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Comments on 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

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Environment and Climate Change Canada

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About Environmental Defence Canada

Environmental Defence Canada (EDC) is a leading Canadian advocacy organization that works with government, industry and individuals to defend clean water, a safe climate and healthy communities.



By signing the Paris Agreement, Canada made a commitment to do its fair share to limit global temperature rise to 1.5°C. So far, Canada is off course from meeting our domestic and international climate obligations.¹ Impact assessments are an important tool for meaningful action on climate. The decisions made today with regards to Canada's energy and industrial infrastructure have consequences for generations. Unfortunately, federal environmental assessments in Canada have long failed to ensure that project approvals are consistent with a climate-safe future.

The *Impact Assessment Act* (IAA) lays a strong foundation for aligning impact assessments with a climate-safe future by requiring federal reviews to consider whether projects would "hinder or contribute to" meeting Canada's climate change commitments. To operationalize this requirement, a framework is needed to allow decision-makers to assess whether or not an individual project is compatible with a pathway to limiting temperature rise to 1.5 degrees and make decisions accordingly. This is the role that a strategic assessment of climate change (SACC) should provide. However, the current SACC, as well as the draft technical guide, do not ensure that project decision-making will protect future generations of Canadians. The *Net-Zero by 2050* report from the *International Energy Agency* is clear: **there can be no new oil, gas coal projects or expansions to existing projects if we are to limit global warming to 1.5 degrees.**² Instead, the SACC and the draft technical guide build in generous loopholes that will allow projects with significant climate impacts to avoid real scrutiny or a comprehensive assessment of their impact on the country's climate targets. Communities across Canada are already experiencing the impacts of the climate crisis. We cannot afford to move ahead with an approach to impact assessment that continues to favour the approval of new fossil fuel or high-emissions projects.

Recommendations

- Limit the role of carbon capture and offsets throughout the draft technical guide.
- Remove avoided emissions and offset measures from the net GHG emissions equation. Carbon captured for EOR should not be included as a subtraction in the net zero equation.
- Include an assessment of full lifecycle emissions, including downstream emissions.
- Ensure robust net zero plans, which should be required for all projects regardless of their lifetimes, align with all of Canada's climate commitments
- Develop a "climate test" which provides a framework to assess whether or not an individual project is compatible with Canada's domestic and international climate commitments.

¹ Langlois-Bertrand, S. *et al.* (2021). Canadian Energy Outlook 2021 — Horizon 2060. Institut de l'énergie Trottier and e3c Hub. Available: <http://iet.polymtl.ca/energy-outlook/>

² IEA (2021), *Net Zero by 2050*, IEA. Available: <https://www.iea.org/reports/net-zero-by-2050>



Limit the role of CCS and offset measures

The draft technical guide allows too much scope for proponents to justify their projects through the use of carbon capture and storage. CCS technologies are expensive, energy intensive, risky and their deployment at scale is still unproven. Despite decades of research and tens of billions of dollars in private and public support, CCS is neither economically sound nor proven at scale, with a terrible track record and limited potential to deliver significant, cost-effective emissions reductions. A recent study found that over 80% of CCS projects in the United States have failed.³ As currently drafted, the technical guide allows proponents to claim uncertain capture rates to lower a project's emissions. An overreliance CCS will lead to poor project decision-making which risks locking Canadian industries into continued dependence on fossil fuels.

