Near-term net-zero needed for new upstream oil and gas facilities to meet sector targets

Comments and recommendations

Submitted to: British Columbia Climate Action Secretariat | August 15, 2023
Regarding: Net-zero New Industry Policy Intentions Paper

Jan Gorski| Director, Oil & Gas | Pembina Institute

Tom Green| Senior Climate Policy Adviser | David Suzuki Foundation

Mark Zacharias| Executive Director | Clean Energy Canada

The Pembina Institute, Clean Energy Canada, and the David Suzuki Foundation welcome the opportunity to provide input on the development of a B.C. Net-Zero New Industry Policy. This policy, in conjunction with others like the forthcoming 2030 methane regulations, OBPS, and oil and gas emissions cap, is essential for meeting B.C.'s 2030 and 2050 climate targets.

Recommendation Summary

- This policy should apply to significant expansions of facilities that would bring annual facility emissions over 10,000 tonnes.
- New upstream oil and gas facilities should be required to have a plan to achieve net-zero by 2030 because they are able to reduce emissions more cost-effectively than retrofitting existing facilities. This is critical to meeting B.C.'s 2030 oil and gas sector target.
- The limit on offsets should be aligned with British Columbia's Climate Change Accountability Act, which has legislated targets of an 80% reduction in GHGs below 2007 levels by 2050, and limits offset use to 20% of the emissions reductions.

Proposed Legislative and Policy Framework

1. Should this policy apply to significant expansions of existing facilities that are expected to increase emissions to more than 10,000 tonnes annually? Why or why not?

Yes, this policy should apply to expansions of existing facilities that would increase emissions to more than 10,000 tonnes of GHGs annually. Since this policy is applicable to large industrial projects ("large" defined in this policy as emitting >10,000 tonnes CO2e annually), if an existing facility undergoes such an expansion that it would be classified as a large project, then it should be subject to the terms of the net-zero new industrial policy.

Such expansions can cause significant increases in GHG emissions, and some sectors—like oil and gas—are more likely to undergo expansion of existing facilities as opposed to breaking ground on new, large facilities.

2. What is an appropriate equivalent to issuance of an EAC for those projects that do not trigger the EA process?

We recommend that for projects outside the EA process, the net-zero plan is approved by the CAS before other required approvals and permits are granted. The net-zero plan will be an integral component of business planning for these projects, and should be developed early in the planning process.

Given that the net-zero plan will be a requirement for new facilities, getting approval from the CAS early in the process will provide more certainty for firms. We recommend that the net-zero plans are also submitted to the relevant regulator.

Net-Zero Plans

3. How should the assessment of technical and economic feasibility of BAT/BEP be conducted and updated over time?

We recommend the BAT/BEP assessment process align with the BAT/BEP Determination Process outlined in the federal Draft Technical Guidance for the Strategic Assessment of Climate Change.

Figure 1: Steps of the BAT/BEP Determination Process

Figure 1: BAT/BEP Process from Draft Technical Guidance Related to the Strategic Assessment of Climate Change[1]

As innovative decarbonization solutions continue to be developed internationally and these solutions become more cost-competitive, we support the proposal that BAT/BEP assessment is reviewed and updated every five years. Economic feasibility should not just be assessed on $/t basis, but also indicate the impacts of a particular technology or bundle of technologies on the overall economic impact of the project (for instance, the impact of partial electrification at a gas plant). Proponents should make clear through the BAT/BEP process and the net-zero plan how they will strive to ensure that the project will continuously improve its emissions performance.

4. What should be the minimum expectations for a new facility's immediate adoption of clean fuels and technologies in their net-zero plans?

Upstream oil and gas

In the context of B.C.'s upcoming oil and gas emissions cap, which aims to ensure that provincial oil and gas emissions decrease 33-38% from 2007 levels by 2030, new upstream facilities should be subject to more stringent regulations in order to meet that target. New upstream facilities are able to incorporate low emissions technology more cost-effectively than retrofitting existing facilities. For this reason, they should also be required to meet net-zero industrial rules that apply to projects going through the environmental assessment process.

