

**Indigenous concerns with using carbon dioxide removal to achieve
Canada's net-zero target**

A submission to the Standing Committee on Environment and Sustainable
Development regarding Bill C-12

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Standing Committee on Environment and Sustainable Development
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Re: Indigenous concerns with using carbon dioxide removal to achieve Canada's net-zero target

The Athabasca Chipewyan First Nation (ACFN), Beaver Lake Cree Nation (BLCN), and the Mikisew Cree First Nation (MCFN) (together, the "Nations") call upon the Standing Committee on Environment and Sustainable Development (the "Committee") to amend Bill C-12 – the *Canadian Net-Zero Emissions Accountability Act* to ensure that achieving net-zero greenhouse gas (GHG) emissions by 2050 occurs in a way that results in effective climate change mitigation and protects our Aboriginal and Treaty rights from further impairment from oil sands development.

Bill C-12 does not specify the role of emissions reductions and carbon dioxide removal (CDR) in achieving Canada's net-zero target. This creates the opportunity for CDR to be used inappropriately and excessively to achieve net-zero – replacing absolute GHG emissions reductions and allowing for continued fossil fuel production and consumption. We are concerned for two reasons:

- 1) **Climate Change.** As Indigenous communities located in northern Canada, we are disproportionately impacted by climate change.

CDR is not an effective, feasible, or equitable tool for achieving net-zero emissions. Reliance on CDR to achieve net-zero will replace absolute GHG emissions reductions and will result in Canada failing to address its emissions - leaving Indigenous communities to continue to bear the brunt of climate change impacts.

- 2) **Oil sands impacts.** The oil sands are located in our territories. Not only does the oil sands industry constitute a large and increasing share of Canada's GHG emissions, but it causes a range of other environmental impacts that have significant and adverse effects on our lands and people, wildlife, community health, and our ability to exercise our Aboriginal and Treaty rights.

Reliance on CDR on achieve net-zero will allow oil sands production to continue, and therefore, allow for the continued destruction of our lands and impacts to our people.

Following the example set by climate-leading jurisdictions around the world, we urge the Committee to amend section 6 of Bill C-12 to include an explicit target for emissions reductions. We recommend:

6(2) The target of net-zero emissions shall be achieved by reducing domestic emissions at least 90% below 2005 levels.

[The Impacts of the Oil Sands on the Nations](#)

The Athabasca Chipewyan First Nation and the Mikisew Cree First Nation are located in northeastern Alberta. Our overlapping territories are centred on the Peace Athabasca Delta (PAD), one of the largest freshwater deltas in the world and part of Wood Buffalo National Park, a UNESCO World Heritage Site. The health of the PAD is essential to the health of both of our Nations. Due to the importance of the

PAD to our respective ways of life, ACFN is known in Dené as the *K'áí Tailé Dené*, the “people of the land of the willow” while the MCFN live by the Cree concept of *nipî tapîtam* - “water is everything”. ACFN and MCFN are signatories to Treaty 8, which provides constitutional protection to our rights to hunt, trap, and practice our “usual vocations” in the Treaty 8 area.

The Beaver Lake Cree Nation is located northeast of Edmonton, Alberta. Our territory includes parts of eastern Alberta and western Saskatchewan. BLCN is a signatory to Treaty 6, which provides constitutionally protected rights and guarantees that there would not be an interference to our way of life, including hunting, trapping, and fishing on the lands and waters on which we had long relied.

The oil sands are located squarely within ACFN, BLCN, and MCFN territories. ACFN and MCFN’s primary community, Fort Chipewyan, and our respective reserves are downstream of the oil sands. The core territory of BLCN is located within an area of extreme industrial development including clear-cut logging and oil and gas activities.

Since the 1970’s, the Nations have witnessed the significant, adverse impacts of the oil sands on our land and waterways, the fish and wildlife we depend on, our community health, and our ability to exercise our Treaty rights. These impacts act synergistically and cumulatively and they will be exacerbated by climate change. The impacts include:

- **Habitat Destruction and Fragmentation.** Open-pit mining results in the destruction of massive areas of habitat. In-situ mining causes large scale habitat fragmentation. Both reduce the habitat that is available to a wide variety of species, including those that have particular cultural importance to our Nations, such as wood bison, woodland caribou, moose, and migratory birds. As a result, populations of these species have dwindled or moved, making it more difficult for our members to hunt them.
- **Water Use.** Processing bitumen requires significant amounts of water from the Athabasca River, reducing flows that are already impaired by climate change. Low flows contributes to the drying of the PAD and other rivers and streams, which makes it difficult and unsafe for our members to access large parts of our territories (include our reserves) that are only accessible by boat.