Furthermore, proponents whose projects depend on CCS must show how they are considering other implications of using the technology. Given the energy-intensity of carbon capture technologies, their use results in a higher overall energy demand. The additional energy generates even greater amounts of these pollutants, if supplied by fossil fuels, with real health and safety implications for frontline communities.⁴ For CCS to serve as a safe, effective mitigation tool, captured carbon must be injected and stay underground permanently. Significant uncertainty remains in estimates of potential leakage risk.⁵ The risk of carbon dioxide leakage from geological storage and the carbon dioxide transport infrastructure risks undermining any potential benefits. Aside from compromising climate mitigation efforts, CO₂ leakage also has the potential to contaminate ground and surface waters, impact soil ecology and the marine environment, and harm human health.⁶ There are long term concerns for who is responsible for the carbon once it is stored underground, including monitoring storage sites, remediating CO₂ leaks to the extent possible, providing financial security, and paying for any "harm" to the climate, environment, human health, etc. in the event something goes wrong. Even with strong financial security mechanisms in place, there is a risk that governments will ultimately be responsible for the long-term monitoring, management, and remediation of CO₂ storage sites.⁷ Governments in Canada are already struggling

³ Abdulla et al. (2021) Explaining successful and failed investments in U.S. carbon capture and storage using empirical and expert assessments. Environmental Research Letters. Available: <https://iopscience.iop.org/article/10.1088/1748-9326/abd19e/pdf>

⁴ Donaghy, T. & Jiang, C. (2021) Fossil Fuel Racism: How phasing out oil, gas and coal can protect communities. Greenpeace. Available: <https://www.greenpeace.org/usa/reports/fossil-fuel-racism/>

⁵ Anderson, S.T. (2017). Risk, Liability, and Economic Issues with Long-Term CO₂ Storage—A Review. Natural Resources Research 26, pp.89–112 (2017). <https://doi.org/10.1007/s11053-016-9303-6>.

⁶ Climate Action Network International (January 2021) Position: Carbon Capture, Storage and Utilisation. Online: https://climatenetwork.org/wp-content/uploads/2021/01/can_position_carbon_capture_storage_and_utilisation_january_2021.pdf

⁷ Havercroft, I. and Macrory, R. (2014). Legal Liability and Carbon Capture and Storage: A Comparative Perspective. October 2014. Available at: https://sequestration.mit.edu/pdf/GHGT8_deFigueiredo.pdf.



to deal with the financial liabilities of the oil and gas sector. All of these considerations should be included in the technical guide.

The Canadian Institute for Climate Choices (CICC) warns that if Canada relies too heavily on engineered forms of negative emissions technology that fail to prove viable, it could significantly increase the costs of reaching our climate commitments, or cause Canada to miss these targets altogether.⁸ Similarly, the Intergovernmental Panel on Climate Change (IPCC) points to uncertainty in the future deployment of CCS and cautions against reliance on the technology⁹

Robust safeguards should be applied to the assessment of CCS throughout the technical guide, to ensure that decisions being made don't lock-in carbon infrastructure with promises of carbon capture which then fail to deliver. This includes limiting the role of CCS in the net zero plans and removing CCS from the net zero equation.

Remove avoided emissions and offset measures from the definition of net zero emissions

The proposed equation for calculating net GHG emissions allows proponents to subtract avoided domestic emissions and offset measures, including carbon capture and corporate-level initiatives in the estimate of the project's GHG emission. Given the difficulty of ensuring that emissions reductions either through capture or through offsetting are real and that their quantification is accurate, neither of these categories should be included in the net zero equation.

In fact, it is misleading and inaccurate to include these subtractions in the net emissions equation, as doing so will ensure that projects appear to be lower-emitting than they actually are. In addition, including avoided emissions and offset measures will impact the credibility of the SACC, given how difficult it will be to determine whether these subtracted emissions are real and additional reductions. It is very difficult to ensure that offset measures result in real, additional, verifiable and permanent emissions reductions. Rigorous and transparent accounting is necessary, especially to ensure reductions are quantified and to avoid double counting. An easier solution that will lead to more credible assessments would be to remove offset measures from the net zero equation.

