

# POLLUTING EDUCATION

The Influence of Fossil Fuels on  
Children's Education in Canada

**Full Report**

**FOR OUR  
KIDS**



CAPE  
Canadian Association  
of Physicians  
for the Environment

Association canadienne  
des médecins  
pour l'environnement  
ACME



Cover image: Chris Matzner

**Polluting Education: The Influence of Fossil Fuels on Children's Education in Canada**

A report by the Canadian Association of Physicians for the Environment and For Our Kids

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This report explores the involvement of the oil and gas industry in schools and climate-related education in Canada. Given that comprehensive, evidence-based climate education is essential to addressing climate change, and that youth will be the most affected by climate breakdown, it is imperative that the industry most responsible for driving the climate crisis be prevented from influencing the education young people receive on subjects related to climate, environment, or energy. This research documents the history and extent of industry involvement and the effect this has had on the messages conveyed—and not conveyed—in the educational programs the fossil fuel industry supports. One of our key findings is that fossil fuel companies have, through their involvement in education, effectively obscured the industry's role in driving climate change while also limiting public understanding of the urgent need to transition away from fossil fuels. The report describes governmental and institutional policy levers that could be used to protect climate change education from the fossil fuel industry, and puts forward steps that parents, teachers, and concerned citizens could take to effect these policy changes.

This report aims to promote informed discussion of the fossil fuel industry's influence on climate education among all those concerned about the welfare and education of youth in Canada. We hope that this report will also contribute to global understanding of the need for fossil-fuel-free education to protect young people and safeguard their future.

This report is supported by funding from **The Raffi Foundation for Child Honouring**. It was commissioned by For Our Kids and the Canadian Association of Physicians for the Environment (CAPE), and is intended to generate awareness about the involvement of oil and gas companies in K–12 climate-related education.

**For Our Kids** is a parent-led network of volunteers who are driven to advocate for action on the climate crisis to protect children, grandchildren and all future generations. As parents and caregivers, they want to ensure that the education children receive in school equips them with the knowledge, skills, and values to address climate change and build resilience in the face of climate threats.<sup>1</sup>

**CAPE** is a physician-led organization with over 36,000 supporters across the country. It plays a unique role at the intersection of health, the environment, and justice, to bring a credible, evidence-based perspective delivered by the trusted voices of doctors, other health professionals, and researchers to enhance equity and support planetary health. Recognizing that fossil fuel companies, like tobacco companies, are promoting products that threaten human health, CAPE doctors have called for a ban on all fossil fuel advertising and led a campaign to ban fossil fuel sponsored curricula from schools in British Columbia in 2022.<sup>2</sup>

For the health and safety of younger generations, both CAPE and For Our Kids are committed to ensuring that education be protected from oil and gas messaging.

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<sup>1</sup> “Take Action—at Your School,” For Our Kids, 2022, [https://www.forourkids.ca/school\\_actions](https://www.forourkids.ca/school_actions).

<sup>2</sup> “Doctors, educators and students call on B.C. Minister of Education to ban fossil fuel promotion from schools,” CAPE, March 2, 2022, [https://cape.ca/press\\_release/ban-fossil-fuel-promotion-in-bc-schools/](https://cape.ca/press_release/ban-fossil-fuel-promotion-in-bc-schools/).

## Executive Summary

Oil and gas companies are actively shaping children's understanding of climate science and climate change solutions while they are a captive audience in classrooms across Canada.

At least 39 oil and gas companies and 12 industry-tied organizations are using a variety of methods to influence how climate, energy, and environmental education is taught across the country. Their strategies have included: providing branded educational materials to schools; establishing partnerships with government to develop curricula and resources; sponsoring school activities; and funding and supporting third-party environmental education providers. Fossil fuel companies engaged in K–12 education in Canada include Cenovus Energy, Suncor, Imperial Oil, Canadian Natural Resources, ConocoPhillips, Enbridge, TC Energy, Fortis, and many others.

While fossil fuels produce more than 75% of all climate-heating greenhouse gas emissions, industry-supported education materials were found to consistently muddle scientific evidence about the causes of climate change, and failed to address the urgent need to transition away from fossil fuels. They routinely presented climate concerns as a “perspective” alongside pro-industry counterarguments, and emphasized individual actions while ignoring corporate responsibility. This is a direct conflict of interest, akin to tobacco companies teaching health topics or McDonalds sponsoring nutrition classes (they did) and ensuring that the lessons include their “side” of the story.<sup>3</sup>

Fossil-fuel driven climate change is arguably the most significant threat to children's health and future.<sup>4</sup> Children are especially vulnerable to climate impacts, with greater exposure to air, food, and water pollution per unit of body weight than adults. In addition, youth in Canada are facing mounting climate anxiety, with 78% reporting that concern about climate change affects their mental health.<sup>5</sup> Education will be key to avoiding the most severe impacts of climate change, and evidence-based climate change education that also addresses mental health harms and climate anxiety is what is needed to equip students with the knowledge and skills required to build a more just, sustainable, and low-carbon future.

This investigation reveals that fossil fuel industry influence has occurred in the context of a government funding gap in climate education. Oil and gas companies have exploited that gap in ways that has left the industry well-placed to influence public opinion on climate change, climate solutions, and the impact of the fossil fuel industry. By maintaining a presence in schools and funding education groups, the industry has long been able to shape the public's understanding of climate change, using misinformation to position fossil fuels as benign, protect industry interests, and delay climate action.

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<sup>3</sup> Huehnergarth, Nancy Fink. “Not Lovin’ It: McDonald’s Serves Up Nutrition Education In Schools.” *Forbes*. Nov 11, 2015, [www.forbes.com/sites/nancyhuehnergarth/2015/11/10/not-lovin-it-mcdonalds-serves-up-nutrition-education-in-schools/](http://www.forbes.com/sites/nancyhuehnergarth/2015/11/10/not-lovin-it-mcdonalds-serves-up-nutrition-education-in-schools/).

<sup>4</sup> Nick Watts, Markus Amann, Nigel Arnell, Sonja Ayeb-Karlsson, Kristine Belesova, Maxwell Boykoff, Peter Byass et al. “The 2019 report of The Lancet Countdown on health and climate change: ensuring that the health of a child born today is not defined by a changing climate.” *The Lancet* 394, no. 10211 (2019): 1836-1878 [http://dx.doi.org/10.1016/S0140-6736\(19\)32596-6](http://dx.doi.org/10.1016/S0140-6736(19)32596-6)

<sup>5</sup> Lindsay P. Galway and Ellen Field. “Climate emotions and anxiety among young people in Canada: A national survey and call to action.” *The Journal of Climate Change and Health* 9 (2023): 100204. <https://doi.org/10.1016/j.joclim.2023.100204>

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## Preface

*By: Britt Wray and Raffi*

Oh, what a time to be an educator on planet Earth!

The climate crisis is now the biggest public health threat humanity faces, and scores of studies have shown that our precious children, always, are the first to bear the brunt of these impacts. Yet hardly any educational system is honestly nor adequately preparing kids to navigate the severe challenges they must now face and transform into leadership opportunities that can help mitigate further warming and support communities to adapt along the way.

It's critical that we teach children and youth about the climate crisis in age-appropriate ways that follow authoritative science instead of corporate propaganda, for they're the ones who will be most impacted by whatever we choose to do—or not do—as a collective. Our young have the most to lose or gain.

While many students are being prepared for jobs that may not exist when they grow up as society wobbles under compounding threats, at schools across the country, the topic of climate change is too often overlooked because “nothing matters and the world is ending, anyway.” As this report shows, when climate change does enter the classroom, the curriculum in Canada has been tainted by the fossil fuel companies that sponsor it. They manipulate teaching materials to try and mold perceptions of oil, coal, and gas for their benefit, at a time when we clearly must phase out fossil fuels so our children can have a chance at a safe and secure life. We must call this out for what it is: shameful.

As a researcher and author working to defend young people from debilitating mental health challenges as the planet heats up, and as a children's troubadour known for bringing joy and calm to families all over the world through songs like “Baby Beluga” and “Big Beautiful Planet,” we are greatly troubled by what this report describes. We are disappointed in Canada's education sector for granting the fossil fuel industry all-access passes to pump our kids' classrooms full of petro-pedagogy. Read this report, and let it fuel you for changing this situation.

*Decades of lies, decades of denial,  
turned up the heat, engulfed us in fire.  
Decades of obstruction, though people knew better.  
Caused this climate emergency and we gotta set ourselves free:  
From this climate emergency!*

From Raffi's climate song, [“Young People Marching.”](#)

Canadian educators can play an important role in helping us all to set ourselves free. We can find a third path between “passive optimism” and “doom and gloom”—one that is not naïve nor nihilistic—leading the next generation towards greater purpose and meaning as they find ways to

help stop the climate crisis at this critical time to be alive. Lessons approved by fossil fuel companies indoctrinating students are unacceptable.

From the Raffi Foundation's [\*Covenant for Honouring Children\*](#):

*We commit ourselves to peaceful ways and vow to keep from harm or neglect these, our most vulnerable citizens. As guardians of their prosperity we honour the bountiful Earth whose diversity sustains us. Thus we pledge our love for generations to come.*

Will Canadian educators honour this agreement? To do right by our young, we must all declare: it's time to clean up the oil spill in the classroom!

With fierce love for this planet and all its children,  
Britt and Raffi

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*Raffi Cavoukian, C.M., O.B.C., is known to millions by his first name alone. A renowned children's troubadour for five decades, he is also an author, music producer, ecology advocate and climate activist with five honorary degrees. Raffi is the founder of Child Honouring, an original philosophy for restoring ecosystems and building community by respecting the universal and irreducible developmental needs of the very young. He co-edited the 2006 anthology, Child Honouring: How To Turn This World Around, in which he wrote the introduction and conclusion. Raffi is founder and board chair of the Raffi Foundation For Child Honouring, working to advance Child Honouring as a universal ethic. In 2024, Raffi released his latest kid's album, Penny Penguin.*

## Introduction

Experts from the United Nations Intergovernmental Panel on Climate Change (UNIPCC), the World Health Organization, and the International Energy Association (IEA) identify climate change as the most significant threat facing humanity.<sup>6</sup> It is well established that the heating of the atmosphere, driven primarily by emissions from burning fossil fuels, is disrupting the Earth's climate systems, leading to more extreme weather events globally in the form of extended droughts and heatwaves, more frequent and extreme wildfires, catastrophic flooding, and more frequent and intense hurricanes. Human health, food security and global stability are under threat and young people everywhere face a future of increasing danger and deprivation if action is not taken to rapidly reduce greenhouse gas emissions.

Despite the devastation already caused by climate change, and despite the warning of UN scientists that emissions needed to be cut 45% by 2030 to limit warming to 1.5°C, governments have delayed taking action. The result is that greenhouse gas emissions have continued to rise and the window for action has narrowed.<sup>7</sup> In its 2024 annual Emissions Gap Report, the United Nations Environment Programme warned that current government policies have the world on track for “catastrophic” average global warming of 2.6° to 3.1°C. As the report states, this is the consequence of the “continued lock-in of carbon-intensive infrastructure” and governments’ failure to accelerate the transition away from fossil fuels, which scientists agree is essential to avoid the most severe impacts of climate change.<sup>8</sup> Among national governments at fault in this regard, Canada, with the largest gap between policy promises and policy action, has one of the worst records.<sup>9</sup>

The climate crisis is also a health crisis, with children hit the hardest.<sup>10</sup> Medical and public health experts note that because children’s minds and bodies are still developing, and because their exposure to air, food, and water contaminants is greater than that of adults per unit of body weight, they are at higher risk from climate change harms such as air pollution, heat exposure, extreme weather events, food insecurity and the spread of disease.<sup>11</sup> These risks are further

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<sup>6</sup> IPCC, “Summary for Policymakers,” In H.-O. Pörtner, D.C. Roberts, E.S. Poloczanska, K. Mintenbeck, M. Tignor, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem (eds.), *Climate Change 2022: Impacts, Adaptation, and Vulnerability*, Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (Cambridge: Cambridge University Press: 2022): 3–33, 10.1017/9781009325844.001; IEA, *Net Zero Roadmap: A Global Pathway to Keep the 1.5 °C Goal in Reach*, 2023 Update, IEA, Paris. <https://www.iea.org/reports/net-zero-roadmap-a-global-pathway-to-keep-the-15-0c-goal-in-reach>.

<sup>7</sup> IPCC, “Summary for Policymakers,” In H. Lee and J. Romero (eds.), *Climate Change 2023: Synthesis Report*, Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, IPCC, Geneva, Switzerland, 2023: 24. <https://doi.org/10.59117/20.500.11822/43922>.

<sup>8</sup> United Nations Environment Programme, *Emissions Gap Report 2024: No more hot air...please! With a massive gap between rhetoric and reality, countries draft new climate commitments*, UNEP, Nairobi, October 24, 2024: xvii. <https://www.unep.org/resources/emissions-gap-report-2024>.

<sup>9</sup> United Nations Environment Programme, *Emissions Gap Report 2023: Broken Record—Temperatures hit new highs, yet world fails to cut emissions (again)*, UNEP, Nairobi, November 2023, <https://doi.org/10.59117/20.500.11822/43922>; Climate Action Tracker, Canada: Policies & Action (August 2024), <https://climateactiontracker.org/countries/canada/policies-action/>.

<sup>10</sup> Kerrie Proulx, Bernadette Daelmans, Valentina Baltag, and Prerna Banati, “Climate Change Impacts on Child and Adolescent Health and Well-Being: A Narrative Review,” *Journal of Global Health*, Vol. 14, May 24, 2024, [10.7189/jogh.14.04061](https://doi.org/10.7189/jogh.14.04061).

<sup>11</sup> Samantha Ahdoot, Carl R. Baum, Mary Bono Cataletto, Patrick Hogan, Christina B. Wu, Aaron Bernstein, and Section on Minority Health, Equity and Inclusion, Garris Nia Heard, Brown Kimberly, Chomilo Nathan, Jones Nathaniel, Rodriguez Patricia, Walker Valencia, Onyema-Melton Ngozi. “Climate change and children’s health: building a healthy future for every child.” *Pediatrics* 153, no. 3 (2024): e2023065505. <https://doi.org/10.1542/peds.2023-065505>.

heightened for Indigenous children, children in racialized and low-income communities, and disabled children, which serves to exacerbate existing inequities in health outcomes.<sup>12</sup>

In addition to physical health impacts, climate change is negatively affecting the mental health of young people, whether or not they have personally experienced climate-related disasters.<sup>13</sup> Researchers found as well that young people's feelings of anxiety and distress about climate change were correlated with "perceived inadequate government response and associated feelings of betrayal."<sup>14</sup>

Studies show that youth who experience anxiety about the climate crisis want the education system to address climate change.<sup>15</sup> And they are not alone in calling for better climate change education. Given the reach of education systems and the role of education in shaping students' attitudes, values, career decisions, and life choices, researchers have identified solutions-oriented climate change education as important to accelerating mitigation and adaptation efforts.<sup>16</sup> More recently, in response to youth activists calling for an intersectional understanding of the climate crisis, researchers highlighted the importance of climate change education that also addresses climate justice.<sup>17</sup>

### Note on Methodology

Our research involved an extensive but non-exhaustive search of the websites of oil and gas companies and environmental education nonprofits. While the research was thorough, we anticipate that more evidence of oil and gas involvement in education will be found.

We conducted a discourse analysis of the educational resources we found on industry websites and the websites of environmental education nonprofits that receive industry funding. This analysis was informed by scholarly studies of the language and strategies used in oil and gas industry communications, and in particular studies of "petro-pedagogy," which focus on the messaging strategies favoured by the oil and gas industry in educational settings.<sup>18</sup> The research indicates that the use of these strategies in environmental education in Canada is widespread.

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<sup>12</sup> Rebekka Schnitter, et al., "Climate Change and Health Equity," In P. Berry & R. Schnitter, (eds.), *Health of Canadians in a Changing Climate: Advancing our Knowledge for Action* (Ottawa, ON: Government of Canada, 2022).

