilization, costs, and financing.

Relevant Climate Change Laws, Regulations and Policies: Possible Guiding Questions that the Commission may consider in its assessment

- *How are the applicable provincial or federal carbon pricing requirements (including reporting) being managed for the project?*
- *How have the potential risks associated with future changes to climate change laws, regulations and policies been quantified and planned for? Are there adaptive management plans in place for these risks?*

Net-zero Plan

Unless clearly articulated in a project application, the CER assumes that all new project applications will have a lifetime beyond 2050. As such, proponents are expected to provide a credible net zero plan for projects beyond 2050. Both the SACC and the Filing Manual specify that proponents may submit either a project-specific or a corporate net-zero plan, depending on the nature, scope and scale of the project.

The level of detail expected in a net zero plan by the Commission will depend on the nature of the project. For example, a compressor station that has significant point source GHG emissions released continually over the operating life are likely to require a credible net-zero plan to explain how the proponent will avoid, reduce, mitigate or offset these emissions in either a stepwise or gradual manner by the year 2050. For projects where the primary GHG emission sources are more driven by the system of which it is a part (such as maintenance inspections, aerial patrols) or are managed at a corporate level (such as compliance with a company-wide fugitive emission management program), adherence to a corporate plan for achieving net-zero emissions by 2050 may be more appropriate.

Project's contribution to climate change commitments

In recent years, there has been a substantial evolution in Canada's climate policy environment, shaping the future context for Canadian energy supply, demand, trade, and infrastructure. Among these commitments are the Paris Agreement, Canada's 2030 target, and the goal of Canada achieving net-zero emissions by 2050.⁵ Given the magnitude of change required for Canada and the world to reach



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Decision-making and conditions [based on climate change factors](#)

The GHG and the climate change Factor is one of several factors that the Commission considers when making a public interest decision or recommendation for a proposed project. The information provided in an application and related submissions addressing [the](#) GHGs and the climate change Factor will support the Commission in determining the extent to which the effects of the project may hinder or contribute to Canada's climate change commitments.

The Commission may impose conditions related to the Factor. These conditions would vary based on the scope, scale, and nature of projects under review. Conditions may refer to mitigation measures and other requirements to avoid or reduce a project's GHG emissions. Conditions may also include a reporting requirement in which the proponent would be expected to demonstrate progress toward implementing these mitigation measures as well as the plan for reaching net-zero emissions by 2050 (for projects with a lifetime beyond 2050). Given the evolving regulatory environment related to GHG emissions and climate change in Canada, the Commission's conditions can be expected to evolve.