In-situ mining involves injecting steam underground to allow bitumen to be pumped to the surface. This requires significant amounts of water from the regional watershed and large amounts of energy to convert the water to steam. Pilot projects are injecting hydrocarbon “solvents”, such as butane, instead of steam which could reduce water and energy requirements, but has unknown impacts on water quality.¹

- **Tailings Ponds.** The storage of oil sands waste water results in large man-make lakes of toxic sludge. Hundreds of thousands of migratory birds land on the tailings pond each year, either dying or suffering severe health effects. However, most migratory birds no longer fly over this area – leaving our members with fewer and fewer birds to hunt in the spring.
- **Water Contamination.** Discharge and runoff of water from mining operations, airborne pollution, and seepage from tailings ponds introduces heavy metals and other toxic chemicals

into the Athabasca River and local watersheds, polluting the water and poisoning fish and aquatic species. It is no longer safe for our members to drink from waterbodies out on the land or eat fish caught downstream of the oil sands due to high concentrations of toxins in their bodies. Our members have some of the highest rates of rare forms of cancer in North America.

- **Access to the Land.** Oil sands mines are so large that they block our members and the wildlife we hunt from accessing parts of our territories. The noise, light, and smell that emanates widely from the mines also deters land use, ruins the sense of quiet and peace we experience on the land, and disrupts our cultural and spiritual connect with the land. In-situ mines also degrade the quality of the land to such an extent that they ruin our connection to the land, deterring and excluding our members and our non-human relatives from large parts of our territories.

These impacts are destroying the land, poisoning our people, and undermining our ability to practice our Aboriginal and Treaty rights, languages, and cultural and spiritual practices. Our concerns with these devastating impacts have been well-documented over the past decades in our submissions to government, regulators, and in environmental assessment processes. Yet, as project after project is approved, these impacts continue to grow, and our concerns are never meaningfully addressed.

Climate change, the oil sands, and the Nations

The oil and gas sector is a major source of GHG emissions in Canada, producing 191 million tonnes (Mt) in 2019, or 26% of Canada's total emissions.² Within this sector, the largest share of emissions comes from the oil sands (83.3 Mt), which constitutes 11% of Canada's total emissions.³

While the emissions intensity of oil sands production has declined in recent years, absolute emissions from oil sands have more than doubled since 2005 and are projected to keep growing as production increases.⁴ The oil sands are expected to produce 22% of Canada's total emissions by 2030 and, as of December 2019, the Alberta Energy Regulator had approved projects with cumulative annual emissions of 147 Mt CO₂e.⁵

The Canadian Energy Regulator forecasts that Canada will hit peak oil production in 2039, with over 80% coming from the oil sands.⁶ The oil and gas sector is expected to emit 200 Mt CO₂e by 2050, the same year Canada is supposed to reach net-zero.⁷

When downstream emissions – including from combustion of oil products - are considered, the impact of the oil sands is much greater. The majority of Canada's oil is exported and in 2014, the amount of emissions from Canada's fossil fuel exports (738 Mt) was more than the total emissions released within Canada (732 Mt).⁸ This means that even if the oil sands industry can reduce its production emissions, it is profiting off a product that has significant downstream effects on the climate.

From 2021-2050, Canada anticipates producing enough oil and gas to add about 36.2 billion tonnes (Gt) of CO₂ into the atmosphere.⁹ This is a "carbon bomb" of global significance as it represents 16% of the world's remaining carbon budget, a disproportionate amount of the remaining carbon we can safely release and stay below 1.5°C.

Climate change disproportionately affects Indigenous communities

In its recent decision on carbon pricing, the Supreme Court of Canada recognized what Indigenous communities and scientists have known for a long time: that climate change “poses a grave threat to humanity’s future” and that it has “had a particularly serious effect on Indigenous peoples, threatening the ability of Indigenous communities in Canada to sustain themselves and maintain their traditional way of life.”¹⁰

Climate change has a disproportionate impact on Indigenous peoples because we continue to live off the land and depend on healthy lands and waters for our economic, social, and cultural wellbeing. The wellbeing of the land and our people depends on a stable climate. In addition, climate change exacerbates the structural inequalities that we face, including political and economic marginalization, loss of land and resources, violations of our rights, discrimination and unemployment. And, since northern Canada is projected to warm more than southern Canada,¹¹ northern Indigenous communities such as ACFN, MCFN and BLCN will experience the impacts of climate change even more severely.

