

January 19, 2022

To: Chrystia Freeland, Deputy Prime Minister & Minister of Finance

CC: Jonathan Wilkinson, Minister of Natural Resources  
Steven Guilbeault, Minister of Environment and Climate Change

**Letter from scientists, academics, and energy system modellers: Prevent proposed CCUS investment tax credit from becoming a fossil fuel subsidy**

Dear Deputy Prime Minister,

As scientists, academics, and energy system modellers we are deeply concerned with the government's proposal to introduce a new investment tax credit for carbon capture, utilization and storage (CCUS).

**We urge you to not introduce the proposed investment tax credit for CCUS** because it will constitute a substantial new fossil fuel subsidy. As well as undermining government efforts to reach net-zero by 2050, the introduction of this tax credit would contradict the promise made by your government to Canadians during the election period to eliminate fossil fuel subsidies by 2023 as well as our international commitments under the Paris Agreement. And once new subsidies are put in place, they are very hard to repeal.

Effective solutions to achieve deep emission reductions in the next decade along a pathway to zero emissions are already at hand, including renewable energy, electrification and energy efficiency. Funding CCUS diverts resources from these proven, more cost effective solutions that are available on the timeframes required to mitigate climate change.

Despite decades of research, CCUS is neither economically sound nor proven at scale, with a terrible track record and limited potential to deliver significant, cost-effective emissions reductions.<sup>1</sup> For example, one of Canada's flagship CCUS projects, Boundary Dam 3, initially promised a capture rate of 90%. It never reached that rate, so SaskPower eventually lowered its expectations to 65%—a target the facility still regularly fails to meet.<sup>2</sup> Current global carbon capture capacity is 39 MT; 0.1% of annual emissions from fossil fuels.<sup>3</sup> Yet for CCUS to play a significant role in achieving the Paris Agreement goal, gigatonnes (Gt) of CO<sub>2</sub> would need to be captured and permanently stored. Moreover, CCUS remains prohibitively expensive, while the

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<sup>1</sup> Anderson, K. & Peters, G. (2016) The trouble with negative emissions. *Science*, 354(6309). Available: <https://www.science.org/doi/full/10.1126/science.aah4567>

<sup>2</sup> Schlissel, D. (2021) Boundary Dam 3 Coal Plant Achieves Goal of Capturing 4 Million Metric Tons of CO<sub>2</sub> but Reaches the Goal Two Years Late. IEEFA. Available: <https://ieefa.org/ieefa-saskpower-hits-carbon-capture-goals-at-boundary-dam-3-more-than-two-years-late/>

<sup>3</sup> Garcia Freites, S. & Jones, C. (2020) A Review of the Role of Fossil Fuel Based Carbon Capture and Storage in the Energy System. Friends of the Earth Scotland. Online: [https://foe.scot/wpcontent/uploads/2021/01/CCS\\_REPORT\\_FINAL.pdf](https://foe.scot/wpcontent/uploads/2021/01/CCS_REPORT_FINAL.pdf)

costs of renewables have plummeted to the point that they are cheaper than fossil fuels.<sup>4</sup> So unsurprisingly, over 80% of CCUS projects in the United States have failed.<sup>5</sup>

Carbon capture for the oil and gas sector is not a climate solution. At best, it prevents some carbon dioxide from polluting facilities from reaching the atmosphere, but it is not a negative emissions technology. Despite the billions of taxpayer dollars spent by governments globally on CCUS, the technology has not made a dent in CO<sub>2</sub> emissions. Nor is it anticipated to expand to the scale needed: for this reason, the Intergovernmental Panel on Climate Change (IPCC) points to uncertainty in the future deployment of CCUS and cautions against reliance on the technology.<sup>6</sup>

Carbon capture methods are being used to boost oil production, and have therefore resulted in increased emissions.<sup>7</sup> The only existing commercially available market for captured carbon is enhanced oil recovery, whereby CO<sub>2</sub> is injected into depleted underground oil reservoirs to boost oil production—extraction that otherwise wouldn't have been possible. Globally 80% of captured carbon is being used for enhanced oil recovery.<sup>8</sup> In addition, CCUS does not address downstream emissions, which constitutes 80% of oil and gas emissions.

Furthermore, CCUS does not address environmental, social and health impacts associated with the mining, extraction, and transport of fossil fuels, faced primarily by Indigenous and front-line communities.<sup>9</sup> The buildout of CCUS infrastructure would require an enormous system of pipelines to transport the carbon. This presents serious health, safety, and environmental risks, particularly for marginalized frontline communities, which are already overburdened by industrial hazards. For example, when a CO<sub>2</sub> pipeline ruptured in Mississippi in 2020, 300 people were evacuated and 45 people had to be hospitalized.<sup>10</sup>

Finally, CCUS is financially risky. Safe, permanent, and verifiable storage of CO<sub>2</sub> is difficult to guarantee. The financial and liability risks related to carbon storage are highly likely to be transferred from the private sector to the public.