[1] Environment and Climate Change Canada (2021), *Draft Technical Guide Related to the Strategic Assessment of Climate Change*, https://www.strategicassessmentclimatechange.ca/24391/widgets/98155/documents/62220

For the upstream oil and gas sector, new facilities and significant expansions of facilities should be required to be net-zero by 2030, not 2050. The accelerated 2030 timeline should apply to upstream oil and gas facilities as well as LNG terminals, because significant upstream emissions are associated with further LNG development in B.C. In our recent analysis, we found that under the current policy scenario, assuming all proposed LNG projects go ahead, would result in over 30 Mt of GHGs from LNG development in B.C., with most of those emissions from upstream processes.[2]

Table 1: GHG emissions in 2030 under current policy scenario[3]

LNG development	Emissions (Mt CO_2e)		
	Upstream	Terminal	Total
Baseline oil and gas production + LNG Canada Phase 1 + Woodfibre LNG	13.8	2.2	16.7[7]
LNG Canada Phase 2	4.7	2.1	6.8
Tilbury Phase 2	0.7	0.3	1.0
Cedar LNG	0.9	0.3	1.2
Ksi Lisims	2.7	1.9	4.6
Total emissions if all projects go ahead			**30.3**
CleanBC 2030 target			**8.6 to 9.3**

Several decarbonization solutions are available for upstream oil and gas producers for new and expanded facilities, including:

- Near-zero methane emissions are achievable at new facilities with existing technology, and will be needed to meet the overall emissions reduction targets for the oil and gas sector in B.C.[4]
- Carbon capture, utilisation and storage technology (CCUS) is an option for combustion sources and formation CO2 emissions in the upstream and midstream
- Electrification of LNG terminals and upstream natural gas production, processing, and transmission. All active LNG projects in B.C. (aside from LNG Canada Phase 1) propose

[2] Jan Gorski and Jason Lam (2023), *Squaring the Circle: Reconciling LNG expansion with B.C.'s climate goals*, https://www.pembina.org/pub/squaring-circle

[3] Jan Gorski and Jason Lam (2023), *Squaring the Circle: Reconciling LNG expansion with B.C.'s climate goals*, https://www.pembina.org/pub/squaring-circle

[4] Jan Gorski, Tom Green, Ari Pottens, Jonathan Banks (2023), "Reducing methane emissions from B.C.'s oil and gas sector", https://www.pembina.org/pub/reducing-methane-emissions-bcs-oil-and-gas-sector

to be fully electrified[5], and as of 2021, about 25% of upstream facilities were electrified (without explicit regulatory requirements). [6]

5. What should be the implications/ consequences for a facility if their net-zero plans are behind schedule or not implemented?

Facilities should be subject to investigation, administrative penalties, and sanctions if net-zero plans are behind schedule/not implemented, if that delay is within the facility's scope.

We recommend that a requirement for interim emissions reductions objectives for 2030 and 2040 be included in the facility net-zero plan, in order to encourage early action and track a facility's progress.

We support the proposal that net-zero plans and BAT/BEPs be updated every five years, to take into account technological development and innovation as well as track progress.

Additionally, reported compliance data for facilities regulated under the NZNI should be published annually.

Compliance Options

6. What type of offsets should be eligible as a compliance option?

Previous independent evaluations of offset scheme outcomes have documented serious issues regarding additionality, permanence, verifiability and double-counting across a range of offsetting protocols, with most offsets credits issued subsequently found to be illegitimate.

Including offsets as a compliance tool within B.C.'s net-zero new industry policy, while reducing compliance costs, could jeopardize the attainment of climate objectives. It could inadvertently discourage the necessary investment in direct emission reductions and lead to a net increase in emissions if the offset projects underperform or suffer from reversals. Thus, we urge a precautionary approach, a tight limit on the percentage of emissions that can be met via B.C.'s regulated offsets, and careful monitoring.

We recommend that only offsets verified through the B.C. offset protocols are eligible as a compliance auction, and no offsets from voluntary markets.