The Nations are already experiencing climate change

Our Nations have already witnessed changes to our territories from climate change. Some of the starkest examples include:

- **Low Water.** Climate change is causing the Peace Athabasca Delta to dry out and reducing the amount of water in the Athabasca River and its tributaries. These changes are exacerbated by oil sands water withdrawals from the Athabasca River and the regional watershed and flow regulation by hydroelectric dams along the Peace River. Low water means less habitat for fish, migratory birds, muskrat, moose and other important aquatic species that we rely on. Low water results in warmer lakes and rivers and causes algae blooms – both of which impair fish health. Low water also makes boat travel to our reserves and hunting grounds difficult (and sometimes impossible) for large parts of the year. Continued warming will exacerbate the drying trend; research by scientists at Environment and Climate Change Canada projects that climate change will increase the mean air temperature in our region by up to 7°C by 2080.¹²
- **Winter Roads.** Climate change has shortened the period that the winter road from Fort McMurray to Fort Chipewyan can be used. The road takes longer to freeze, melts earlier, and is more hazardous. This is the only land-based route into Fort Chipewyan and allows movement of important supplies that cannot be flown or shipped by boat into the community, such as fuel, construction materials, and medical gases. The Canadian Council of Ministers of the Environment has recognized that due to the changing climate “winter roads that provide supply links to many northern communities are becoming less reliable and cannot be used for as long”.¹³
- **Caribou.** Caribou – both woodland and barrenland populations - have significant cultural and spiritual value to the Nations. We no longer hunt woodland caribou because oil sands development in their habitat has caused their numbers to plummet. They are listed as “Threatened” under Canada’s *Species at Risk Act* (SARA). Climate change threatens the remaining populations, particularly through increased forest fire frequency.

Barrenland caribou are not yet SARA-listed, but are listed as “Threatened” by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Barrenland caribou used to range in large numbers as far south as Fort Chipewyan but no longer do so today. We are still permitted to hunt barrenland caribou, but it is becoming harder to find them and our members have to travel further to do so. Climate change has changed the habitat and migration routes of the caribou and is an underlying driver for many threats to the caribou and their habitat.¹⁴

We are taking steps to monitor and protect our territories and Treaty rights, including via Indigenous-led community based monitoring programs. However, we can only do so much against climate change. The nature of climate change and the disproportionate impact of climate change on Indigenous communities, particularly those in the North, means that Canada needs to enact strong climate change accountability legislation without delay.

Using carbon dioxide removal to achieve net-zero is dangerous

Under the Paris Agreement, the international community has committed to maintaining global temperature rise to below 2°C above pre-industrial temperatures, and below 1.5°C if possible. In order to achieve these temperate goals, the United Nations Intergovernmental Panel on Climate Change (IPCC) requires that we reduce global emissions by 45% by 2030 and achieve net-zero emissions by 2050.

Canada is a signatory to the Paris Agreement, and has recently committed to reducing our national emissions by 42-45% by 2030. Bill C-12 sets a national emissions target of net-zero by 2050.

While these targets are clear, how Canada will achieve them is not. Net zero emissions can be achieved by reducing emissions, removing carbon dioxide from the atmosphere, or some combination of both. Carbon dioxide removal (CDR) includes both engineered methods (e.g. direct air capture and carbon capture and sequestration) and nature-based solutions (e.g. planting trees, increasing soil carbon).