<https://changingclimate.ca/site/assets/uploads/sites/5/2021/11/9-HEALTH-EQUITY-CHAPTER-EN.pdf>.

<sup>13</sup> Ann Sanson and Marco Bellemo, "Children and youth in the climate crisis," *Bulletin JPsych Bulletin* 45, no. 4 (2021): 205-209, <https://doi.org/10.1192/bjb.2021.16>

<sup>14</sup> Elizabeth Marks, Caroline Hickman, Panu Pihkala, Susan Clayton, Eric R. Lewandowski, Elouise E. Mayall, Britt Wray, Catriona Mellor, and Lise van Susteren, "Climate anxiety in children and young people and their beliefs about government responses to climate change: a global survey." *Lancet Planet Health*, 12, no.5 (2021) e863-e873. DOI: [10.1016/S2542-5196\(21\)00278-3](https://doi.org/10.1016/S2542-5196(21)00278-3)

<sup>15</sup> Galway and Field, "Climate emotions and anxiety among young people in Canada."

<sup>16</sup> Seth Wynes and Kimberly A. Nicholas, "The climate mitigation gap: education and government recommendations miss the most effective individual actions," *Environmental Research Letters* 12, no. 7 (2017), 074024. DOI 10.1088/1748-9326/aa7541.

<sup>17</sup> Carrie Karsgaard and Lynette Shultz, "Youth movements and climate change education for justice." In *Oxford Research Encyclopedia of Education*, 2022. <https://doi.org/10.1016/j.joelclim.2023.100204> Karsgaard and Shultz. "Youth movements and climate change education for justice."

<sup>18</sup> Emily M. Eaton and Nick A. Day. 2019. "Petro-Pedagogy: Fossil Fuel Interests and the Obstruction of Climate Justice in Public Education." *Environmental Education Research* 26, no. 4: 457–73. <https://doi.org/10.1080/13504622.2019.1650164> Eaton and Day.

## Chapter 1

# Oil and Gas Are Polluting Climate Change Education

### Quickview

- A non-exhaustive web search found at least 39 oil and gas companies, 10 industry-related companies, and two industry associations involved in climate-related education across Canada.
- In the face of budget cuts, schools have become vulnerable to offers of material or financial support from corporations, including from the oil and gas industry.
- Through greenwashing and other practices, the industry has used its role in education to muddy public understanding of climate change and its causes, to position itself as part of the climate solution, and to delay the transition away from fossil fuels.
- Some of the strategies used by the oil and gas industry to extend its involvement in climate-related education include
  - directly providing education materials to teachers;
  - partnering with governments to provide resources; and
  - funding third-party providers of climate-related education as a means of more indirectly influencing public understanding of climate change.

### 1A. The Extent of Fossil Fuel Involvement in Environmental/Climate Change Education in Canada

There are at least 39 oil and gas companies, 10 industry-related companies, and two industry associations involved in funding Canadian climate-related education.<sup>19</sup> They include all six members of the Pathways Alliance: Cenovus Energy, Suncor Energy, Imperial Oil, Canadian Natural Resources, ConocoPhillips, and MEG Energy, as well as companies such as Enbridge, TC Energy, and FortisBC. The subject areas they fund include climate change education, as well as biodiversity, energy, and science, technology, engineering, and math (STEM). By funding education in these areas, fossil fuel companies ensure that they are well-placed to influence public opinion on climate change, climate solutions, and the impact of the fossil fuel industry.

Our findings strongly indicate that industry involvement in climate and environmental education is an established strategy. The industry's interest in the field of education is part of a long history of work to shape the public's understanding of climate change. Their focus on environmental and climate change education suggests a particular interest in youth, and in shaping how educators teach climate change and climate solutions. Industry investments in environmental education also serve to greenwash the industry's image in the public eye, thereby maintaining their social licence to operate.

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<sup>19</sup>A spreadsheet of the full list of companies and the organizations they fund can be found here: <https://www.forourkids.ca/pollutingeducation>

## 1B. The History of Fossil Fuel Industry Involvement in Education

In 2015, Farida Shaheed, the UN Special Rapporteur in the field of cultural rights, submitted a report to the UN General Assembly in which she called for a ban on all commercial marketing and advertising in schools, saying, “Schoolchildren offer a captive and credulous audience,” and that marketing and advertising programmes are “normalised and given legitimacy when embedded in the school context...”<sup>20</sup> Unfortunately, commercialization is common in most school districts across Canada, a shift that education scholars say has been enabled by government budget cuts. With less funding, schools and school boards turn to private entities—corporations, foundations, charities and non-government organizations—to provide educational activities and services. As Simon Enoch and Emily Eaton write, when schools are under-resourced, under-funded, and under pressure, they are “more and more susceptible to industry offers of sponsored teaching materials.”<sup>21</sup>

Since the 1920s, companies have looked to schools as a site for “a future market of loyal consumers.”<sup>22</sup> In the early period of commercial intervention in schools, oil and gas companies were prominent providers of branded education materials to schools in Canada. Some examples include classroom maps created by Imperial Oil, instructional films created by Imperial Oil and Shell, and booklets, such as one titled “The Story of Coal,” created by the Canadian Coal Association. Fossil fuel companies advertised their classroom materials in teacher magazines, promoting such benefits as decreased teacher prep time and the opportunity to provide the kinds of interactive learning experiences recommended by progressive educators. For example, the British American Oil Company advertised a free kit that elementary students could use to build cardboard models of every stage of oil production as an example of “modern educational methods, which stress the visual approach to education” to improve teaching grade school children. Oil and gas companies also began cultivating relationships with government education departments. In the early 1950s, for example, the Audio-Visual Aids Branch of the Alberta Department of Education included Shell’s films in its listings.<sup>23</sup>

In the 1970s, the oil and gas industry added a new strategy. In addition to directly providing branded educational materials themselves, they turned to third-party providers of education as a way of promoting industry perspectives, particularly in relation to environmental issues. The first such educational organization founded and funded by the oil and gas industry was the Society of Environment and Energy Development Studies Foundation, or SEEDS, established in 1976 by Calgary Power. Other Alberta energy companies and industry associations, including the Canadian Petroleum Association, the Independent Petroleum Association of Canada, and the

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<sup>20</sup> Shaheed, Farida, “UN Special Rapporteur Urges States to Ban all Commercial Advertising and Marketing in Schools.” *Derecho a la educación*, January 15, 2015. The full report can be accessed at: <http://www.ohchr.org/EN/newyork/Pages/HRreporttothe69thsessionGA.aspx>.

<sup>21</sup> Simon Enoch and Emily Eaton. *Crude Lessons: Fossil Fuel Industry Influence on Environmental Education in Saskatchewan*. Regina: Canadian Centre for Policy Alternatives, 2019: 9. <https://www.policyalternatives.ca/publications/reports/crude-lessons> For further analysis of the relationship between government funding cuts and corporate involvement in education in Alberta in particular, see Albert Hodgkins. “Manufacturing (il) literacy in Alberta’s classrooms: The case of an oil-dependent state.” *Journal for Critical Education Policy Studies (JCEPS)* 8, no. 1 (2010): 263-298.

<sup>22</sup> Catherine Gidney and R.D. Gidney, “Branding the classroom: Commercialism in Canadian schools, 1920–1960,” *Histoire sociale/Social history*, 41, no. 82 (2008): 350.

<sup>23</sup> Gidney and Gidney, “Branding the Classroom”: 355–6, 361–2, 364, 374.

Coal Association of Canada also provided support.<sup>24</sup> According to the organization's own account, its oil and gas industry founders were motivated by the recognition that there was "a need for curriculum materials for students on 'energy' issues, discussed within the context of societal, economic, and environmental concerns."<sup>25</sup>

At the same time as the industry was becoming more involved in education, oil and gas companies were becoming aware of a problem: the potential of their products to cause a global climate crisis. As early as 1954, scientists were informing industry leaders that burning fossil fuels affected atmospheric concentrations of carbon dioxide.<sup>26</sup> By 1959, nuclear scientist Edward Teller was warning the American Petroleum Institute about global warming risks from fossil fuels.<sup>27</sup> Exxon<sup>28</sup>, Shell<sup>29</sup>, and other companies employed their own scientific teams to further study the problem.<sup>30</sup> Internal company documents show that in 1977, Exxon scientists accurately predicted future warming of about 0.2°C per decade due to fossil fuel emissions.<sup>31</sup> By 1979, Exxon privately acknowledged that fossil fuel consumption would cause "dramatic environmental effects before the year 2050."<sup>32</sup> Instead of releasing their scientific studies, the oil and gas industry mounted a coordinated misinformation campaign to deny climate science and delay climate action. In the face of growing public concerns, and the establishment of the United Nations Intergovernmental Panel on Climate Change (UNIPCC) in 1988, Exxon helped create the Global Climate Coalition to question the scientific basis for concern about climate change.<sup>33</sup> The industry's coordinated campaign of climate denial, undertaken with full knowledge of the accuracy of the science, parallels the tobacco industry's campaign to deny the health harms of their products.<sup>34</sup>

The launch of the fossil fuel industry's misinformation campaign was accompanied by the rise of neoliberalism and government cutbacks, which paved the way for more extensive corporate involvement in education.<sup>35</sup> Corporations moved from advertising in schools on select products to

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<sup>24</sup> Enoch and Eaton, *Crude Lessons*: 7.

<sup>25</sup> "History," SEEDS Connections, 2014, <https://seedsconnections.org/history>.

<sup>26</sup> Oliver Milman, "'Smoking gun proof': fossil fuel industry knew of climate danger as early as 1954, documents show." *The Guardian*, January 30, 2024. [www.theguardian.com/us-news/2024/jan/30/fossil-fuel-industry-air-pollution-fund-research-caltech-climate-change-denial](https://www.theguardian.com/us-news/2024/jan/30/fossil-fuel-industry-air-pollution-fund-research-caltech-climate-change-denial).

<sup>27</sup> Shannon Hall, "Exxon Knew about Climate Change almost 40 years ago," *Scientific American* 26, no. 10 (2015). <https://www.scientificamerican.com/article/exxon-knew-about-climate-change-almost-40-years-ago/>.

<sup>28</sup> Geoffrey Supran, Stefan Rahmstorf, and Naomi Oreskes, "Assessing ExxonMobil's global warming projections." *Science* 379, no. 6628 (January 13, 2023), eabk0063, DOI: 10.1126/science.abk00

<sup>29</sup> Jessica Corbet, "'Incredibly Disturbing' Docs Reveal Oil Giant Shell Knew About Climate Impacts Even Earlier." *Common Dreams*, April 2, 2023. <https://www.commondreams.org/news/shell-fossil-fuels-climate-1970s>.

<sup>30</sup> Benjamin Franta, "What Big Oil Knew about Climate Change, in Its Own Words," *The Conversation*, October 28, 2021. <https://theconversation.com/what-big-oil-knew-about-climate-change-in-its-own-words-170642>; "On its 100th birthday in 1959, Edward Teller warned the oil industry about global warming." *The Guardian*, January 1, 2018. <https://www.theguardian.com/environment/climate-consensus-97-per-cent/2018/jan/01/on-its-hundredth-birthday-in-1959-edward-teller-warned-the-oil-industry-about-global-warming>.

<sup>31</sup> Oliver Milman, "Revealed: Exxon Made 'Breathtakingly' Accurate Climate Predictions in 1970s and 80s." *The Guardian*, January 12, 2023, <https://www.theguardian.com/business/2023/jan/12/exxon-climate-change-global-warming-research>.

<sup>32</sup> Jeff Brady, "Exxon Climate Predictions Were Accurate Decades Ago. Still It Sowed Doubt," NPR, January 12, 2023, <https://www.npr.org/2023/01/12/1148376084/exxon-climate-predictions-were-accurate-decades-ago-still-it-sowed-doubt>.

<sup>33</sup> Hall, "Exxon Knew about Climate Change."

<sup>34</sup> Allan M. Brandt, "Inventing conflicts of interest: a history of tobacco industry tactics," *American Journal of Public Health* 102, no. 1 (2012): 63-71, <https://ajph.aphapublications.org/doi/full/10.2105/AJPH.2011.300292>.

<sup>35</sup> Canadian Teachers' Federation, Canadian Centre for Policy Alternatives, Fédération des syndicats de l'enseignement, *Commercialism in Canadian Schools: Who's Calling the Shots?* Canadian Centre for Policy Alternatives, 2006: 3,

providing schools with fully developed curriculum materials, classroom equipment, and even teacher training.<sup>36</sup> The oil and gas industry expanded its involvement—and their involvement assumed a new significance. With the support of Shell Canada, SEEDS launched a Summer Institute for teachers across Canada as well as an Energy Literacy Series program for Grades 6–12 that promised to examine “energy issues from different perspectives in a non-judgmental, bias-balanced way.”<sup>37</sup>

Simon Enoch and Emily Eaton have shown that as public concerns about climate change grew, the oil and gas industry came to see working with third-party education providers as a winning strategy. By operating through third-party providers, the oil and gas industry could ensure that industry-friendly perspectives were presented in the classroom while avoiding the appearance of blatant propaganda. A 1989 advertising feature for SEEDS explained it this way:

The problem the energy industry in general has with going directly into education is that any material it produces is immediately suspect. It may, at worst, be branded propaganda. At best, teachers will look at it with suspicion as they wonder what the catch is. One solution is to fund someone else, someone recognized as a reliable authority in the field of education. It was out of this concept that the SEEDS Foundation was born.<sup>38</sup>

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[https://policyalternatives.ca/sites/default/files/uploads/publications/National\\_Office\\_Pubs/2006/Commercialism\\_in\\_Canadian\\_Schools.pdf](https://policyalternatives.ca/sites/default/files/uploads/publications/National_Office_Pubs/2006/Commercialism_in_Canadian_Schools.pdf); Erika Shaker, “The Rise of the Corporate Cashroom: Corporatization and the Neoliberal Canadian School.” In Jamie Brownlee, Chris Hurl, and Kevin Walby, (eds.), *Corporatizing Canada: Making Business Out of Public Service* (Toronto, ON, Between the Lines: 2018): 43-57. See also Alex Molnar and Faith Boninger, “The Commercial Transformation of America’s Schools,” *Phi Delta Kappan* 102, no. 2 (September 22, 2020): 8–13, <https://doi.org/10.1177/0031721720963223>.

<sup>36</sup> Catherine Gidney, *Captive Audience: How Corporations Invaded Our Schools* (Toronto, ON, Between the Lines: 2019): 26–28.

<sup>37</sup> “Energy Literacy Series,” SEEDS Connections, 2019, <https://seedsconnections.org/energy-literacy-series>.

<sup>38</sup> Enoch and Eaton, *Crude Lessons*: 9–10.

## Fossil Fuel Influence In Education

**1920s** Imperial Oil produces branded maps for classrooms.

Fossil fuel companies begin to look to schools as a site for "a future market of loyal consumers."

**1950s & 1960s**

Oil & gas companies cultivate relationships with government education departments.

The British American Oil Company makes a free kit for elementary students to build cardboard models of the stages of oil production

Audio-Visual Aids Branch of Alberta Department of Education included Shell's films in its listings.

Companies advertise their materials in teacher magazines, promoting decreased prep time and the interactive learning experiences recommended by progressive educators.

In **1977**, Exxon scientists accurately predicted future warming of about 0.2°C per decade due to fossil fuel emissions.

With Shell Canada, SEEDS launches a Summer Institute for teachers and an Energy Literacy Series for grades 6-12.

**1980s**

In response to a growing public awareness of climate change and possibility of government action to stop it, the industry sows doubt about climate science and secures public support for the continued consumption of oil and gas.

**1985** British Petroleum (BP), Cenovus, Suncor, and ConocoPhillips Canada establish Inside Education with a mission to provide environmental education with an industry-friendly focus on "energy literacy."

Industry education strategies include: sponsoring school activities, providing branded materials to schools; partnering with government to develop curricula; and, indirectly funding and supporting third-party education providers.

**Past 20 Years**

## Historic Trends

As early as **1954**, scientists were informing industry leaders that the burning of fossil fuels was affecting atmospheric concentrations of carbon dioxide.