[5] Jan Gorski and Jason Lam (2023), *Squaring the Circle: Reconciling LNG expansion with B.C.'s climate goals*, https://www.pembina.org/pub/squaring-circle

[6] Matthew R. Johnson, David R. Tyner, and Bradley M. Conrad, "Origins of Oil and Gas Sector Methane Emissions: On-Site Investigations of Aerial Measured Sources," *Environmental Science & Technology* 57, no. 6 (February 14, 2023): 2484–94, https://doi.org/10.1021/acs.est.2c07318.

B.C. should take into account the Oxford Principles for Net Zero Aligned Carbon Offsetting.[7] For reference the Oxford Principles for Net Zero Aligned Carbon Offsetting are:

- Principle 1: Cut emissions, use high-quality offsets, and regularly revise offsetting strategy as best practice evolves
- Principle 2: Shift to carbon removal offsetting
- Principle 3: Shift to long-lived storage
- Principle 4: Support the development of net-zero-aligned offsetting

7. Should there be limitations on how many offsets facilities can use?

As advised by the Climate Solutions Council in 2020[8], we recommend that:

- Offsets represent additional, permanent, verifiable, and quantifiable emissions reductions
- Offsets ownership is enforceable and undisputed to ensure that offset program integrity is maintained
- Offsets provide co-benefits that assist with the reconciliation and self-determination of Indigenous peoples or assist with other equity and inclusiveness goals
- Offsets must be limited in their role to meet climate targets, in order to prioritize on-site emissions reductions
- Emissions reductions from offsets should be discounted to reflect issues with ensuring additionality
- B.C. should not participate in carbon markets without assurance that human rights and the rights of Indigenous peoples will be protected

An offset limit aligned with British Columbia's Climate Change Accountability Act, which has legislated targets of an 80% reduction in GHGs below 2007 levels by 2050, would require that no more than 20% offsets should be used.

Cap-and-trade systems often impose stricter offset limits, which are one of several compliance options. The Western Climate Initiative, comprising Quebec and California's linked markets, includes an 8% offset limit. In phase 4 of the EU Emissions Trading Scheme, no offset use is permitted in covered sectors (which does not include transport, buildings, agriculture, and waste).

[7] Myles Allen et al. *The Oxford principles for Net Zero Aligned Carbon Offsetting* (2020), https://www.smithschool.ox.ac.uk/sites/default/files/2022-01/Oxford-Offsetting-Principles-2020.pdf

[8] B.C. Climate Solutions Council, "Council advice on closing the gap to the 2030 target" (November 26, 2020), https://www2.gov.bc.ca/assets/gov/environment/climate-change/advisory-council/csc_adviceletter_2030target_nov262020.pdf

Not all industries have equally viable on-site emissions reductions options. To reflect differences between sectors, one option for offsets under the Net-Zero New Industry policy would be to set different offset limits for different sectors, based on the reviews of BAT/BEP submitted with net-zero plans. This would ensure that facilities would not over-use offsets to meet their net-zero requirements if other technologies were available.

Additionally, regular reviews should be conducted of the broader offset market, which impacts facilities under the forthcoming Net-Zero New Industry policy, OBPS, and oil and gas emissions cap.

8. Should facilities be allowed to bank a limited number of offsets ahead of the year of obligation, and if so, under what terms?

We recommend that the net-zero industrial policy align with the restrictions proposed in the B.C. OBPS, where eligible offset units are limited to those vintages issued within three years of the compliance year.

9. Are there restrictions to the use of CCS emissions reductions outside of B.C.'s offset system that would ensure their credibility?

We recommend that B.C. prioritize in-province offsets, in order to better track emissions reductions, ensure that high-quality offsets are used, and maintain the stability of the credit and offset markets. In special circumstances, high-quality offsets from other jurisdictions (for instance, Alberta) could be allowed subject to specific eligibility criteria and approval (similar to the approach in TIER).

10. Should compliance payments be used as a compliance option? Why or why not? How should the compliance payment rate be determined (for example aligned with the carbon price level)? Should there be a limit on the extent to which this compliance option can be used?

We recommend that compliance payments are not used as a compliance option. In order to align with net-zero by 2050, most emissions reductions should take place on-site and take advantage of new and existing technologies, which are likely to become more cost-effective in the coming decades. Only a limited amount of offsets should be used for compliance in 2050, to address persistent emissions for which there is no viable decarbonization solution (which will be identified through the BAT/BEP assessment in the net-zero plans). However, regular reviews of provincial offset supply and demand should take place, given the forthcoming OBPS and emissions cap which will may also include limited use of offsets.