Any inclusion of carbon removal through CCS must be based on actual capture rates from projects in operations, rather than allowing proponents to make overly ambitious claims. The draft technical guide allows carbon captured for enhanced oil

⁸ Canadian Institute for Climate Choices (2021) Canada's Net Zero Future: Finding Our Way in the Global Transition. Available: <https://climatechoices.ca/reports/canadas-net-zero-future/>

⁹ IPCC, Summary for Policymakers in IPCC, Global Warming of 1.5°C: An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty (2018) Ch. 5, Section 5.4.1.2.



recovery (EOR) to be included as a subtraction. This is problematic given that EOR allows for increased oil and gas extraction – and therefore emissions - which otherwise wouldn't have been possible.¹⁰ In fact, a 2020 review of scientific research found that due to EOR, current CCS applications actually put more CO₂ into the atmosphere than they have removed.¹¹ **Therefore carbon captured for EOR should not be included as a subtraction in the net zero equation.** If it is, a full accounting of the downstream emissions resulting from the increased levels of oil production made possible by EOR is necessary.

Include an assessment of full lifecycle emissions, including downstream emissions

Despite recommendations from environmental organisations and academics, the final SACC unnecessarily and inappropriately constrained the scope of project-level assessments by excluding the downstream emissions of energy and industrial projects that operate within Canada. This approach is being further entrenched by the draft technical guide.

Research shows that the total amount of emissions from Canada's exports of fossil fuels is greater than all GHG emissions that occur within Canada.¹² For a wealthy nation like Canada to produce and export that volume of fossil fuels without considering their downstream impacts is not consistent with Canada doing its "fair share" to achieve the Paris Agreement. Precluding the assessment of lifecycle emissions severely undermines the purpose and value of any assessment to determine whether a project is compatible with Canada's domestic and international commitments and doing its fair share to achieve the Paris agreement.

There is precedent in the energy project review process for considering downstream and lifecycle emissions. In August 2017, the National Energy Board (NEB) panel reviewing the Energy East pipeline ruled that it would consider downstream and lifecycle emissions.¹³ In the era of climate change, there's no credible reason for the project review process to break with this precedent set by the NEB. Jurisdictions both within Canada and around the world are beginning to consider lifecycle emissions in their assessment of energy and industrial projects. If Canada is to be a

¹⁰ Garcia Freites, S. & Jones, C. (2021) A Review of the Role of Fossil Fuel-Based Carbon Capture and Storage in the Energy System, Tyndall Centre. Online:

https://www.research.manchester.ac.uk/portal/files/184755890/CCS_REPORT_FINAL_v2_UPLOAD.pdf

¹¹ Sekera, J. & Lichtenberger, A. (2020) Assessing Carbon Capture: Public Policy, Science, and Societal Need: A Review of the Literature on Industrial Carbon Removal. Biophysical Economics and Sustainability. Available: <https://link.springer.com/article/10.1007/s41247-020-00080-5>

¹² Canadian Centre for Policy Alternatives. Extracted Carbon: Re-examining Canada's Contribution to Climate Change through Fossil Fuel Exports. (January 2017). Retrieved from https://www.policyalternatives.ca/sites/default/files/uploads/publications/National%20Office%2C%20BC%20Office/2017/01/ccpa_extracted_carbon_web.pdf.

¹³ The Toronto Star. Energy East pipeline to review upstream, downstream greenhouse gas emissions. August 2017. Retrieved from <https://www.thestar.com/business/2017/08/23/energy-east-pipeline-to-review-upstreamdownstream-greenhouse-gas-emissions.html>.



climate leader, it should be the same. **The full lifecycle emissions of a project should be used to determine whether a project is aligned with Canada's climate commitments.**

Furthermore, for the draft guide to exclude downstream emissions yet allow the consideration of displaced emissions and international offsets is not only inconsistent, but unreasonably generous to greenhouse gas emitters. The argument that natural gas export projects can displace international emissions has been thoroughly debunked.¹⁴ On the contrary, new high-carbon projects can lock-in lifecycle emissions that are inconsistent with the Paris Agreement.