By **1959**, nuclear scientist Edward Teller was warning the American Petroleum Institute about global warming risks from fossil fuels.

**1976** Society of Environment and Energy Development Studies Foundation (SEEDS) established by Calgary Power and other Alberta energy affiliates. SEEDS is still running today.

The industry turns to third-party education providers as a way to promote industry perspectives on environmental issues.

**1970s**

By **1979**, Exxon privately acknowledged that fossil fuel consumption would cause "dramatic environmental effects before the year 2050".

The rise of neoliberalism and government funding cuts paved the way for corporate involvement in education.

In **1988**, the United Nations Intergovernmental Panel on Climate Change was established.

In **1989**, Exxon helped create the Global Climate Coalition to question the scientific basis for concern about climate change.

The Global Climate Coalition identified education as a field they wanted to influence.

**1990s**

Government funding cuts continue. Corporations provide schools with fully developed curriculum materials, classroom equipment, and teacher training.

In **2015**, the UN Special Rapporteur in field of cultural rights calls for a ban on all commercial marketing & advertising in schools

## 1C. Fossil Fuel Industry Strategies in Education

Over the last twenty years, with the increasing frequency of climate-related disasters and the rise of youth activism on climate change, the oil and gas industry has shifted from sowing climate doubt to delaying climate action. Industry stakeholders have developed relationships with an expanding number of third-party education organizations and have added this approach to their repertoire of strategies for engaging in education, with a focus on three main modes of influence:

- sponsoring school activities and providing branded educational materials to schools,
- establishing partnerships with government to develop curricula and resources, and
- indirectly funding and supporting third-party environmental education providers.

### I. Direct Involvement

By directly funding school events, oil and gas corporations can present themselves as supporters of education and build brand loyalty. Through branded educational materials, the oil and gas industry benefits from the respect and influence that schools enjoy and secures legitimacy for the content of the materials. Their presence and power in schools work to normalize fossil fuels as essential and secure support for their continued consumption.<sup>39</sup>

#### i. Sponsorship

Sponsorship of school events and activities is a common strategy used by the fossil fuel industry to directly engage with school communities, particularly in regions with extensive oil and gas operations. For example, Enoch and Eaton point out that in Saskatchewan, SaskEnergy, a Crown corporation that delivers fossil gas, is a leading sponsor of public-school science fairs.<sup>40</sup> We found similar examples of oil and gas sponsorship activities in other provinces. In Alberta, for instance, Chevron sponsors expenses-paid class field trips to the Chevron Open Minds Zoo School at the Calgary Zoo for “an educational adventure...students will never forget.”<sup>41</sup> In British Columbia, where Chevron was the major backer of the Pacific Trails LNG pipeline before it was bought by Enbridge, Chevron ran a Fuel Your School program. The program, which launched in 2013, featured posters at Chevron gas stations informing community members that for every 30 litres of gasoline they purchased, one dollar would be donated to provincial school boards.<sup>42</sup> And in

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<sup>39</sup> Eaton and Day, “*Petro-pedagogy*”: 463. For an account of how the oil and gas industry presents itself as essential to modern life in the educational materials it funds, see: Molly Taft and Amy Westervelt, “How the Oil and Gas Industry Smuggles Corporate Propaganda into Schools.” *Drilled*, 2020, <https://drilled.media/news/discovery-education>.

<sup>40</sup> Enoch and Eaton, *Crude Lessons*: 8.

<sup>41</sup> “Chevron Open Minds,” Wilder Institute/Calgary Zoo, n.d., <https://www.calgaryzoo.com/education/chevron-open-minds/>.

<sup>42</sup> Chevron, “Chevron’s Fuel Your School Program,” <https://www.chevron.com/-/media/chevron/PDF-Reports/Corporate-Responsibility/education-fuel-your-school.pdf>; Erin Flegg, “North Vancouver Teachers Weren’t Informed and Aren’t Impressed by New

Sarnia, Ontario, where Imperial Oil has one of its largest refinery operations, the company partnered with Forests Canada to host information sessions at a local Sarnia high school, Northern Collegiate School, about the importance of tree planting in their communities, one of its many community outreach activities.<sup>43</sup> While such sponsorships may seem benign, they give oil and gas companies a chance to build good will in the community, and that, in turn, tends to normalize their operations.



Oil and gas companies also sponsor job and career fairs for high school students. According to Energy Works, the oil and gas industry is currently facing workforce challenges due to “ageing workers and difficulties reattracting experienced workers.”<sup>44</sup> To address this, companies are now proactively reaching out to high school students. The nonprofit, Careers in Energy, which is sponsored by eight oil and gas companies—Suncor/Syncrude, Keyera, Canadian Natural, Imperial Oil, Cenovus, FortisAlberta, TC Energy, EPCOR—offers career information sessions for junior high and high schools students across Canada.<sup>45</sup> Careers in Energy is a division of another nonprofit, Energy Safety Canada, which was established in 2017 as a result of a merger of Enform Canada and the Oil Sands Safety Association and is directed primarily by representatives of the oil and gas industry.<sup>46</sup> In Alberta, Petrochem Canada sponsors a “Tour of High School Students to the Oil Sands Expo” that they promote to industry exhibitors as “a unique opportunity to educate and inspire the next generation of industry leaders.”<sup>47</sup> Also in Alberta, the nonprofit organization, Careers, the Next Generation, works closely with oil and gas corporations, including Syncrude, Canadian Natural, Cenovus, EPCOR, Keyera, TC Energy, Imperial Oil and FortisAlberta, to bring together “industry, schools, government, and communities to guide youth into successful career

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Partnership with Chevron,” *The Narwhal*, November 5, 2014, <https://thenarwhal.ca/vancouver-teachers-werent-informed-arent-impressed-new-partnership-chevron/>.

<sup>43</sup> Imperial Oil Limited, *2023 Corporate Sustainability Report*, Imperial Oil, 2023: 50, [https://www.responsibilityreports.com/HostedData/ResponsibilityReports/PDF/TSX\\_IMO\\_2023.pdf](https://www.responsibilityreports.com/HostedData/ResponsibilityReports/PDF/TSX_IMO_2023.pdf).

<sup>44</sup> “About,” Energyworkscareer.com, 2024, <https://www.energyworkscareer.com/about/>.

<sup>45</sup> “Careers in Energy, a Division of Energy Safety Canada,” Careers in Energy, June 3, 2024, <https://careersinenergy.ca/about-cie/>; “Energy Safety Canada—ESC,” www.energysafetycanada.com, n.d., <https://www.energysafetycanada.com/About/Leadership-Governance>.

<sup>46</sup> “Energy Safety Canada—ESC,” www.energysafetycanada.com, n.d., <https://www.energysafetycanada.com/About/Leadership-Governance>.

<sup>47</sup> “High School Student Tour—Oil Sands Expo,” Oil Sands Expo—Your Industry. Your Expo., May 30, 2024, <https://oilsandsexpo.com/high-school-student-tour/>.

paths,” primarily in the oil and gas sector.<sup>48</sup> Careers in Energy holds an annual Calgary Career Fair that is open to teachers, parents, students, and family members. They also provide a teachers’ bulletin so educators can stay up to date on opportunities.<sup>49</sup>

## ii. Educational Resources and Learning Programs

Oil and gas companies also create educational resources for students and professional development programs for teachers, sometimes using their websites to promote the programs.

For example, since 2016, energy company Énergir has been a sponsor of Carbone Scol’ÈRE, a Quebec-based program that puts the onus for environmental change on the individual by helping “young people make a tangible contribution to reducing greenhouse gases.”<sup>50</sup> Through the program, children and families can commit to reducing their carbon footprint and then sell their reductions to other participants as carbon credits.



FortisBC’s Energy Champions program is delivered by BC Lions. Using “heroes” to deliver their message is an effective way for companies to normalize and elevate their products (photo Nanaimo News Bulletin).

FortisBC is another example. In 2017, they developed a curriculum for elementary and secondary schools in British Columbia called Energy Leaders. The program had close to 30 learning modules with extensive teacher resources including lesson plans, slides, and student worksheets, available for free through FortisBC’s website.<sup>51</sup> The Energy Leaders program was taken down in 2022 following a public campaign led by CAPE doctors against oil and gas company involvement in education, but not before parents and teachers had downloaded more than 35,500 lessons and activities.<sup>52</sup>

<sup>48</sup> Partners, “Partners—Careers, the next Generation,” Careers, the Next Generation, December 16, 2021, <https://www.careersnextgen.ca/about-us/partners/>.

<sup>49</sup> Calgary Career Fair, “Calgary Career Fair,” Careers, the Next Generation, October 21, 2024, <https://www.careersnextgen.ca/events/calgary-career-fair-4/>.

<sup>50</sup> “Sustainable Development Community,” Énergir, November 20, 2023, <https://shorturl.at/UDMnM>.

<sup>51</sup> “FortisBC Adapts Its BC-Based School Program to Support Students Learning from Home,” *Education News Canada*, May 7, 2020, <https://educationnewscanada.com/article/education/level/k12/3/832660/fortisbc-adapts-its-bc-based-school-program-to-support-students-learning-from-home-.html>.

<sup>52</sup> Stefan Labbé, “Teachers, Doctors Call for Ban on ‘Fossil Fuel Propaganda’ in B.C. Schools,” *Vancouver Is Awesome*, March 2, 2022, [www.vancouverisawesome.com/highlights/teachers-doctors-call-for-ban-on-fossil-fuel-propaganda-in-bc-schools-5119332](http://www.vancouverisawesome.com/highlights/teachers-doctors-call-for-ban-on-fossil-fuel-propaganda-in-bc-schools-5119332).

Having been driven to close one school program, FortisBC simply moved on and is now supporting another environmental education program called Live It Earth, which can also be accessed through the company's website.<sup>53</sup> (However, Live It Earth's website does not reference FortisBC's support.)

Some oil and gas companies deliver presentations in classrooms. FortisBC's Energy Champions program for K–7 is hosted by BC Lions football players under the FortisBC brand. The stated goal of the program is to “share information with students about saving energy and how we're working toward achieving a lower-carbon energy future.”<sup>54</sup>

Other examples of oil and gas representatives delivering presentations to students include the “Energy Education Mobile,” an educational bus tour organized by ATCO, for which ATCO representatives delivered presentations on energy to Grade 4 students across Alberta,<sup>55</sup> and an ongoing offer from Enbridge to have representatives come to classrooms to speak about “pipelines and the role they play in meeting our energy needs.” Enbridge has a toll-free line to request this service.<sup>56</sup>

Oil and gas companies also connect with educators through teacher and student conferences. At the Central Alberta Teachers' Convention in 2023, representatives from the Pathways Alliance presented on “how Canadian Natural and industry are collaborating towards net zero through the Pathways Alliance and what it means to Canada.”<sup>57</sup> The organization Ten Peaks, which receives industry funding, runs a conference for grade 7–12 students and teachers that often features speakers from oil and gas companies.<sup>58</sup>

*“The more knowledge and understanding young people have about the energy industry, the environment and climate change, the more they can play an active role in Canada's energy future.”*

*—Ten Peaks (website)*

These are just a few examples of the reach of the fossil fuel industry into school communities and educational settings. By directly sponsoring educational activities and resources, the industry builds community goodwill, promotes and validates continued fossil fuel consumption, and

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<sup>53</sup> “Learning Resources for Students,” FortisBC, 2022, <https://www.fortisbc.com/in-your-community/learning-resources-for-students>; “Live It Earth,” Live It Earth, 2024, <https://liveit.earth/>.

<sup>54</sup> “FortisBC Energy Champions,” BC Lions, August 26, 2024, <https://www.bclions.com/fortisbc-energy-champions/>.

<sup>55</sup> Shannon Greer, “Students Think Outside the Classroom When It Comes to Energy Education,” *Global News*, April 15, 2015, <https://globalnews.ca/news/1941364/students-think-outside-the-classroom-when-it-comes-to-energy-education/>.

<sup>56</sup> “For Schools,” Enbridge.com, 2024, <https://www.enbridge.com/projects-and-infrastructure/public-awareness/for-schools>.

<sup>57</sup> Central Alberta Teachers' Convention Association Schedule, “Pathways Alliance-Pathway to Net Zero Emissions or Oil and Gas in a Net Zero World—Reducing Emissions through Technology and Collaboration,” February 24, 2023, <https://catca2023.sched.com/event/1Ge31>.

<sup>58</sup> “Register for the 10PIX Innovation Xchange,” Ten Peaks, 2019, Accessed January 5, 2025, [www.10peaks.ca/student-registration2024](http://www.10peaks.ca/student-registration2024); “Our Big Ideas Need Your Support,” Ten Peaks, Ten Peaks Innovation conference, 2019, Accessed January 5, 2025, [www.10peaks.ca/sponsors](http://www.10peaks.ca/sponsors).

weakens criticism of the industry. Note that Imperial Oil hosted its high school tree-building workshop in Sarnia, Ontario, a community that has been repeatedly harmed by high levels of pollution from the nearby Imperial Oil refinery.<sup>59</sup> And, FortisBC is promoting climate and environmental education while facing public opposition to its plans for expanding fossil gas infrastructure and climate-damaging gas consumption.<sup>60</sup>

## II. Government Partnerships

In some oil-and-gas-producing provinces, fossil fuel corporations have partnered with governments to develop curricula and educational resources for public schools. In 2014, the Alberta government enlisted Suncor Energy and Syncrude (then separate entities) to partner with the government on the creation of the curriculum for Kindergarten to Grade 3, and Cenovus to partner on developing the curriculum for Grades 4–12.<sup>61</sup> More recently, the Alberta government published a new 2024 curriculum framework that appears to have been developed with oil and gas industry involvement. The framework directs teachers to discuss “Alberta’s natural resources, including oil sands, oil, natural gas, minerals, agriculture, and forests, in building and sustaining Alberta’s economy, creating jobs, ensuring prosperity, and enabling a high quality of life,” and it includes as an expectation that students should “know the global significance of Alberta’s vast oil reserves and Alberta’s reputation as the most ethical producer of oil in the world.”<sup>62</sup> A report by the Investigative Journalism Foundation, published in *The Tyee*, found that the Safety in Schools Foundation, (SiS) a nonprofit funded by TC Energy and Canadian Natural, had been lobbying to include “oil and gas studies” in Alberta’s curriculum. Alberta Energy Minister Brian Jean is featured on SiS’s website “congratulating the organization on its oil and gas education initiatives.”<sup>63</sup>

Meanwhile, in Saskatchewan, the provincial government recently announced that it has partnered with Teine Energy to develop a new course on oil and gas which will include 50 hours of online theory and 50 hours of work placement. This follows years of inviting industry representatives to attend meetings where the curriculum for several subjects was discussed and refined before its formal adoption.<sup>64</sup>

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<sup>59</sup> Elaine MacDonald and Sarah Rang, “Exposing Canada’s Chemical Valley: An investigation of cumulative air pollution emissions in the Sarnia, Ontario Area,” *Ecojustice*, October 2007, <https://ecojustice.ca/wp-content/uploads/2015/09/2007-Exposing-Canadas-Chemical-Valley.pdf>.

<sup>60</sup> Derrick Penner, “Metro Vancouver Called on to Oppose Fortis B.C. LNG Expansion,” *Vancouver Sun*, July 28, 2022, <https://vancouversun.com/news/local-news/metro-vancouver-called-on-to-oppose-fortis-b-c-lng-expansion>.

<sup>61</sup> Carol Linnitt, “Alberta Partners with Major Oilsands Companies to Develop Kindergarten to Grade Three Curriculum,” *The Narwhal*, March 12, 2014, <https://thenarwhal.ca/alberta-partners-major-oilsands-companies-develop-kindergarten-grade-3-curriculum/>.

<sup>62</sup> Government of Alberta: Alberta Education, *The Guiding Framework for the Design and Development of Kindergarten to Grade 12 Curriculum*, April 2024, <https://open.alberta.ca/dataset/76eb4fac-62e3-408e-bcd8-f367a8a698fd/resource/5ad5e64c-d4a6-4ac4-a821-84704237c893/download/educ-guiding-framework-design-development-k-12-curriculum-2024.pdf>.