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<sup>4</sup> Luderer, G. et al. (2021) Impact of declining renewable energy costs on electrification in low-emission scenarios. *Nature Energy*. Available: <https://doi.org/10.1038/s41560-021-00937-z>

<sup>5</sup> 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>

<sup>6</sup> 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.

<sup>7</sup> 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>

<sup>8</sup> 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](https://www.research.manchester.ac.uk/portal/files/184755890/CCS_REPORT_FINAL_v2_UPLOAD.pdf)

<sup>9</sup> 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/>

<sup>10</sup> Zegart, D. (2021) *Gassing Satartia: Carbon Dioxide Pipeline Linked to Mass Poisoning*. *The Huffington Post*. Available: [https://www.huffpost.com/entry/gassing-satartia-mississippi-co2-pipeline\\_n\\_60ddea9fe4b0ddef8b0ddc8f](https://www.huffpost.com/entry/gassing-satartia-mississippi-co2-pipeline_n_60ddea9fe4b0ddef8b0ddc8f)

Put simply, rather than replacing fossil fuels, carbon capture prolongs our dependence on them at a time when preventing catastrophic climate change requires *winding down* fossil fuel use. Relying on CCUS preserves status quo fossil fuel development, which must be curtailed to meet global climate commitments.<sup>11</sup> Introducing a tax credit for CCUS for the energy sector will lock-in continued dependence on Canada's largest and most rapidly growing source of greenhouse gas emissions. Indeed, numerous modelling studies show that Canada is not on track to meet its climate change targets and this is in part due to Canada's current approach of leaning too much on short-term solutions that promote more efficient use of fossil fuels.<sup>12</sup>

The creation of a CCUS investment tax credit will not be an effective way to reduce emissions. **We strongly urge you not to introduce the tax credit.** If the Government of Canada proceeds with the tax credit, it must meet the following conditions:

- Enhanced oil recovery projects should not be eligible for the tax credit. Only 'permanent' storage projects should be considered.
- The tax credit should only be made available for sectors for which there are no decarbonization options. Oil and gas projects, including fossil or blue hydrogen, as well as plastics and petrochemical production, should not be eligible for the credit.
- The implementation of a tax credit must be contingent on the development of independent monitoring, reporting, verification, and enforcement requirements.
- The development of a governance structure to maintain and ensure the long-term environmental and fiscal integrity of CO<sub>2</sub> storage sites should be in place prior to the implementation of a CCUS tax credit.
- Companies receiving tax credits must be held accountable to mitigate harmful impacts on Indigenous and frontline communities, and provide compensation where mitigation is not possible. These communities must be involved in the design and implementation of the tax credit.

Canada can learn from the mistakes of how a similar tax credit—Section 45Q—was implemented in the US. The biggest beneficiaries of the American tax credit are oil companies.<sup>13</sup> Analysis done on the 45Q tax credit found it could result in at least an additional 400,000 barrels per day of CO<sub>2</sub>-enhanced oil production in the United States by 2035, which would directly lead to as much as 50.7 million metric tons of net CO<sub>2</sub> emissions annually—and possibly far more.<sup>14</sup> The issue of companies claiming credits for unverified tons of captured carbon is rampant in the United States under Section 45Q. In fact, an investigation by the US Internal Revenue Service

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<sup>11</sup> Welsby, D., Price, J., Pye, S., & Ekins, P. (2021). Unextractable fossil fuels in a 1.5 °C world. *Nature*, 597(7875), 230–234. <https://doi.org/10.1038/s41586-021-03821-8>

<sup>12</sup> 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/>

<sup>13</sup> CIEL (2021) Confronting the Myth of Carbon-Free Fossil Fuels: Why Carbon Capture Is Not a Climate Solution. Available: <https://www.ciel.org/reports/carbon-capture-is-not-a-climate-solution/>

<sup>14</sup> Oil Change International (2017) Expanding Subsidies for CO<sub>2</sub>-Enhanced Oil Recovery: A Net Loss for Communities, Taxpayers, and the Climate. Online: <http://priceofoil.org/content/uploads/2017/10/45q-analysis-oct2017-final.pdf>

found that 87% of the total credits claimed, amounting to nearly US \$1 billion, were not in compliance with the Environmental Protection Agency.<sup>15</sup>

Deploying CCUS at any climate-relevant scale, carried out within the short timeframe we have to avert climate catastrophe without posing substantial risks to communities on the frontlines of the buildout, is a pipe dream. We must instead move forward with proven climate solutions that will contribute the most to emissions reductions: increased electrification, wide-scale use of renewable energy, and intensifying energy efficiency.

Sincerely,

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<sup>15</sup> Inspector General for Tax Administration (April 2020) Department of Treasury Letter. Online: [https://www.eenews.net/assets/2020/04/30/document\\_gw\\_07.pdf](https://www.eenews.net/assets/2020/04/30/document_gw_07.pdf)

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