Other Considerations

11. How can the Province support equity between new and existing industrial facilities?

New facilities inherently have more cost-effective reductions available because a facility can be designed from the start to incorporate low emissions technology. New facilities should be required to achieve lower emissions levels than existing facilities. Retrofitting existing facilities is more expensive. Methane regulations in Canada and the US acknowledge this by setting stricter rules for new facilities than existing. Not doing so may penalize existing facilities where emissions reductions are more expensive.

The Net-Zero New Industry policy should be used to set stricter requirements for new facilities, while the upcoming output-based pricing system provides incentives for existing facilities to reduce emissions.

12. How can the Province continue to foster industrial development under the Net-Zero New Industry Policy?

Industrial sectors that are aligned with a net-zero future have immense growth potential in British Columbia and should be prioritized in the near-term. There are several opportunity areas that have been identified by the B.C. Regional Energy and Resource Table as of high potential and importance to B.C.'s economy given the global energy transition: critical minerals, electrification, advanced manufacturing, buildings, clean fuels/hydrogen, forests, clean technology and carbon management, and regulatory efficiency.

It is key to build on the successes outlined in the Regional Table Framework. Many sectors will thrive on the path to net-zero or have co-benefits for new industrial facilities to meet the objectives of this proposed Net-Zero New Industry Policy (like clean technology, carbon management, electrification, and regulatory efficiency). B.C. should develop policy interventions that enable these industries to become established and grow, in a manner that: respects Indigenous rights, complements Indigenous-led conservation, promotes Indigenous-led opportunities in the renewable energy sector, enhances landscape-level planning and minimizes deleterious impacts on biodiversity, wildlife corridors and connectivity.

13. What support does new industry need to thrive within a Net-Zero New Industry Policy context?

As outlined in the BC Regional Energy and Resource Table Framework, there are "challenges associated with multiple and sometimes overlapping mandates and jurisdictions; unclear regulatory pathways for emerging sectors; measures to improve economic inclusion of

Indigenous citizens; and the need for clear guidelines to ensure respectful, early, and ongoing engagement with rights-holders".

It is key to build on the successes outlined in the Regional Table Framework. Many sectors will thrive on the path to net-zero or have co-benefits for new industrial facilities to meet the objectives of this proposed Net-Zero New Industry Policy (like carbon management, electrification, and regulatory efficiency). B.C. should develop policy interventions that enable these industries to become established and grow, in a manner that: respects Indigenous rights, complements Indigenous-led conservation, promotes Indigenous-led opportunities in the renewable energy sector, enhances landscape-level planning and minimizes deleterious impacts on biodiversity, wildlife corridors and connectivity.

With several new policies in development (the New Industry Net-Zero, OBPS, and oil and gas emissions cap) in addition to existing regulations, new industry—especially emissions-intensive industrial operations—face a unique challenge in meeting those emissions reductions requirements. Increasing regulatory efficiency (while ensuring best-in-class integrated assessment processes) is one method of easing the burden of an inherently complex policy landscape, and should be prioritized.

The Clean Energy Major Projects Office, which aims to help new projects navigate regulatory processes, access provincial programs, and reach final investment decisions, has an important role to play in supporting new industrial development and kick-starting low-carbon industries in B.C. Additional, sector-specific support may also be needed to move projects along the approval process; for instance, the B.C. Hydrogen Office published in 2023 a Regulatory Mapping Study, Carbon Intensity Report, and CCS Storage Atlas, all aimed at accelerating the development of the provincial hydrogen sector.

14. How can the Province best ensure complementarity among various carbon reduction tools, including the OBPS, oil and gas sector cap, methane regulations, and net-zero new industry requirements?

Regular reviews of B.C.'s complete policy package should occur, in order to monitor emissions trajectories and ensure that these comprehensive policies are achieving their stated objectives.

We recommend that modelling be conducted and released to transparently show the incremental effect on GHGs of each of these policies.