<sup>63</sup> Angela Amato and Carly Penrose, “What Alberta Wants Children Taught about Fossil Fuels,” *The Tyee*, November 12, 2024, <https://thetyee.ca/News/2024/11/12/What-Alberta-Wants-Children-Taught-Fossil-Fuels/>.

<sup>64</sup> Laura Sciarpelletti, “Sask. Gov’t Announces New Oil and Gas Courses for High School Students Interested in the Industry,” *CBC*, June 5, 2024, <https://www.cbc.ca/news/canada/saskatchewan/sask-gov-t-announces-new-oil-and-gas-courses-for-high-school-students-interested-in-the-industry-1.7226055>.

Government-industry partnerships also take place at the municipal level. For example, in Calgary, the Calgary Board of Education and the Calgary Catholic School District partner with Chevron on its Campus Calgary/Chevron Open Minds program. The program includes professional learning for teachers, courses for students, and a student conference.<sup>65</sup>

### III. Indirect Involvement

The industry's most common means of influencing education is by funding third-party education nonprofits. These organizations need funding to pay staff, create resources, and run programs. In the absence of other sources of funding, they may rely on large donations from the oil and gas sector to continue operations. As well, having an education system that is open to commercialization has normalized corporate involvement. While it is certainly the case that many of the educators employed by industry-funded organizations make valuable contributions to environmental and climate change education, the evidence suggests that industry involvement influences the choice of topics covered, and what gets omitted.

Third-party organizations can be divided into three categories: a.) organizations founded and funded by the fossil fuel industry; b.) industry-funded organizations that also include industry representatives on their boards; and c.) organizations to which the industry contributes some financial support.

#### i. Nonprofit Organizations Founded and Funded by Industry

Nonprofit environmental education organizations founded and funded by industry exist to serve industry interests. In broad terms, such organizations typically convey positive messages about fossil fuel use while limiting education on environmental and climate issues. With funding from the oil and gas industry, such organizations are generally able to produce educational materials, run professional programs, and sponsor events free of charge for teachers and students. Moreover, they can do these things on a much bigger scale than other environmental education nonprofits, giving them an outsize influence. The two most prominent examples are SEEDS Connections and Inside Education.

**SEEDS Connections:** Founded as SEEDS by Calgary Power in 1976 with support from other oil and gas companies, this organization currently receives support from ConocoPhillips, Cenovus, Imperial Oil, Alliance Pipeline, ATCO, and Rife Resources, as well as other companies with investments in oil and gas extraction, such as RBC and TD Bank.<sup>66</sup> With their extensive funding, SEEDS has enjoyed considerable reach. As early as 1989, SEEDS announced that its energy literacy programs had reached over 675,000 students across Canada. These numbers continued to grow. By 1997, over 1.5 million students had used the program, and by 2006, SEEDS was offering its programs to “over 8,000 Canadian elementary, middle, junior high, and senior high

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<sup>65</sup> Jenn Meredith, Natasha McKay, Marta Albertin, *Campus Calgary/Chevron Open Minds 2023-24 Annual Report*, <https://cbe.ab.ca/ccom/Documents/CCOM-overview-annualreport.pdf>.

<sup>66</sup> “Supporters and Partners,” SEEDS Connections, 2019, <https://seedsconnections.org/supporters-and-partners>.

schools.”<sup>67</sup> In 2014, SEEDS amalgamated, changing its name to SEEDS Connections,<sup>68</sup> and expanded its topics to include climate change, conservation, and water.<sup>69</sup>

**Inside Education:** Founded as Friends of Environmental Education Society of Alberta, with funding from BP, Cenovus, ConocoPhillips, and Suncor, the organization changed its name to Inside Education in 2004.<sup>70</sup> They currently receive funding from BP, Canadian Natural, Cenovus, Enbridge, Pembina, Strathcona Resources, Suncor, Syncrude, Alliance Pipeline, ConocoPhillips and TC Energy.<sup>71</sup> As of 2024, Inside Education’s Board of Directors includes representatives from Cenovus, Enbridge, and ConocoPhillips.<sup>72</sup>

Enoch and Eaton describe Inside Education as “one of Canada’s most prolific energy literacy education organizations.” With substantial industry backing, they have the staff and resources to reach large numbers of teachers and students across Canada with programming that covers energy, climate change, and conservation.<sup>73</sup> According to their Impact Report, in 2023 alone, Inside Education reached 24,961 students, hosted 417 teachers at their professional development programs, and had 1,089 teachers and students attend youth summits and innovation days.<sup>74</sup> These numbers are down from 2019 when they reached 32,518 students across Canada.

One of Inside Education’s initiatives, a “climate and energy education” summit called Generate, offers a clear example of their reach and resources. This free, four-day summit for high school students is sponsored by some of the largest oil and gas companies in Canada, including Cenovus, Canadian Natural, and Suncor. Generate includes meals, accommodation, and a travel subsidy, and promises to help students

- gain a better understanding of Alberta's energy and climate story from experts, innovators, and young leaders;
- participate in immersive tours, speaker sessions, and hands-on workshops;
- expand networks and create lasting memories with like-minded students and teachers; and



<sup>67</sup> Enoch and Eaton, *Crude Lessons*: 7.

<sup>68</sup> “History,” SEEDS Connections, 2014, <https://seedsconnections.org/history>.

<sup>69</sup> “Search,” SEEDS Connections, 2019, <https://seedsconnections.org/search/node/climate>; “Habitat in the Balance,” SEEDS Connections, 2019, <https://seedsconnections.org/habitat-balance-0>; “Wading in for Water Program,” SEEDS Connections, 2019, <https://seedsconnections.org/wading-water-program>.

<sup>70</sup> Enoch and Eaton, *Crude Lessons*: 7.

<sup>71</sup> “Partners,” Inside Education, 2024, <https://www.insideeducation.ca/partners/>.

<sup>72</sup> “Our Team,” Inside Education, 2016, <https://www.insideeducation.ca/about-us/team/>.

<sup>73</sup> “Learning Resources,” Inside Education, 2024, <https://www.insideeducation.ca/learning-resources/>.

<sup>74</sup> Inside Education, *Impact Report 2023*, [https://www.insideeducation.ca/uploads/source/reports/2023/2023\\_Impact\\_Report.pdf](https://www.insideeducation.ca/uploads/source/reports/2023/2023_Impact_Report.pdf).

- become empowered and supported to make a meaningful difference in [their] school and community with an environmental leadership project.<sup>75</sup>

## ii. Industry-Funded Nonprofits with Industry-Connected Boards

Some environmental education nonprofits receive industry funding and have representatives with close ties to industry on their boards. As governing members, these industry representatives can play a role in defining an organization's mission, strategy, and goals, while also overseeing programming. Examples include:

- **Let's Talk Science.** Founded by a scientist, it grew from a small nonprofit into an organization with over 100 full-time staff and connections with over 55 universities, colleges, and research institutes.<sup>76</sup> In addition to receiving funding from numerous oil and gas companies, including Hibernia, Cenovus, Chevron, Shell, Enbridge, Fluor, Enerplus, AltaGas, and other corporate donors, Let's Talk Science has a board member who worked for Enerplus and who now works for U.S.-based oil and gas company Chord Energy.<sup>77</sup>
- **Ten Peaks.** Established by an individual who worked for the oil and gas industry, it is now funded by multiple fossil fuel companies, including Cenovus, Tourmaline, FortisAlberta, Pembina and the Pathways Alliance, and has representatives with close ties to the oil and gas industry on its board.<sup>78</sup>
- **Learning for a Sustainable Future.** Learning for a Sustainable Future previously received funding from Suncor and included a representative from Suncor on its board. However, in May 2022 they adopted an ethical funding policy that disallows funding from the coal, oil and gas industries, among others, and bars board membership to representatives of these industries.<sup>79</sup>

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<sup>75</sup> Generate 2025 email via Inside Education, December 2, 2024. More information on Generate can also be found on the Inside Education webpage, <https://www.insideeducation.ca/youth-summits/provincial/generate/>.

<sup>76</sup> "Celebrating 30 Years of Let's Talk Science: President and Founder, Dr. Bonnie Schmidt, on Humble Origins and Hopeful Tomorrows," Let's Talk Science, 2023, <https://letstalkscience.ca/news-media/celebrating-30-years-lets-talk-science-president-and-founder-dr-bonnie-schmidt-on-humble>.

<sup>77</sup> "Our Donors," Let's Talk Science, 2024, <https://letstalkscience.ca/our-supporters/donors>. Note: Enerplus is not included on their donor page but is acknowledged as a funder of a specific Diversity, Equity and Inclusion program. See: "X.com," X (formerly Twitter), 2024, <https://x.com/LetsTalkScience/status/1502706023869685767> and [https://www.linkedin.com/posts/let%27s-talk-science\\_supportersaturday-activity-7035277300287897600-EQOp/?trk=public\\_profile\\_like\\_view](https://www.linkedin.com/posts/let%27s-talk-science_supportersaturday-activity-7035277300287897600-EQOp/?trk=public_profile_like_view). The profile of the board member in question can be found here: <https://www.linkedin.com/in/hilary-foulkes-9005599/?originalSubdomain=ca>. Enerplus recently merged with Chord Energy: <https://ir.chordenergy.com/2024-05-31-Chord-Energy-and-Enerplus-Complete-Combination,-Creating-Premier-Williston-Focused-E-P-Company>.

<sup>78</sup> Ten Peaks' executive director works for Fusion Production Systems Inc., an oil and gas manufacturing company, and a board member works for geoLOGIC systems, an "energy intelligence firm." "The Team," Ten Peaks Innovation, 2019, <https://www.10peaks.ca/the-team>; "Student Conference," Ten Peaks Innovation, 2019, <https://www.10peaks.ca/10pix-speakers-2024>; "Sponsors," Ten Peaks Innovation, 2019, <https://www.10peaks.ca/sponsors>.

<sup>79</sup> *Learning for a Sustainable Future, 2021 Annual Report*, [https://lsf-1st.ca/wp-content/uploads/2023/01/LSF-Annual-Report-2021\\_updated.pdf](https://lsf-1st.ca/wp-content/uploads/2023/01/LSF-Annual-Report-2021_updated.pdf): 13. The former Suncor board member is still on the board, but retired from Suncor after 2021. View their ethical funding statement at <https://lsf-1st.ca/ethical-funding-statement/>

## 1D. Environmental Education Nonprofits that Receive Funding from the Oil and Gas Industry

Numerous organizations receive industry funding but do not have oil and gas representatives on their boards. While that can be an improvement over other governing structures, many of those boards include representatives from companies that are stakeholders in oil and gas extraction, such as banks that finance the industry. Examples of organisations that receive industry funding, but do not have direct industry representation on their boards include

- **Earth Rangers**, which receives funding from TC Energy, Teck, Enbridge, SaskEnergy, ConocoPhillips, Énergir, Fortis Inc., Methanex, Plains Midstream Energy Company, Pembina, Gibson Energy, Ontario Power Generation and Atura Power;<sup>80</sup>
- **Ducks Unlimited**, which receives funding from Irving Oil;<sup>81</sup>
- **Live It Earth**, which receives funding from FortisBC;<sup>82</sup> and
- **Green Learning**, which receives funding from Enbridge and Suncor.<sup>83</sup>

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<sup>80</sup> “Our Supporters,” Earth Rangers, September 16, 2022, <https://www.earthrangers.com/EN/CA/our-supporters/>.

<sup>81</sup> Ducks Unlimited Canada, *Unlimited Together: Celebrating Conservation Partnerships, Progress, and Potential. 2023 Annual Report*, <https://www.ducks.ca/assets/2023/12/2023-Annual-Report-EN.pdf>.

<sup>82</sup> “Learning Resources for Students,” FortisBC, 2022, [www.fortisbc.com/in-your-community/learning-resources-for-students](http://www.fortisbc.com/in-your-community/learning-resources-for-students)

<sup>83</sup> Green Learning, *Annual Report 2022*. <https://greenlearning.ca/assets/uploads/pdf/GL-Annual-Report-2022.pdf>.

## 1E. The Predicament of Environment and Climate-Related Education Nonprofits

Environmental education non-profits exist within a philanthropic funding system that is largely dependent on corporate donations. Nonprofits need to pay staff, create resources, and run programs, and all of that requires funding. In the absence of other sources of funding, they may rely on large donations from the oil and gas sector to continue operations. Further, environmental education nonprofits work alongside an education system that is open to commercialization and corporate influence, thereby normalizing corporate involvement in education.

Because funding decisions are generally made from the top, employees may be unaware of industry presence or impact. Even if they are aware, without protocols or mechanisms in place to enable authentic conversations about oil and gas industry involvement in climate education, employees may be left without recourse to raise this as a problem.

Many of the educators employed by industry-funded organizations make valuable contributions to environmental and climate change education. Educators in all settings do their best to deliver quality education to students and they care about their students' welfare. However, there is evidence to suggest that industry funding influences the topics that educators cover and the information that they omit. Our research revealed that none of the organizations that receive funding from the oil and gas industry are also providing education on the role of the industry in driving climate change. Moreover, we found only two examples of an industry-funded organization that provides education on the need to transition away from fossil fuels.<sup>84</sup> In this respect, industry involvement is impacting the integrity and the quality of the education that teachers provide their students.

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<sup>84</sup> Relay Education, which receives funding from Atura Power and SaskPower, focuses on education about renewable energy to address climate change. As they state on their website: "In order to fight the ongoing impacts of climate change, stop air pollution, and help stabilize the economy—we need to support the transition to 100% renewables." "Why Energy—Relay Education," Relay Education, May 27, 2024, <https://relayeducation.com/why-energy/>. Green Learning, which receives funding from Suncor and Enmax, addresses the urgency of reducing emissions to avoid the worst impacts of climate change in its Climate Change Backgrounder. The backgrounder includes the statement that "Because most GHG emissions come from burning fossil fuels for energy, to pollute less we need to change the ways we generate and produce energy." Climate Change Backgrounder, Green Learning, 2022. [https://greenlearning.ca/assets/uploads/pdf/eCards-Research-Topics-Climate-Change\\_2022-11-21-201339\\_bciy.pdf](https://greenlearning.ca/assets/uploads/pdf/eCards-Research-Topics-Climate-Change_2022-11-21-201339_bciy.pdf)

## FOSSIL FUEL INFLUENCE IN THIRD-PARTY EDUCATION ORGANIZATIONS



- Industry-Funded Nonprofits with Industry-Connected Boards
- Non-profit Organizations Founded and Funded by Industry
- Environmental education nonprofits that receive funding from the oil and gas industry

## Chapter 2

# Petro-Pedagogy: How Industry Has Influenced Climate Change Education

### Quickview

- Emily Eaton and Nick Day coined the term “petro-pedagogy” to describe “teaching practices and resources [that] work to centre, legitimize, and entrench a set of beliefs ... that align with the interests of fossil fuel industry actors.”<sup>85</sup>
- It is common to find petro-pedagogy strategies in education materials funded by the oil and gas industry in Canada. We use the term to describe strategies such as
  - the so-called “bias-balanced” approach to energy education, which frames lesson plans that don’t include industry perspectives as unfairly biased against the industry;
  - greenwashing, which means making false or misleading environmental impact statements about the oil and gas industry and its operations;
  - redwashing,” which involves uniformly positive representations of the fossil fuel industry’s relations to Indigenous people, ignoring Indigenous resistance to and harms from fossil fuel projects, and co-opting Indigenous cultural symbols and languages in their promotion of initiatives and partnerships (termed “redwashing” by the Yellowhead Institute and other Indigenous scholars and activists);<sup>86</sup>
  - a focus on individual consumer actions, rather than systemic transformation; and
  - the promotion of (often unproven) technological solutions rather than a rapid energy transition.
- William Lamb and others describe fossil fuel industry education strategies as “discourses of delay,” which serve to “disorientate and discourage ambitious climate action,” postpone the energy transition, and protect the interests of the fossil fuel industry while increasing climate harms.<sup>87</sup>

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<sup>85</sup> Eaton and Day, “Petro-pedagogy”: 458.