Problems with CDR as an approach to mitigating climate change

Emissions reductions and CDR are not equal or interchangeable approaches to addressing climate change. Removing one tonne of carbon from the atmosphere is not the same as preventing one tonne of carbon from entering the atmosphere. In fact, it is dangerous to rely on CDR to achieve net-zero because it is not an effective, reliable, or equitable approach to mitigating climate change for a number of reasons, including:

- **Immediacy and Permanence.** Emission reductions deliver immediate and permanent effects to atmospheric carbon and do not contribute to additional climate impacts, including triggering positive feedback loops, or suffer from uncertainty or rebound effects.
- **Feasibility.** Engineered CDR approaches are expensive, energy intensive, risky, and unproven at scale.¹⁵ Some are decades away from commercialization. Given this uncertainty, it is reckless to assume that CDR techniques will be available on the necessary timeframe and scale required to achieve our temperature goals. The immediate effects of emissions reductions cannot be substituted for future and uncertain promises of carbon removal.
- **Risky Reliance.** Reliance on nature-based solutions to remove carbon is a risk since storage is not permanent (e.g. leakage occurs when trees die, are harvested, or burn down) and occurs

over longer timeframes than emissions are released.¹⁶ Importantly, the capacity of terrestrial sinks to store carbon is finite and is required to remove the carbon already in the atmosphere. They cannot also capture additional carbon released from fossil fuels.

- **Climate Justice.** For nature-based solutions at the necessary scale, significant amounts of land are required. The availability of land is finite and is subject to competition from other important land uses. Using this land for CDR will threaten biodiversity, food production, and the rights and cultures of Indigenous peoples.
- **Rebound effects.** The removal of large quantities of carbon from the atmosphere slows the uptake of carbon dioxide by terrestrial sinks (e.g. trees, soil) and forces carbon dioxide out of the ocean and back into the atmosphere.¹⁷ This means that only about 50% of the carbon sequestered by CDR is ultimately removed from the atmosphere. As such, CDR is a very inefficient way to stop atmospheric carbon rise, especially when those emissions could have been reduced.
- **Leave CDR for net-negative.** Atmospheric carbon levels are already at unsafe levels. Once we stop increasing atmospheric carbon (i.e. reach net-zero) we have to go “net-negative” and pull more carbon out of the atmosphere than we put in. As CDR resources are finite, if we rely on CDR to address emissions that can be reduced, we risk using up our capacity to go net-negative. Shifting away from a high-carbon society is inevitable and we must use the correct tools in the appropriate sequence. First, we must reduce emissions to stop atmospheric carbon rise by 2050. Then, we must remove carbon to reduce atmospheric carbon to safe levels.

These issues mean that Canada cannot leave it open for CDR to assume a large role in achieving net-zero. The Committee must consider the role that Bill C-12 has in shaping how Canada will reach net-zero, including by specifying the roles of emissions reductions and CDR.

Fossil Fuel Industry and CDR

As more countries and companies set net zero goals, CDR is becoming an increasingly popular feature in climate plans because it creates the perception that we can continue releasing emissions and avoid (or delay) making the deeper, structural changes needed to reduce emissions and transition off fossil fuels. This is an attractive proposition for industries and jurisdictions that are dependent on fossil fuel production.

A number of fossil fuel companies around the world have already adopted net-zero targets. They plan on continuing to extract fossil fuels but have not published details about how they will achieve net-zero.¹⁸ However, some have indicated that CDR will play a large role. For example, Shell has suggested it will plant 50 million hectares (Mha) of forests – an area the size of Spain.¹⁹ Globally, the total available land that could be reforested without affecting food production or biodiversity is about 500 Mha, which means that just one company would take up 10% of the total available land.²⁰

In the oil sands, a number of companies have made pledges to achieve net-zero: Husky by 2050 and Canadian Natural and Cenovus Energy on undefined “long-term” timelines.²¹²²²³ None of these companies have explained how they will reach net-zero, however, they all pledge to reduce their emissions intensity and all expect to continue producing oil far into the future. This suggests a large role for CDR in their plans to achieve net-zero.

Indeed, CNRL currently has ownership stakes in three facilities that utilize carbon capture and sequestration. Only one of these projects stores the carbon in the ground; the other two use the captured carbon in “enhanced oil recovery”.²⁴ This is technique to extract oil that would otherwise have been left in the ground, thereby using CDR to facilitate additional greenhouse gas emissions.

Without detailed plans, it is difficult to determine how oil companies will use CDR to achieve net-zero. However, given the fact that the majority of oil companies plan to continue producing oil into the future, it is highly likely that they anticipate that CDR will play a big role.

Real action on climate change means leaving fossil fuels in the ground

Recognizing that fossil fuels are primarily responsible for climate change and acknowledging the limitations of CDR, countries around the world are starting to phase out fossil fuel production.²⁵ A number of nations have implemented bans on fossil fuel production, including France, Germany, and New Zealand.