Finally, an assessment of upstream and downstream emissions should include an assessment of any connected projects. This would avoid the current situation of project splitting, which continues to allow the review of projects based on an incomplete assessment of their climate impacts, for example the separate assessments of the Gazoduq pipeline and Energie Sageunay project.

Ensure robust net zero plans, which should be required for all projects regardless of their lifetimes, align with all of Canada's climate commitments

Robust conditions are required in order for net zero plans to be effective tools in assessing projects against a 1.5 aligned pathway.

Net zero plans must include full life cycle emissions, including both upstream and downstream emissions; include 5-year interim targets aligned with a 1.5 degree pathway; not rely on offsets or unproven negative emissions technologies, and instead prioritize absolute, deep and sustained direct emissions reductions.

As the latest Intergovernmental Panel on Climate Change (IPCC) report made clear, not only must emissions reach net zero by 2050, they must also be cut in half by 2030. Therefore proponents must also show how their projects align with Canada's short-term domestic and international climate commitments.

In addition, it is not sufficient to require net zero plans for projects with lifetimes beyond 2050. All projects should be required to produce climate plans.

Development of a climate test

In order for the IA process to lead to projects decisions that are aligned with Canada's climate commitments, a true "climate test" must be implemented. A climate test should do what the SACC has failed to: provide a binding decision-

¹⁴ Swanson, C. & Levin, A. (2020) Sailing to Nowhere: Liquefied Natural Gas is not an Effective Climate Strategy. NRDC. Available: <https://www.nrdc.org/sites/default/files/sailing-nowhere-liquefied-natural-gas-report.pdf>



making framework for assessing whether and to what extent an individual energy or industrial project would contribute to or hinder progress on Canada's ability to do its fair share to pursue efforts to limit the increase to 1.5°C. The current SACC is little more than a guidance document on information requirements related to climate change at various points in the IA process. The recommendations that were put forth by numerous environmental organisations and academics over the course of the development of the SACC were clearly ignored.¹⁵ Without a meaningful SACC, Canadians should not expect that IAs will do a better job of ensuring projects are consistent with our climate commitments.

In order to determine whether a project helps or hinders progress on climate, specific tools are required. A climate test requires delineated pathways to achieve decarbonization by or before mid-century, including on a sector-by-sector basis, as well as greenhouse gas budgets for Canada (the amount of GHGs in CO₂ equivalents that Canada has left within a "fair share" ceiling under the Paris Agreement). In addition to a national budget, regional and sectoral budgets are necessary. Applied at the project level, carbon budgeting could show whether there would be room for a proposed project's GHGs. These tools are necessary to contextualize abstract megatonnes figures in relation to useful metrics.

A climate test should contribute to greater public and political understanding of climate mitigation obligations and opportunities and thereby lay the groundwork for informed and farsighted policy making. It must consider energy information and modelling that is consistent with decarbonization and the implementation of the Paris Agreement. A robust climate test should assess the potential for the construction of high-carbon projects to become stranded assets in a decarbonized world or to contribute to "carbon lock-in" that incentivizes the continued extraction and combustion of fossil fuels for many years or even decades. Currently, the newly created Canadian Energy Regulator (CER) does not produce the data that Canada's decision-makers need to consider whether an energy project is aligned with Canada's climate commitments and global scenarios for fossil fuel demand and supply in line with the Paris agreement. The creation of a climate test must rectify this situation by considering energy statistics and modelling that are consistent with the Paris Agreement. The federal government is doing a disservice to Canadians by failing to incorporate global oil supply and demand scenarios in line with the Paris agreement in its studies of energy markets, and using these scenarios as the basis for decisions about energy development.

¹⁵ Gibson et al. (2019). *From Paris to Projects: Clarifying the implications of Canada's climate change mitigation commitments for the planning and assessment of projects and strategic undertakings*. Retrieved from <https://www.cqde.org/wp-content/uploads/2019/02/P2P-full-report-23jan19.pdf>