<sup>86</sup> We are using the term in recognition and support of the leadership of Indigenous activists and thought-leaders who named and described this issue. The Indigenous-led Yellowhead Institute describes “redwashing” as “an attempt to craft an appearance of reconciliation, or being generous — reconciliation in a purely superficial conceptualization.” See, for example, Robert Houle, “Redwashing Extraction: Indigenous Relations at Canada’s Big Five Banks,” August 2022: 4,

[https://yellowheadinstitute.org/wp-content/uploads/2024/01/Redwashing-Extraction-YI-Special-Report-8.22-2\\_compressed-1.pdf](https://yellowheadinstitute.org/wp-content/uploads/2024/01/Redwashing-Extraction-YI-Special-Report-8.22-2_compressed-1.pdf)

<sup>87</sup> William F. Lamb, Giulio Mattioli, Sebastian Levi, J. Timmons Roberts, Stuart Capstick, Felix Creutzig, Jan C. Minx, Finn Müller-Hansen, Trevor Culhane, and Julia K. Steinberger, “Discourses of Climate Delay,” *Global Sustainability* 3 (2020): 3, <https://doi.org/10.1017/sus.2020.13>.

## 2A. Petro-Pedagogy: A Strategy to Delay Climate Action

The oil and gas industry has a long history of attempting to shape public perceptions of fossil fuel use and sow doubt about the science of climate change.<sup>88</sup> In recent years, with the rise of youth climate activism, the impacts of climate change, and growing calls for an energy transition, managing public understanding of climate change has become a pressing issue for the industry. Accordingly, the industry has shifted from a strategy of climate denial to one of delay.<sup>89</sup> As part of this strategy, oil and gas companies have inserted themselves into the field of education in ways that have allowed them to influence how and what information about climate change and climate solutions is conveyed in classrooms in Canada. This has led to an approach to climate change education that focuses on individual consumer actions while largely failing to address either the role of the fossil fuel industry in causing climate change or the urgency of transitioning off fossil fuels.<sup>90</sup> Emily Eaton and Nick Day coined the term “petro-pedagogy” to describe “teaching practices and resources [that] work to centre, legitimize, and entrench a set of beliefs ... that align with the interests of fossil fuel industry actors.”<sup>91</sup> They include strategies such as bias-balancing, greenwashing, and focusing on individual actions, and argue that teaching messages “centred on individual actions” serve to “insulate fossil fuel industries from criticism” and “dissuade young people from questioning or understanding the role of corporate power in the climate crisis.”<sup>92</sup>

We expand their use of the term to include all of the strategies outlined below.

### PETRO-PEDAGOGY STRATEGIES



**bias-balancing:** learning that includes both environmental and industry perspectives on climate change is presented as “bias-balanced.” However, this does not account for the vested interests of the fossil fuel industry, or the outsize impact of fossil fuels on driving climate change, and on human and planetary health.



**greenwashing:** learning activities that exaggerate the industry’s pro-environmental actions and/or omit discussion of their role in atmospheric harm and biodiversity loss. As well, these materials often provide marketing opportunities by connecting company brands with environmental education programs and materials.

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<sup>88</sup> Dharna Noor and Amy Westervelt, “Why the Fossil Fuel Industry Infiltrated Schools,” *Drilled*, September 24, 2021, <https://drilled.media/news/abcs-01>; Jie Jenny Zou, “Oil’s Pipeline to America’s Schools: Inside the Fossil-Fuel Industry’s Not-So-Subtle Push into K–12 Education,” *Publicintegrity.org*, June 15, 2017, <https://apps.publicintegrity.org/oil-education/>.

<sup>89</sup> Lamb et al., “Discourses of Climate Delay.”

<sup>90</sup> Eaton and Day, “Petro-pedagogy”: 458 – 9. For further discussion of the industry’s interest in focusing on individual action see: Kate Yoder, “Footprint Fantasy. Is it time to forget about your carbon footprint?” *Grist*, August 26, 2020, <https://grist.org/energy/footprint-fantasy/>; Michael E. Mann, *The New Climate War: The Fight to Take Back Our Planet*, (Public Affairs: January 12, 2021): Ch. 4; Anjali Appadurai, “Taking on Big Oil by Looking Within,” in Kum-Kum Bhavnani, John Foran, Priya A. Kurian, Debashish Munshi (eds.), *Climate Futures: Reimagining Global Climate Justice* (Bloomsbury Publishing, 2019): 40–46.

<sup>91</sup> Eaton and Day, “Petro-pedagogy”: 458.

<sup>92</sup> Eaton and Day, “Petro-pedagogy”: 457.



**“redwashing”**\*: education programming that presents uniformly positive representations of the industry's relationships with Indigenous peoples, ignoring Indigenous resistance to and harms (to culture, lands, and health) from fossil fuel projects, and and co-opting Indigenous cultural symbols and languages in their promotion of initiatives and partnerships. This has been termed "redwashing" by the Yellowhead Institute and other Indigenous scholars and activists.



**individual**: emphasizes actions individuals can/should take and typically ignores collective actions, conveying the idea that climate change can be solved by individual consumer choices rather than cultural, societal, and economic changes.



**technological optimism**: emphasizes technological fixes rather than education about system-wide change and the need to transition away from fossil fuels toward renewable energy.

*\*We are using this term in recognition and support of the leadership of Indigenous activists and thought-leaders who named and described this issue.*

## 2B. The Bias-Balanced Approach

The promotion of a “bias-balanced” approach is common practice among environmental education organizations supported by the oil and gas industry. As Enoch and Eaton documented in their 2019 report, “Crude Lessons: Fossil Fuel Industry Influence on Environmental Education in Saskatchewan,” the oil and gas industry was able to promote the “bias-balanced” approach by “implicitly framing any lesson plan that failed to include industry perspectives as unfairly biased against the industry.” The industry, and the educational organizations it funded, were then able to present lessons that included both industry and environmental interests as a more reasonable, “bias-balanced” alternative.<sup>93</sup>

The oil and gas-funded organization SEEDS Connections was one of the first industry-funded organizations to promote this approach. As then-president David Sandermeier acknowledged to *Oilweek* magazine in 1999, the industry “can’t put propaganda into the school system,” but they could promote industry perspectives by getting “what we call bias-balanced information into [students’] hands.”<sup>94</sup>

Some commonly used pedagogical practices in “bias-balanced” education resources to insert

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<sup>93</sup> Eaton and Enoch, *Crude Lessons*: 10.

<sup>94</sup> Eaton and Enoch, *Crude Lessons*: 10.

industry viewpoints include: setting up debates, organizing role-play on new extraction developments, and discussing different stakeholder viewpoints. Eaton and Enoch have documented how these strategies are promoted by industry-funded educational nonprofits in Saskatchewan. As they point out, the development of lesson plans or programs that require students to identify different stakeholder positions ensures that industry viewpoints are always included. In the process, they also found that students were often asked to specifically consider “the centrality of fossil fuels to modern life as well as the economic benefits of oil and gas extraction.”<sup>95</sup> Eaton and Day make the point that this “bias-balanced” approach serves industry interests by implying that “no stakeholder (e.g., the interests of the environment) should take priority over others and that there are no simple solutions to environmental issues.”<sup>96</sup>

In a separate study of the oil and gas industry involvement in education in Alberta, Andrew Hodgkins has shown how the “bias-balanced” approach is often used to promote the industry to students. As an example, he cites the film, *The Amazing Athabasca Oil Sands*. Created for SEEDS, the film was promoted to teachers as a “bias-balanced” resource that used a “multiperspective (*sic*) approach” to “help students critically address societal issues related to the development of Alberta’s oil sands.” But, as Hodgkins points out, the film uses its “multiperspective” lens to present the oil and gas industry as “technologically advanced, economically sound, and environmentally accountable,” and a “good neighbour” of Indigenous communities. As well, it fails to present any evidence that contradicts the oil industry’s claims.<sup>97</sup>

Our research uncovered similar examples of how a bias-balanced strategy is used to insert oil and gas perspectives into educational materials, including:

- A stakeholder “energy dialogues” unit on fracking created by Inside Education which asks students to take on the roles of fossil fuel industry representatives and environmentalists and then discuss the pros and cons of fracking.<sup>98</sup>
- An “Oil Sands Field Trip” program developed by Inside Education for elementary and middle school students. According to the Teacher Guide for Grades 7 to 9, the program “proposes concerns and solutions to oil sands production, striking a balance between energy and environmental needs.”<sup>99</sup> Teachers are encouraged to set up a town hall where students role-play different stakeholders, including representatives of oil companies, government, Indigenous communities, environmental groups, and the public.
- A program called the Oil Sands Education Dialogue from Green Learning Canada that “teaches students about the oil sands from a variety of perspectives,”<sup>100</sup> using role-play to explore the workings of the oil sands from the perspective of different stakeholders. In

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<sup>95</sup> Eaton and Enoch, *Crude Lessons*: 10.

<sup>96</sup> Eaton and Day, “Petro-pedagogy”: 463.

<sup>97</sup> Andrew Hodgkins, “Manufacturing (il)literacy in Alberta’s classrooms: The case of an oil-dependent state,” *Journal for Critical Education Policy Studies* 8, no. 1 (2010): 277–278, <http://www.jceps.com/wp-content/uploads/PDFs/08-1-10.pdf>.

<sup>98</sup> “Hydraulic Fracturing,” Inside Education, n.d., <https://www.insideeducation.ca/energy-dialogues/hydraulic-fracturing/>.

<sup>99</sup> “Oil Sands Field Trip,” Inside Education, n.d., <https://www.insideeducation.ca/learning-resources/oil-sands-field-trip-8/>; “OilSands Field Trip, Teachers’ Guide, Grades 7–9,” Inside Education, n.d.: 2, [https://www.insideeducation.ca/uploads/source/learning/Oilsands7\\_Final.pdf](https://www.insideeducation.ca/uploads/source/learning/Oilsands7_Final.pdf).

<sup>100</sup> Green Learning.ca, *2019 Annual Report*: 7, <https://greenlearning.ca/assets/uploads/pdf/GL-annual-report-2019.pdf>; “Oil Sands Education Dialogue,” GreenLearning, 2022, <https://programs.greenlearning.ca/oil-sands-education-dialogue>.

one module, students explore falling oil prices by discussing what steps should be taken while role-playing as representatives of the government of Canada, the government of Alberta, an oil company employee, and Albertans. In another module, students role-play as key stakeholders in an energy regulator hearing about a proposed new oil sands development where concerns are aired and an oil company explains their plans. The last module has students learning about the consultation process between Indigenous communities and oil companies when they are negotiating new development projects by role-playing members of Indigenous communities and the oil company.

- A unit titled “Making a Decision about the Construction of an Oil Pipeline through British Columbia” developed by National Geographic and platformed by Learning for a Sustainable Future. This unit asks students to identify the different stakeholders involved and discuss the proposal only after they have been taught about “the importance of oil to the modern economy along with the environmental and social impacts of extracting oil from the ground and getting it to the consumer.”<sup>101</sup>
- An educational resource from Let’s Talk Science titled “Generating Electricity from Fossil Fuels” discusses the “advantages” and “disadvantages” of using fossil fuels to generate electricity, before concluding that fossil fuels have “improved the quality of life around the world” and “may play a role in increased energy production that reduces poverty.” Although the lesson plan references climate impacts, this pro-industry conclusion ignores renewables as a clean source of energy that reduces poverty and omits mention of the disproportionate impacts of climate change on low-income societies.<sup>102</sup>

The so-called bias-balanced approach to energy and climate also shows up in textbooks. In their 2019 study on climate science curricula in secondary schools in Canada, Seth Wynes and Kimberley Nicholas found that many curriculum developers felt the need to adopt a “balanced approach to climate change education.”<sup>103</sup> In this case, curriculum developers are not working for industry-funded groups, but they are working in an information environment in which the oil and gas industry has successfully promoted a “both sides” approach to sow doubt about the scientific consensus on climate change. Further, as Eaton and Day have shown, in some instances, the “need for balance and the legitimacy accorded to industry interests and perspectives is so widespread that industry actors are understood as natural partners and stakeholders in curriculum renewal and school content.” In Saskatchewan, this has led to industry representatives being involved in developing curricula and associated resources, including textbooks.<sup>104</sup>

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<sup>101</sup> National Geographic, “Making a Decision about the Construction of an Oil Pipeline through British Columbia,” *National Geographic Resource Library Lesson*, 2016: 2; <https://media.nationalgeographic.org/assets/lesson/assets/making-decision-about-construction-oil-pipeline-the-1.pdf>. Accessed via R4R Resources for Rethinking, Resources4rethinking.ca, <https://www.resources4rethinking.ca/en/resource/making-the-decision-about-the-construction-of-an-oil> on the Learning for A Sustainable Future website: <https://lsf-1st.ca/resources/>

<sup>102</sup> “Generating Electricity: Fossil Fuels,” Let’s Talk Science, December 17, 2020, <https://letstalkscience.ca/educational-resources/backgrounders/generating-electricity-fossil-fuels>.

<sup>103</sup> Seth Wynes and Kimberly A. Nicholas, “Climate science curricula in Canadian secondary schools focus on human warming, not scientific consensus, impacts or solutions,” *PLoS one* 14, no. 7 (2019): 11, <https://doi.org/10.1371/journal.pone.0218305>.

<sup>104</sup> Eaton and Day, “Petro-pedagogy”: 467.

Overall, studies suggest that the promotion of bias-balance in learning about fossil fuels has proven effective at advancing the industry's perspectives and agendas. In interviews with educators, Eaton and Enoch "found evidence that the industry's strategy of exploiting 'balance' to ensure its perspectives are included in any discussion of environmental issues has been a success." After exposure to materials from groups like Inside Education or SEEDS Connections, they found that teachers, even those with strongly pro-environmental views, were more inclined to view lessons as one-sided if they did not incorporate an industry voice.<sup>105</sup> It is relevant to note here that in 2019, Ellen Field found that in Canada, one-third of teachers K–12 were teaching climate change as a debate.<sup>106</sup>

"Bias-balanced" resources are limiting climate change education in various ways. These resources typically

- promote the idea that different views on fossil fuel use and climate change are all valid, with no perspective being more correct than any other;
- omit or downplay information about the role of the fossil fuel industry in driving climate change;
- omit information about the scientific consensus on climate change;
- omit information about the devastating consequences that continued fossil fuel use is projected to have on the world's climate systems, ecosystems and human societies.

Wynes and Nicholas point out that we would never expect to see messaging in a health class from a tobacco company that helped students remember that smoking is not all bad and that it can help with "stress relief, weight loss, social acceptance in certain groups." Helping students see that there are two sides to smoking is never the end goal of education since any health advantages to smoking "are dwarfed by the negative health outcomes."<sup>107</sup> Experts have made clear that the world must rapidly transition away from fossil fuels in order to avoid the most catastrophic impacts of climate change.<sup>108</sup> Certainly then, any advantages of continued fossil fuel use are dwarfed by the negative outcomes to people and the planet and by the far superior advantages of a rapid transition to clean renewable energy.

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<sup>105</sup> Eaton and Enoch, *Crude Lessons*: 11.

<sup>106</sup> Field, et al., *Canada, Climate Change and Education*: 17. According to the study by Wynes and Nicholas many Canadian textbooks also present climate change as a debate. See Wynes and Nicholas, "Climate Science Curricula."

<sup>107</sup> Wynes and Nicholas, *Climate Science Curricula*, 17.

<sup>108</sup> IEA, *Net Zero Roadmap: A Global Pathway to Keep the 1.5 °C Goal in Reach*. See also, United Nations Environment Programme, *Emissions Gap Report 2024*

## 2C. Greenwashing

In Canada, oil and gas industry greenwashing is on the rise.<sup>109</sup> The Canadian Climate Law Initiative defines greenwashing as “the practice of conveying false, misleading, or unsupported information about the environmental or climate benefits of an organization’s product, service, activity, or brand. Greenwashing manifests itself in different ways and it promotes false solutions and actions.”<sup>110</sup>

As public concern over climate change has increased, fossil fuel companies have sought to greenwash and rebrand themselves as part of the solution by

- emphasizing their investments in renewable energy;
- presenting “natural” gas as a clean fuel; and
- touting their commitment to emission reductions, in particular through carbon capture and storage.