These policies align with climate science. The United Nations’ Production Gap report estimates that global fossil fuel production must decrease by about 6% per year from 2020 to 2030 to keep temperature rise to 1.5°C.²⁶ This means that significant quantities of fossil fuels are “unburnable” and must remain in the ground. Initial calculations suggest that two-thirds of global fossil fuel reserves must be kept in the ground to ensure global warming does not surpass 2°C.²⁷ In Canada that means over 70 % of Canada’s oil reserves.²⁸

Bill C-12 must specify the role of emissions reductions and CDR in achieving net-zero

As currently drafted, Bill C-12 fails to specify the role that emissions reductions and CDR will play in achieving net-zero. This treats emissions reductions and CDR as equals and ignores the fact that CDR is not an effective, feasible, and equitable means to reach net zero.

Jurisdictions and companies that are dependent on fossil fuels already perceive CDR as means to justify continued fossil fuel extraction, including Canadian oil sands companies. If Bill C-12 is not amended to specify the role that emissions reductions and CDR will play in meeting net-zero, the federal government will have effectively provided an open invitation to the oil sands industry to base their “climate action” on CDR and offsets. This will have two outcomes:

- 1) **Exacerbate climate change impacts on Indigenous communities.** The widespread deployment of CDR at the necessary scale is highly unlikely to occur given the problems with effectiveness, feasibility, and equity. Emissions will continue, causing atmospheric carbon to continue to rise and exacerbating climate change impacts. Indigenous communities, particularly those in the north such as ACFN, BLCN, and MCFN, will continue to be disproportionately affected by the impacts of climate change.
- 2) **Continued environmental impacts from oil sands.** Ongoing oil sands production means the continuation of all of the environmental impacts of oil sands in our territories. These impacts have devastated our lands and waters, impaired the health of wildlife and our communities, and impaired the exercise of our Aboriginal and Treaty rights. This is a critical consideration in decisions about whether or not CDR should be used and for how long oil and gas production

should continue. This consideration is often absent from discussions about mitigating climate change and is a key component of climate justice.

RECOMMENDATION: in order to prevent these outcomes, we recommend to the Committee that Bill C-12 be amended to include the following provision:

6(2) The target of net-zero emissions shall be achieved by reducing domestic emissions at least 90% below 2005 levels.

Setting a minimum threshold of emissions reductions at 90% acknowledges the deep emissions reductions that must occur to mitigate climate change. It also acknowledges that there will be some emissions that cannot be reduced and must be addressed by CDR. CDR can also be used to exceed our climate goals and, after 2050, CDR will be required in greater amounts to go net-negative and return atmospheric carbon to safe levels.

This approach of setting distinct roles for emissions reductions and CDR is supported by climate scientists²⁹ and is already being applied in climate-leading jurisdictions around the world. For example, Sweden has a target of achieving net-zero by 2045 and requires that domestic emissions are reduced at least 85% below 1990 levels.³⁰ The remaining emissions can be addressed by “supplementary measures” such as carbon sequestration by forests, carbon capture and storage, and offsets.

Setting a minimum threshold of emissions reductions also acknowledges that the majority of Canada’s fossil fuel reserves, including in the oil sands, must be left in the ground. The Nations that have received economic benefits from the oil sands, we support the phasing out of oil sands and fossil fuel production in Canada over time.

To that end, we stress the importance of a “just transition” – the implementation of a carefully planned framework that ensures that workers and communities that are dependent on fossil fuel production are provided adequate financial investment, social supports, education, and retraining to develop alternate and meaningful employment opportunities. This transition must be development and implemented with the full participation of affected workers and communities, including the Nations.

Summary

Thank you for the opportunity to present our submission to the Committee. We view Bill C-12 as an important step to ensure meaningful action on climate change and to ensure that Indigenous communities are not subject to ongoing environmental impacts of fossil fuel production.

We recommend that Bill C-12 include an explicit target for emissions reductions, thereby setting a limit on the use of carbon dioxide removal to achieve net-zero by 2050. Our recommendation is supported by science and best practice and we look forward to the Committee addressing our concerns and implementing our recommendation as it debates Bill C-12.

Recommendation:

6(2) The target of net-zero emissions shall be achieved by reducing domestic emissions at least 90% below 2005 levels.

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