As numerous critics have pointed out, these claims are misleading at best. The industry’s widely publicized investments in clean energy pale in comparison to their continued investments in climate-harming fossil fuels. According to the International Energy Agency, the clean energy investments of fossil fuel companies in 2022 made up only 1% of their total capital expenditure.<sup>111</sup> The industry’s assertions that gas is a clean fuel sidestep the facts that methane is a potent greenhouse gas and that the frequency of gas project leaks effectively make it as big of a driver of climate change as coal.<sup>112</sup> And the industry’s public promotion of carbon capture and storage (CCS) as a solution has been privately questioned by the industry itself.<sup>113</sup> CCS is not on track at the scale required to align with the necessary reduction in emissions to keep the planet below the 1.5°C threshold, nor does it capture the majority of emissions which come from fossil fuel consumption. The truth is that far from being a climate leader, the industry’s plans for continuing to expand fossil fuel production are putting the world on track for catastrophic levels of warming.<sup>114</sup>

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<sup>109</sup> Shane Tiley reports that: “In Canada, climate-related greenwashing incidents in the banking and financial services sectors increased by 70% in 2023, mainly due to their financing of projects and activities within the fossil fuel and O&G sectors.” Shane Tiley, “Clearing the Air with Canada’s Oil & Gas Sector: The Interplay and Actions of Stakeholders on Greenwashing,” [sustainalytics.com](https://www.sustainalytics.com/esg-research/resource/investors-esg-blog/clearing-the-air-with-canada-s-oil---gas-sector-the-interplay-and-actions-of-stakeholders-on-greenwashing), August 20, 2024, <https://www.sustainalytics.com/esg-research/resource/investors-esg-blog/clearing-the-air-with-canada-s-oil---gas-sector-the-interplay-and-actions-of-stakeholders-on-greenwashing>. See also, Greenpeace and Canadian Association of Physicians for the Environment, *Greenwashing Big Oil & Gas: The Fossil Fuel Deception Playbook*, 2023, <https://cape.ca/wp-content/uploads/2023/12/Greenwashing-Toolkit-Part-1.pdf>.

<sup>110</sup> Sonia Li Trottier, “From Greenwashing to Green Trust: How Bill C-59 Strengthens Regulations and Protects Canadians,” Canada Climate Law Initiative, June 25, 2024, <https://ccli.ubc.ca/bill-c-59-anti-greenwashing/>.

<sup>111</sup> International Energy Agency, *The Oil and Gas Industry in Net Zero Emissions. World Energy Outlook Special Report*. IEA, Paris, December, 2023: 25, <https://www.iea.org/reports/the-oil-and-gas-industry-in-net-zero-transitions>.

<sup>112</sup> Deborah Gordon, Frances Reuland, Daniel J Jacob, John R Worden, Drew Shindell and Mark Dyson, “Evaluating net life-cycle greenhouse gas emissions intensities from gas and coal at varying methane leakage rates,” *Environmental Research Letters* 18, no. 8 (2023): 084008, [10.1088/1748-9326/ace3db](https://doi.org/10.1088/1748-9326/ace3db).

<sup>113</sup> InfluenceMap, “The Canadian Oil Sands Playbook: An Analysis of Pathways Alliance,” @influencemap, June 2024, <https://influencemap.org/briefing/Pathways-Alliance-28367>.

<sup>114</sup> According to the 2023 UN Production Gap Report, the industry’s plans are for “producing around 110% more fossil fuels in 2030 than would be consistent with limiting warming to 1.5°C.” SEI, Climate Analytics, E3G, IISD, and UNEP. *The Production Gap: Phasing down or phasing up? Top fossil fuel producers plan even more extraction despite climate promises*. Stockholm Environment Institute, Climate Analytics, E3G, International Institute for Sustainable Development and United Nations Environment Programme, 2023: 4, <https://doi.org/10.51414/sei2023.050>.

This gap between the greenwashed claims of the oil and gas industry and their actual practices has drawn national and international condemnation. On June 5, 2024, the UN Secretary General António Guterres described the misleading advertising of the oil and gas industry as a “toxic cover-up [that] could push our world over the climate cliff,” and he called for “every country to ban advertising from fossil fuel companies.”<sup>115</sup> In Canada, public concern over greenwashing has led to a complaint being filed with the Competition Bureau against the Royal Bank of Canada for presenting itself as a supporter of the Paris Agreement while financing oil and gas operations that will undermine the Agreement’s goals,<sup>116</sup> as well as complaints against the Canadian Gas Association and the Pathways Alliance for making false and misleading environmental claims. It also led to the passage of Bill C59 which amended sections of the Competition Act so that businesses are now required to substantiate their environmental claims with scientific evidence and robust documentation.<sup>117</sup>



Given that the harms of greenwashing are widely recognized by governments and the public, it is concerning that materials that greenwash the oil and gas industry are showing up in classrooms. Research has shown that children are especially vulnerable to corporate advertising, and that their vulnerability increases when products are promoted to them in the trusted spaces of schools.<sup>118</sup> When children are provided with materials that present the oil and gas industry as green or environmentally friendly, they are being invited to view as positive an industry that is driving climate breakdown, harming their health, and threatening their futures.

In Canada, oil and gas companies greenwash their environmental records to K–12 students in a variety of ways, including by

- displaying company logos on environmental or renewable education resources;
- presenting the industry as supportive of environmental action; and
- labelling fossil gas as “clean.”

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<sup>115</sup> “Bogus Net-Zero Pledges ‘Rank Deception,’ Sham Must End, Secretary-General Stresses at Launch of Report by High-Level Expert Group on Non-State Actors’ Commitments,” United Nations, Meetings Coverage and Press Releases, November 8, 2022, <https://press.un.org/en/2022/sgsm21576.doc.htm>; Benjamin Shingler, “UN Chief Calls for Fossil Fuel Ads to Be Banned like Cigarette Ads,” CBC, June 6, 2024, <https://www.cbc.ca/news/climate/united-nations-guterres-fossil-fuel-advertising-ban-1.7226571>.

<sup>116</sup> “Competition Bureau Launches Investigation into Greenwashing Complaint,” *Ecojustice*, February 3, 2023, <https://ecojustice.ca/news/competition-bureau-launches-investigation-into-greenwashing-complaint-against-north-americas-largest-forest-certification-scheme/>.

<sup>117</sup> “Understanding Canada’s Bill C-59: New Greenwashing Regulations,” *Arbor*, Arbor.eco, 2024, <https://www.arbor.eco/blog/understanding-canadas-bill-c-59-new-greenwashing-regulations>.

<sup>118</sup> Melanie McNaught, “Advertising leads to consumerism in children,” *Canadian Journal of Family and Youth/Le Journal Canadien de Famille et de la Jeunesse* 13, no. 3 (2021): 363-370, <https://doi.org/10.29173/cjfy29708>; Gidney, *Captive Audience*: 220.

## I. Logos on Environmental Education Resources

The display of oil and gas company logos on environmental education resources enables these companies to market themselves as supporters of clean energy and environmental protection—even as they continue to invest in expanding the production of climate-destabilizing fossil fuels. Such logos can be found on educational materials provided directly by companies and by third-party environmental education nonprofits that receive industry funding. The following are just a few examples:

- FortisAlberta and Enbridge logos are displayed on an Earth Rangers webpage for an eco-activity called “Create Your Own Wind Turbine.”<sup>119</sup>
- The FortisAlberta logo is displayed on an Earth Rangers eco-activity webpage on switching to energy efficient lightbulbs.<sup>120</sup>
- The Enbridge logo is on the Earth Rangers School Assembly programs on protecting biodiversity.<sup>121</sup>
- The Cenovus logo is displayed on the signs Cenovus provides for the school food forest program that it sponsors, and on Notice Nature’s passport program, which is billed as a way to help children connect with nature.<sup>122</sup>
- The Chevron logo is displayed on the poster for the Chevron Open Minds Zoo School at the Calgary Zoo.<sup>123</sup>



This display of oil and gas industry logos on materials intended to educate children about environmental issues is a clear example of industry influence and greenwashing. By displaying their branding on environmental education resources, these companies, which bear so much responsibility for climate change, are connecting themselves to the idea of climate solutions.

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<sup>119</sup> “Eco-Activity: Create Your Own Wind Turbine! - Where Kids Go to Save Animals!” Earth Rangers, September 23, 2021, <https://www.earthrangers.com/EN/CA/eco-activities/eco-activity-create-your-own-wind-turbine/>.

<sup>120</sup> “Eco-Activity: Lightbulb Switcheroo!” Earth Rangers, March 9, 2021, <https://www.earthrangers.com/EN/CA/eco-activities/eco-activity-108-lightbulb-switcheroo/>.

<sup>121</sup> “Enbridge Nomination Program,” Earth Rangers, March 14, 2023, <https://www.earthrangers.com/EN/CA/enbridge-nomination-program/>.

<sup>122</sup> “Cenovus Food Forest,” Notice Nature, 2023, <https://www.noticenature.ca/community-connector/food-forest/>; “Promotional Materials,” Notice Nature, 2024, <https://www.noticenature.ca/activities-resources/promotional-materials>.

<sup>123</sup> “Zoo School,” Wilder Institute/Calgary Zoo, n.d., <https://cbe.ab.ca/ccom/Pages/Zoo-School.aspx>.

## II. Presenting Industry as Supportive of Environmental Action

A second form of greenwashing employed by the oil and gas industry and identified by Eaton and Day is the strategy of focusing on “micro-level environmental issues with local relevance” as a means of presenting themselves as “engaging in or supporting environmental responsibility.” They cite, as an example, the case of a Calgary-based oil and gas company representative who gave a presentation to upper elementary school students on how “fossil fuels are formed, accessed, and extracted” and then followed this with a tree-planting activity on the school grounds “as part of an ‘outdoor classroom’ project funded by the oil company.” Here, the company’s support of local environmental action boosts its claim to environmental stewardship, even as the industry’s “core business continues to pollute and degrade the environment.”<sup>124</sup>



We found similar examples. For instance, Cenovus’s funding of Notice Nature enables the company to tie its reputation to the organization’s local efforts to support “healthy wildlife, people, ecosystems, communities, and all the places we love,” while obscuring the fact that the company’s main business is the production of polluting fossil fuels. As Eaton and Day observe, there is a strong preference among industry-backed organizations for “highlighting local issues related to nature conservation over the global issue of climate change and greenhouse gas mitigation.”<sup>125</sup>

In addition to supporting local environmental projects, oil and gas companies greenwash by presenting the industry itself as environmentally responsible. Examples of this can be found in the resources developed by industry-backed educational organizations such as Inside Education, which highlight the work of reclamation after extraction sites are closed. One of Inside Education’s resources makes the claim that “As new technologies and techniques develop, reclamation will continue to advance and improve so that the ‘footprint’ of a mine will be more like a snapshot in time”—a claim that discounts the devastating impacts of fossil-fuel-driven climate change over time as well as the industry’s legacy of irreparable harm to lands, waterways and Indigenous communities in the oil sands region.<sup>126</sup> Other examples can be found in the “energy literacy” materials developed by SEEDS Connections. For instance, their Imperial Oil-

<sup>124</sup> Eaton and Day, “Petro-pedagogy”: 463.

<sup>125</sup> “Cenovus Food Forest,” Notice Nature, 2023, <https://www.noticenature.ca/community-connector/food-forest/>; Eaton and Day, “Petro-pedagogy”: 463.

<sup>126</sup> “Mining Poster,” Inside Education, n.d., [https://www.insideeducation.ca/uploads/source/learning/InsideEducation\\_Mining\\_Poster\\_18x24\\_P3\\_Small.pdf](https://www.insideeducation.ca/uploads/source/learning/InsideEducation_Mining_Poster_18x24_P3_Small.pdf); “Oil Sands Tailings,” Canadian Parks and Wilderness Society, Northern Alberta Chapter, October 16, 2023, <https://cpawsnab.org/our-work/oil-sands-tailings/>.

funded “Habitat in the Balance” series includes a lesson entitled “What to do about Spoiled Soil,” which looks at the industry’s role in reclaiming land and soil impacted by extraction.<sup>127</sup>

As part of this greenwashing strategy, industry-backed educational organizations often feature industry professionals who do environment-related work. For instance, Inside Education reported that it held two “experiential learning events for female and non-binary students to connect with female professionals in natural resource and environmental sectors.”<sup>128</sup> Here, the combination of a progressive approach to gender with claims about the industry’s environmental work serves to deflect criticism of the industry’s broader environmental impacts, along with the threat climate change poses to marginalized groups, including women and LGBTQ2S+ individuals.<sup>129</sup>

Another example of this approach can be found on the Let’s Talk Science career profile web page for students. Let’s Talk Science, which is funded by seven fossil fuel companies,<sup>130</sup> includes several representatives from the oil and gas industry on this page, including the “manager of climate policy at Enbridge,” who describes his work as focused on “risk assessment and how Enbridge can be a Green Leader,” and an “environmental specialist” for Chevron who says her job is to “make sure what we are doing minimizes or eliminates our impacts on the environment.”<sup>131</sup> Regardless of the personal motivations of these individuals, the effect of highlighting their work on the Let’s Talk Science website is to suggest that the continued extraction of oil and gas by Chevron and Enbridge can be reconciled with environmental protection—a claim that rests on denying the fact that the expansion of oil and gas operations by these same companies is increasing emissions, driving climate breakdown, and posing grave threats to the lives and security of young people everywhere.

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<sup>127</sup> “What to Do about Spoiled Soil,” SEEDS Connection, 2019, <https://seedsconnections.org/what-do-about-spoiled-soil>. Registration is required to access this resource.

<sup>128</sup> “Women in Outdoor Careers: Experiential Field Day,” Inside Education, October 2023, [https://www.insideeducation.ca/uploads/source/WioC\\_Report\\_\(4\).pdf](https://www.insideeducation.ca/uploads/source/WioC_Report_(4).pdf).

<sup>129</sup> Samuel Mann, Tara McKay, and Gilbert Gonzales, “Climate Change-Related Disasters & the Health of LGBTQ+ Populations,” *The Journal of Climate Change and Health*, Vol. 18, July–August 2024, <https://doi.org/10.1016/j.joclim.2024.100304>; Anna Kaijser and Annica Kronsell, “Climate change through the lens of intersectionality,” *Environmental Politics* 23, no. 3 (2014): 417–433, <https://doi.org/10.1080/09644016.2013.835203>.

<sup>130</sup> “Our Donors,” Let’s Talk Science, 2024, <https://letstalkscience.ca/our-supporters/donors>. Note: Enerplus is not included on their donor page but is acknowledged as a funder of a specific Diversity, Equity and Inclusion program. See: @LetsTalkScience, “We are excited to announce @EnerplusCorp as a new donor,” X (formerly Twitter), March 12, 2022, <https://x.com/LetsTalkScience/status/1502706023869685767>; and Let’s Talk Science, “Let’s Talk Science is grateful for Enerplus unwavering support of Equity, Diversity, and Inclusion in STEM education,” LinkedIn, 2024, [www.linkedin.com/posts/let%27s-talk-science-supportersaturday-activity-7035277300287897600-EQOp/?trk=public\\_profile\\_like\\_view](https://www.linkedin.com/posts/let%27s-talk-science-supportersaturday-activity-7035277300287897600-EQOp/?trk=public_profile_like_view). The profile of the board member in question can be found here: <https://www.linkedin.com/in/hilary-foulkes-9005599/?originalSubdomain=ca>. Enerplus recently merged with Chord Energy: <https://ir.chordenergy.com/2024-05-31-Chord-Energy-and-Enerplus-Complete-Combination,-Creating-Premier-Williston-Focused-E-P-Company>.

<sup>131</sup> “Edwin Makkinga—Manager, Climate Policy,” Let’s Talk Science, 2022, <https://letstalkscience.ca/careers/edwin-makkinga>; “Emily Jobson—Environmental Specialist,” Let’s Talk Science, 2016, <https://letstalkscience.ca/careers/emily-jobson>.

### III. Labelling Natural Gas “Clean”

A third greenwashing strategy widely used by the oil and gas industry involves labelling natural or fossil gas a “clean” source of energy, even though research has shown that this is demonstrably not the case. While it is true that the carbon emissions from burning fossil gas are lower than those from burning other fossil fuels, methane, which is the main component of fossil gas, is a potent greenhouse gas, and scientists have found that when gas leaks from pipelines and production facilities are factored in, the climate impacts of burning gas are as bad as those from burning coal.<sup>132</sup> Further, the negative impacts of hydraulic fracturing and burning fossil gas on human and environmental health have been shown to be significant.<sup>133</sup> The chemicals used in hydraulic fracturing (“fracking”) seep into groundwater and have been found to cause cancer and other disorders and are particularly harmful to children.<sup>134</sup> In addition, as several reports have shown, children who grow up in homes where gas is burned suffer from higher rates of asthma and other respiratory illnesses.<sup>135</sup> Yet, despite these well-documented negative impacts, the oil and gas industry has continued to claim that fossil gas is a clean fuel—and industry-backed educational organizations have continued to reproduce these messages in the educational resources they provide to children in K–12 schools.

Our review of online sources found several educational resources from industry-funded groups that failed to mention the climate impacts of methane and/or minimized the dangers fracking poses to human and environmental health. For example, we found the following:

- A lesson plan developed by the gas company FortisBC that instructs teachers to explain that natural gas is the cleanest-burning fossil fuel, with the lowest carbon emissions, but makes no mention of the potency of methane as a greenhouse gas or its impacts on global warming.<sup>136</sup>
- A lesson plan from Inside Education that refers to natural gas as a “cleaner burning fuel, compared to coal and oil,” but fails to address the climate and environmental impacts of producing and burning it.<sup>137</sup>

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<sup>132</sup> “Environmental Impacts of Natural Gas,” Union of Concerned Scientists, June 19, 2014, Updated May 9, 2023, <https://www.ucsusa.org/resources/environmental-impacts-natural-gas>.

<sup>133</sup> Klaus-Michael Wollin, G. Damm, H. Foth, A. Freyberger, T. Gebel, A. Mangerich, U. Gundert-Remy, F. Partosch, C. Röhl, T. Schupp and Jan G. Hengstler, “Critical evaluation of human health risks due to hydraulic fracturing in natural gas and petroleum production,” *Archives of Toxicology* 94, no. 4 (2020): 967–1016, <https://doi.org/10.1007/s00204-020-02758-7>.

<sup>134</sup> David O. Carpenter, “Hydraulic Fracturing for Natural Gas: Impact on Health and Environment,” *Reviews on Environmental Health* 31, no. 1 (January 1, 2016), <https://doi.org/10.1515/reveh-2015-0055>; Jon Hurdle, “As Evidence Mounts, New Concerns About Fracking and Health,” *Yale Environment* 360, November 17, 2022, <https://e360.yale.edu/features/fracking-gas-chemicals-health-pennsylvania>.

<sup>135</sup> Marc-Antoine Bédard et al., “Association between Gas Stove Use and Childhood Asthma in the Canadian CHILD Cohort Study,” *Canadian Journal of Public Health/Revue Canadienne de Santé Publique* 114, no. 4 (August 1, 2023): 705–8, <https://doi.org/10.17269/s41997-023-00779-0>; Tanya Lewis, “The Health Risks of Gas Stoves Explained,” *Scientific American*, January 19, 2023, <https://www.scientificamerican.com/article/the-health-risks-of-gas-stoves-explained/>.

<sup>136</sup> FortisBC lesson plans are discussed in Ainslie Cruickshank, “Why Are Oil-And-Gas Companies Developing Lesson Plans for Teachers?” *The Walrus*, August 26, 2022, <https://thewalrus.ca/why-are-oil-and-gas-companies-developing-lesson-plans-for-teachers/>.

<sup>137</sup> “Petroleum: Teachers’ Guide, Jr High,” Inside Education, 2010: 6, <https://www.insideeducation.ca/uploads/source/learning/petroleum-poster-teachers-guide/Jr-High-Teachers-Guide.pdf>.

- A module from Let's Talk Science, titled "What is Fracking," that tells students that people are "worried about water contamination" and points to a study about methane levels in drinking water, but then asks students to consider the views of those "who work in the natural gas industry" who say that "the risk of this kind of contamination is very low." An accompanying list of resources includes the website of the U.S. lobby group, the Natural Gas Supply Association, which claims that "Natural gas is an extremely important source of energy for reducing pollution and maintaining a clean and healthy environment." Studies of the full impacts of fracking on human and environmental health are not provided.<sup>138</sup>

*"When the benefits and risks associated with resource extraction are explored on television programs, the risks often get a greater focus than the benefits. Explain why the documentary producers might take this approach." —Let's Talk Science*

- An instructional video from Ten Peaks that promotes the fossil gas industry as a climate solution under the title: "Canada's Methane Mission Possible: How Canadian Liquefied Gas Will Help the World Decarbonize."<sup>139</sup> Methane is promoted as a cleaner burning fuel, but no mention is made of its potency as a greenhouse gas nor the climate impacts of continuing to use it.

The authors of educational resources that present fossil gas as "clean" are engaged in greenwashing. Claims that fossil gas is clean ignore the environmental and health impacts of fracking as well as the contribution of methane to dangerous global warming. Including these claims in educational resources intended for children encourages the continued consumption of a product that is endangering both their health and their prospects for a safe climate future.

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<sup>138</sup> Amaya Singh, "What Is Fracking?," Let's Talk Science, December 9, 2019, <https://letstalkscience.ca/educational-resources/stem-in-context/what-fracking>; "Natural Gas and the Environment," Naturalgas.org, September 13, 2013, <http://naturalgas.org/environment/naturalgas/>.

<sup>139</sup> 10Peaks, "Carbon & Climate Canada's Methane Mission Possible How Canadian Liquefied Natural Gas Will Help the (sic)," YouTube, November 9, 2024, <https://www.youtube.com/watch?v=JjAH031r0zM>.

## 2D. Corporate Colonialism

If greenwashing serves to present corporations as environmentally friendly while they continue to engage in practices that are environmentally destructive, many Indigenous scholars and activists see a similar corporate strategy at work in a practice they have termed “redwashing.” In a report titled *Redwashing Extraction*, for the Indigenous-led Yellowhead Research Institute, Robert Houle, Wapsewipi First Nation, Treaty 7 territory, defines redwashing as similar to “greenwashing” in that it “merely co-opts language and symbols but offers little transformative or meaningful change.” It is, he writes, “an attempt to craft an appearance of reconciliation, or being generous — reconciliation in a purely superficial conceptualization.”<sup>140</sup> Houle’s critique is echoed by other Indigenous leaders, including Clayton Thomas-Müller, activist, author, and member of the Mathias Colomb Cree Nation in northern Manitoba, who describes redwashing as “an attempt by a corporation to paint itself as ‘benevolent’...the process of covering up the detrimental effects of corporate initiatives with friendly slogans and lump sum donations to Indigenous communities.”<sup>141</sup>

Among the effects that redwashing serves to conceal are the particularly detrimental impacts that Indigenous Peoples experience as a result of both fossil-fuel-driven climate change and fossil fuel extractivism. According to a recent report from Indigenous Climate Action, climate change is now posing a “significant threat to Indigenous peoples’ food security and food sovereignty; and Indigenous peoples’ rights to self-determination.”<sup>142</sup> Indigenous communities are also more likely to experience displacement as a result of melting permafrost and flooding, forest fires, and other extreme weather events intensified by fossil-fuel-driven climate change, while the legacies of colonial rule can negatively impact Indigenous communities’ capacity to protect their people and their lands and waters (see Appendix 1), a fact that the IPCC now recognizes.<sup>143</sup> Moreover, the fossil fuel industry is itself frequently complicit in alienating Indigenous peoples from their lands and waters by expanding their operations on Indigenous lands without the free, prior and informed consent of Indigenous peoples.<sup>144</sup>

In our examination of industry-funded environmental and energy education organizations, we

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<sup>140</sup> Robert Houle, *Redwashing Extraction: Indigenous Relations at Canada’s Big Five Banks*, Yellowhead Institute, August 2022: 4, [https://yellowheadinstitute.org/wp-content/uploads/2024/01/Redwashing-Extraction-YI-Special-Report-8.22-2\\_compressed-1.pdf](https://yellowheadinstitute.org/wp-content/uploads/2024/01/Redwashing-Extraction-YI-Special-Report-8.22-2_compressed-1.pdf).

<sup>141</sup> Clayton Thomas-Müller, “We need to start calling out corporate ‘redwashing,’” CBC, March 20, 2017, <https://www.cbc.ca/news/opinion/corporate-redwashing-1.4030443>. See also: Rob Millington et al., “‘Calling out’ corporate redwashing: the extractives industry, corporate social responsibility and sport for development in indigenous (*sic*) communities in Canada,” *Sport in Society* 22, no. 12 (February 1, 2019): 2122–40, <https://doi.org/10.1080/17430437.2019.1567494>.

<sup>142</sup> Indigenous Climate Action, *Indigenous Peoples’ Meeting on Climate Change, Executive Summary*, Indigenous Climate Action, 2017: 3, <https://static1.squarespace.com/static/5e8e4b5ae8628564ab4bc44c/t/6335aa3ca4e8ff7c6b616fa9/1722440188718/Indigenous+Peoples+Meeting+on+Climate+Change.pdf>.

<sup>143</sup> Yessenia Funes, “Yes, Colonialism Caused Climate Change, IPCC Reports,” *Atmos*, April 4, 2022, <https://atmos.earth/ipcc-report-colonialism-climate-change/>.

<sup>144</sup> Jen Gobby and Lucy Everett, “Policing Indigenous Land Defense and Climate Activism: Learnings from the frontlines of pipeline resistance.” In *Enforcing Ecocide: Power, Policy and Planetary Mobilization*, Cham, Springer International Publishing, 2022: 89 - 121; Nicholas Kusnetz, “The Deep Toll of Tar Sands on Indigenous People,” *Undark Magazine*, November 22, 2021. <https://undark.org/2021/11/22/ecocide-tar-sands/>; Jen Gobby, Leah Temper, Matthew Burke, and Nicolas von Ellenrieder. “Resistance as governance: transformative strategies forged on the frontlines of extractivism in Canada.” *The Extractive Industries and Society* 9 (2022): 100919. <https://doi.org/10.1016/j.exis.2021.100919>

found a range of materials and initiatives that could be viewed as examples of redwashing—and, by extension, of petro-pedagogy—in that they uncritically laud the oil and gas industry as a benevolent supporter of Indigenous Peoples and omit any mention of climate-related harms to Indigenous communities. These materials also efface the history of Indigenous resistance to fossil fuel projects.

The strategy of painting the fossil fuel industry as a supporter of Indigenous Peoples had its origins in the fossil fuel industry's response to Indigenous opposition to fossil fuel extractivism. In the 2010s, the mobilization of the Idle No More movement against oil sands expansion and their call for greater recognition of Indigenous rights and sovereignty drew national and international attention, prompting industry leaders to turn to a pro-industry think tank, the MacDonald Laurier Institute, to develop a response. As researcher Geoff Dembicki has documented, the Institute proposed, first, that “companies and governments ... make First Nations ‘equity partners’” in extractive projects,” and second, that “security forces ... employ counterinsurgency tactics against Indigenous protesters.”<sup>145</sup> Accordingly, industry began sending company representatives to Indigenous communities to promote partnerships and sponsorship initiatives, emphasizing the economic, employment and educational opportunities, while Indigenous Peoples resisting extraction projects found themselves facing increasingly militarized force.<sup>146</sup>

For the fossil fuel industry, this strategy offers a means of addressing the obstacle that Indigenous people's sovereignty over their land poses to the industry's interests in gaining access to oil and gas resources on those territories. The strategy has had some success. Some Indigenous nations have entered into partnerships and agreements with oil and gas companies and secured economic benefits. Other Indigenous leaders have been critical of such arrangements. Writer and scholar Lana Ray, Opwaaganasiniing, Red Rock Indian Band in Northwestern Ontario, argues that “corporate donations serve as an effective public relations campaign, wherein corporations who violate Indigenous Peoples and lands are reimagined as generous benefactors within the reconciliation movement,” while Indigenous Peoples who resist extractivism are “painted as unreasonable and violent in their efforts to protect land and water.”<sup>147</sup> Eriel Deranger, Athabasca Chipewyan First Nation, Treaty 8, and Executive Director of Indigenous Climate Action points to how the strategy has created division within Indigenous communities. She describes the monetary relationship between Indigenous communities and the oil and gas industry as an “economic hostage situation,” explaining that “many communities see the negative impacts of oilsands development but don't speak up because there are no other economic opportunities.”<sup>148</sup> Across Indigenous territories, there is now a complex “diversity of

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<sup>145</sup> Geoff Dembicki, “How Canada Uses ‘Redwashing’ to Crack down on Indigenous Pipeline Protesters,” *Drilled*, August 28, 2023, <https://drilled.media/news/canada-redwashing>; Michael Fisher, “Macdonald-Laurier Institute,” *DeSmog*, n.d., <https://www.desmog.com/macdonald-laurier-institute/>.

<sup>146</sup> Jen Gobby and Lucy Everett, “Policing Indigenous Land Defense and Climate Activism: Learnings from the Frontlines of Pipeline Resistance in Canada,” In Alexander Dunlap and Andrea Brock, A. (eds.), *Enforcing Ecocide: Power, Policing and Planetary Militarization* (Palgrave Macmillan, Cham: 2022), [https://doi.org/10.1007/978-3-030-99646-8\\_4](https://doi.org/10.1007/978-3-030-99646-8_4); Jaskiran Dhillon and Will Parrish, “Exclusive: Canada Police Prepared to Shoot Indigenous Activists, Documents Show,” *The Guardian*, December 20, 2019, <https://www.theguardian.com/world/2019/dec/20/canada-indigenous-land-defenders-police-documents>.

<sup>147</sup> Lana Ray, Tabitha Robin, Kristin Burnett, and Barbara Parker, “Can You Do Good Work in Indigenous Communities with Bad Money?” *Briarpatch*, October 29, 2021, <https://briarpatchmagazine.com/articles/view/can-you-do-good-work-in-indigenous-communities-with-bad-money>.

<sup>148</sup> Amanda Stephenson, “First Nations in the Oilsands Hope Trans Mountain Will Be Catalyst for a New Chapter,” CBC, April 30, 2024, <https://www.cbc.ca/news/canada/edmonton/first-nations-in-the-oilsands-hope-trans-mountain-will-be-catalyst-for-a-new-chapter-1.7189044>. See

economic realities, priorities and opportunities,” with Indigenous Peoples pursuing different paths, with some involved in fossil fuel production, others leading renewable energy projects, and others maintaining resistance to pipelines and fossil fuel expansion.<sup>149</sup>

This report does not dismiss Indigenous Peoples’ right to determine how to undertake economic development in their own communities as they recover from generations of colonial oppression. Our concern, rather, is with oil and gas industry involvement in education relating to Indigenous Peoples and how this involvement serves industry interests by obscuring the harms caused by the industry, including the harms of climate change. There is considerable variation in how education organizations include Indigenous People’s perspectives, but in all cases, we found that steps toward inclusion stop short of including Indigenous perspectives critical of the fossil fuel industry or colonialism more broadly.

## **I. Oil and Gas Industry Involvement in Education Programs for Indigenous Peoples**

The oil and gas industry’s involvement in education programs intended for Indigenous Peoples is extensive and varied. In our web search, we identified three different kinds of initiatives:

- scholarships and awards
- programs that promote fossil fuel jobs to students
- traditional cultural programming for students through third-party providers.

Across all these initiatives the fossil fuel industry frequently makes use of Indigenous art and/or languages in their promotional materials.

### **i. Scholarships and Awards**

Numerous oil and gas companies provide awards to students from First Nations communities, especially communities near extraction sites. Most awards are directed towards post-secondary students, but many of these are advertised to high school students, and there are also specific awards offered to high school students.

- Suncor offers the “Petro-Canada award for Indigenous students”—a \$750 bursary provided to Indigenous youth to help with costs associated with attending high school. To be eligible students must come from “communities with formalized Petro-Canada relationships.”<sup>150</sup>

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also: Eriel Tchekwie Deranger, “The Climate Emergency & the Colonial Response,” Yellowhead Institute, July 2, 2021, <https://yellowheadinstitute.org/2021/07/02/climate-emergency-colonial-response/>; Lori Waller, “Experts to MPs: Canada must stop funding fossils,” *Above Ground*, April 8, 2024, <https://aboveground.ngo/experts-to-mps-canada-must-stop-funding-fossils/>.

<sup>149</sup> Bridget Doyle, Dean Jacobs, and Cory Jones, *Decarbonizing Electricity and Decolonizing Power: Voices, Insights and Priorities from Indigenous Clean Energy Leaders*, David Suzuki Foundation, Clean Power Pathways, and Neegan Burnside, May 2022: 8, <https://david Suzuki.org/wp-content/uploads/2022/05/DSF-CPP-Indigenous-Engagement-Report-2022.pdf>.

<sup>150</sup> Indspire, “Petro-Canada™ – Indspire Funding,” Indspirefunding.ca, 2024, <https://indspirefunding.ca/petro-canada/>.

- TC Energy offers the TC Energy Indigenous Legacy Scholarship to senior high school students who live near extraction projects, for use in their post-secondary education. TC Energy investments in Indigenous education are extensive. A blog post boasts that in 2020 the company invested more than \$8.8 million “in over 600 Indigenous partners and students across North America.”<sup>151</sup>
- Imperial Oil offers several scholarships to Indigenous students, including a “Billion Barrel Scholarship” to students at Lakeland High School “to commemorate one billion barrels of oil production at Cold Lake.” These scholarships are offered for post-secondary education, with preference given to students entering programs “that support the petroleum industry.”<sup>152</sup>

## ii. Programs That Promote Fossil Fuel Jobs to Students

Many oil and gas companies and industry-funded education organizations promote programs that direct Indigenous students toward industry jobs. For example:

- ATCO runs the ATCO Explore Program for Indigenous students Grades 10–12 in Alberta. The program promises to “inspire Indigenous students through career exploration opportunities” and help students “learn first-hand about the exciting career opportunities available with ATCO.”<sup>153</sup>
- Shell is among the top sponsors for the nonprofit Indspire, alongside Cenovus and Syncrude/Shell.<sup>154</sup> Shell supports a career conference held by Indspire called “Soaring: Indigenous Youth Empowerment Gathering.” Advertised on Shell’s website, the conference is billed as bringing “high school students and industry experts together by connecting them with sponsors to learn about a myriad of career and post-secondary education options.” Students participate in interactive workshops, learn about career opportunities and financial support, and meet with industry experts.<sup>155</sup>
- MEG Energy supported a Summer Science Camp that encouraged Indigenous high school students to consider careers in science, tech, and engineering in Alberta.<sup>156</sup>

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<sup>151</sup> “TC Energy Indigenous Legacy Scholarships,” Government of Canada, Indigenous Services Canada, 2017, <https://www.sac-isc.gc.ca/eng/1488208313217/1488208316628>; “The Power of Education,” TC Energy, 2019, <https://www.tcenergy.com/stories/2021/2021-08-26the-power-of-education/>.

<sup>152</sup> “Indigenous Internship and Scholarship Programs,” Imperial Oil, 2019, <https://www.imperialoil.ca/careers/careers/indigenous-internship-and-scholarship-programs#Internshipopportunities>; Imperial Oil, Billion Barrel Scholarship, <https://www.imperialoil.ca/-/media/imperial/files/careers/billion-barrel-scholarship-one-pager.pdf>.

<sup>153</sup> “Indigenous Relations: Education & Training,” ATCO, 2024, [https://www.atco.com/en-ca/our-commitment/indigenous-relations/education.html?utm\\_source=google&utm\\_medium=paid&utm\\_campaign=IEA-II&gad\\_source=1&gclid=Cj0KCQjwZK1BhDuARIsAAy2VzuktRwliTPjRoIMVQYpu6hDiViDhrl\\_1bCy0zfWfs6CKZLfvax7w\\_YaAmuZEALw\\_wcB](https://www.atco.com/en-ca/our-commitment/indigenous-relations/education.html?utm_source=google&utm_medium=paid&utm_campaign=IEA-II&gad_source=1&gclid=Cj0KCQjwZK1BhDuARIsAAy2VzuktRwliTPjRoIMVQYpu6hDiViDhrl_1bCy0zfWfs6CKZLfvax7w_YaAmuZEALw_wcB).

<sup>154</sup> “Sponsors,” Indspire, 2024, <https://indspire.ca/supporters/sponsors/>

<sup>155</sup> Indspire, “Indspire,” Shell, 2020, [https://www.shell.ca/en\\_ca/shell-in-the-community/communities/indspire.html](https://www.shell.ca/en_ca/shell-in-the-community/communities/indspire.html).

<sup>156</sup> Andrea Ranson, “MEG Energy Summer Science Camp,” Mount Royal University, Mtrojal.ca, 2015, <https://www.mtrojal.ca/Summit/megenergy.htm>.

- Suncor partners with CAREERS, a foundation for youth jobs, to provide “paid work experience opportunities to support Indigenous youth from grades 10–12 in Alberta.”<sup>157</sup>

### iii. Traditional Cultural Programming for Indigenous Students Through Third-Party Providers

We found several instances of oil and gas company sponsorship of cultural programming for Indigenous students via third-party providers. For example:

- In 2023, Enbridge provided \$100,000 to the STEM nonprofit Actua to run five camps for Indigenous students. Enbridge advertises its support for these programs on its website with the statements that, “Learning on the land through observation, storytelling, direct participation and through ceremony has always been the way of teaching in Indigenous communities,” and that aligning this “local knowledge with modern-day STEM teachings is exactly the aim of the Indigenous Youth in STEM program (InSTEM) from Actua.” In addition, Enbridge supported the development and distribution of “at-home cultural STEM kits” during the pandemic.<sup>158</sup>
- Suncor funds Youth Fusion, an education charity in Québec and Ontario that works with rural, urban and Indigenous students. Suncor’s logo is on the program description for Science of the Land, a program developed in collaboration with community Elders that combines “hands-on scientific activities with traditional and cultural activities relating to the territory.”<sup>159</sup>

In highlighting these programs for Indigenous youth, we are not suggesting that these programs don’t offer potentially valuable learning opportunities; rather, our concern is with how the oil and gas industry appears to use these programs to present themselves as supporters of Indigenous youth and, in so doing, deflect criticism and buttress their social license to operate. Note that many of the oil and gas companies that offer educational opportunities or programs to Indigenous youth have been the target of Indigenous opposition to oil and gas operations. First Nations across Turtle Island have mobilized against Enbridge pipelines; Wet’suwet’en land defenders under their hereditary chiefs continue to resist TC Energy’s Coastal Gas Link pipeline; and members of Cold Lake First Nation are raising concerns about a carbon capture and storage project being planned by the Pathways Alliance. A great many oil and gas companies offer such programs.<sup>160</sup> A report from Canadian Association of Petroleum Producers (CAPP) titled *Indigenous*

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<sup>157</sup> “Indigenous Student Programs,” Suncor, 2024, <https://www.suncor.com/en-ca/careers/students-and-new-grads/indigenous-student-programs>.

<sup>158</sup> “For Schools,” Enbridge.com, 2024, <https://www.enbridge.com/projects-and-infrastructure/public-awareness/for-schools>.

<sup>159</sup> “Science of the Land – Youth Fusion,” fusionjeunesse.org, 2024 <https://fusionjeunesse.org/en/science-and-engineering/science-of-the-land/>; “Partenaires – Fusion Jeunesse,” 2024, <https://fusionjeunesse.org/qui-sommes-nous/partenaires/>.

<sup>160</sup> Alleen Brown, “Pipeline Giant Enbridge Uses Scoring System to Track Indigenous Opposition,” *The Intercept*, January 23, 2022, <https://theintercept.com/2022/01/23/enbridge-pipeline-line-3-tracking-indigenous-protesters/>; Lysanne Louter, “Amnesty Report Tracks Years-Long Campaign of Criminalization, Unlawful Surveillance against Wet’suwet’en Land Defenders,” Amnesty International Canada, December 11, 2023, <https://amnesty.ca/press-releases/wetsuweten-report-2023/>; Paula Duhatschek, “‘They’re Ramming It down Our Throats,’ Cold Lake First

*Engagement and ESG Report* highlights the work of several oil and gas corporations now funding Indigenous education and scholarship initiatives.<sup>161</sup> The ubiquity of the practice shows just how important these initiatives are to crafting the image the industry seeks to project as a benevolent corporate actor.

#### **iv. Industry-Funded Educational Resources About Indigenous Peoples and Indigenous Perspectives**

In addition to investing in education programs for Indigenous youth, many industry-funded environmental education nonprofits have developed educational materials about Indigenous Peoples for non-Indigenous audiences. The inclusion of these materials in nonprofit educational programming is part of a larger move within education systems to develop curricula relating to Indigenous Peoples in response to the recommendations of the Truth and Reconciliation Commission. Typically, they are provided under the banner of “including Indigenous perspectives” or “incorporating Indigenous ways of knowing.” There is considerable variation in these materials, but we did not find any instances where industry-funded organizations acknowledged Indigenous resistance to the fossil fuel industry, or colonial extractivism, or the industry’s complicity in land alienation.<sup>162</sup>

The following are a few examples of industry-funded education nonprofits that show the range of ways in which Indigenous Peoples and perspectives are presented:

- **Let’s Talk Science** provides a number of lessons and resources on “Utilizing Indigenous Ways of Knowing” in the classroom, and their website makes a point of noting the vastness and complexity of Indigenous peoples’ (*sic*) knowledge systems, while exploring how these knowledges have been developed through close observation and experience, and passed on through stories, art, and languages.<sup>163</sup> Notably, Let’s Talk Science includes an essay on the importance of “Two-eyed seeing,” by Tammy Webster, Let’s Talk Science Director of Equity and band member of Kitigan Zibi Anishinabeg, in which she directly states that “a western view of Indigenous people has attempted to extinguish our knowledge and ways of existing.”<sup>164</sup> In addition, the organization notes its commitment to developing an Indigenous strategy with “input from our National Indigenous Advisory Circle, along with the wisdom of Knowledge Keepers and relationships with Indigenous

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Nation Chief Says of Pathways Carbon Capture Project,” CBC, September 13, 2023, <https://www.cbc.ca/news/canada/calgary/they-re-ramming-it-down-our-throats-cold-lake-first-nation-chief-says-of-pathways-carbon-capture-project-1.6964936>.

<sup>161</sup> Canadian Association of Petroleum Producers (CAPP), *Indigenous Engagement and ESG Report*, CAPP: 2021, <https://www.capp.ca/wp-content/uploads/2024/01/Indigenous-Engagement-and-ESG-Report-397763.pdf>.

<sup>162</sup> For an excellent introduction to the topic of Indigenous and decolonizing perspectives on education, see Linda T. Smith, E. Tuck and K. W. Yang, (eds.), *Indigenous and Decolonizing Studies in Education* (New York, NY: Routledge, 2018).

<sup>163</sup> “Weaving Indigenous Knowledge with STEM Programs and Resources,” Let’s Talk Science, 2024, <https://letstalkscience.ca/educational-resources/weaving-indigenous-knowledge-stem-programs-and-resources>; “Seeing the World in New (Old) Ways,” Let’s Talk Science, July 24, 2024, <https://letstalkscience.ca/news-media/seeing-world-in-new-old-ways>.

<sup>164</sup> Tammy Webster, “Reconciliation through STEM Education,” Let’s Talk Science, September 20, 2021, <https://letstalkscience.ca/about-us/news-and-media/reconciliation-through-stem-education>.

organizations.”<sup>165</sup> In this case, the inclusion of these resources and statements points to a good-faith commitment to this work that suggests the future possibility of more critical engagement.

- **Notice Nature** includes an Indigenous Culture Resource Links page that includes links to various activities such as “Make Bannock,” from Farm & Foodcare Saskatchewan, an agricultural industry website; a “Plant a 3 Sisters Garden” activity from Parks Canada; a “Learn Cree” website from Lac La Ronge Indian Band and links to various cultural centres or sites “dedicated to First Nations culture or history.” These links include both settler- and Indigenous-created resources, but Indigenous perspectives are largely compartmentalized and critical Indigenous perspectives are not presented.<sup>166</sup>
- **Earth Rangers** includes a unit on Aboriginal Traditional Knowledge or “ATK” in which students are invited to participate in a “Mission” using the Earth Rangers App. The game includes elements of what are presented to children as ATK—an Elder, a story, an animal symbol. Colonial stereotyping is evident in a short video which depicts Indigenous cultures by combining a totem pole (Pacific Northwest coastal Indigenous cultures) surrounded by tipis (Plains cultures). Students are also asked to “channel their inner artist to share the knowledge of an elder” by thinking about what noble characteristics different animals represent, giving as an example the idea that an orca represents compassion. In this case, what is being presented to children and educators as inclusion of Indigenous knowledge serves to reinforce reductive stereotypes and arguably promote practices of cultural appropriation.<sup>167</sup>

Industry-funded organizations display a range of approaches to including Indigenous perspectives in education resources. Yet, except for the statement by Tammy Webster, we did not find any statements or resources that addressed Indigenous people’s experiences of colonialism, or their efforts to defend their sovereignty and protect their lands and waters from colonial extractivism. The omission of these perspectives from the educational resources of industry-funded organizations precludes discussion of the environmental and climate impacts of fossil fuelled colonial capitalism on Indigenous lives and, in this way, ultimately works to protect the interests of the fossil fuel industry.

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<sup>165</sup> “Equity,” Let’s Talk Science, 2023, <https://letstalkscience.ca/about-us/equity>.

<sup>166</sup> “Indigenous Culture Resource Links,” Notice Nature, accessed December 2, 2024, <https://www.noticenature.ca/activities-resources/passport-resources/indigenous-culture>.

<sup>167</sup> “ATK in Action Mission Page,” Earth Rangers, December 16, 2019, <https://www.earthrangers.com/EN/CA/atk-in-action-mission-page/>.

## 2E. Focusing on Individual Actions

While redwashing and greenwashing cast the oil and gas industry as supportive of Indigenous Peoples and environmental action, another petro-pedagogy strategy—focusing on individual environmental actions—has almost the opposite effect: it disappears the industry from discussions about climate action altogether. As Eaton and Day have argued, focusing on individual actions to address climate change “insulate[s] fossil fuel industries from criticism” and dissuades students from considering systemic climate solutions and the need for a rapid transition off fossil fuels. The focus on individual action, over collective or government action, has also been identified as a key strategy in “discourses of delay.”<sup>168</sup>

For the oil and gas industry, promoting the message that individual consumers, not the industry itself, are responsible for carbon emissions has proved a winning strategy. As early as the 1970s, ExxonMobil was using rhetoric aimed at shifting “responsibility for global warming away from the fossil fuel industry and onto consumers.<sup>169</sup> Then, in the early 2000s, a public relations firm hired by British Petroleum (BP) to manage the company’s reputation developed the individual carbon footprint calculator and promoted it as a way for individuals to calculate the emissions resulting from their own activities and consumption choices.<sup>170</sup> The calculator, and the concept of the individual carbon footprint itself, were quickly popularized.<sup>171</sup> For the industry, the concept of the personal carbon footprint reinforces the message that individual consumers, not corporations, are primarily responsible for greenhouse gas emissions—even though the opposite is in fact the case: corporations are by the far the largest emitters, with BP, ExxonMobil, Shell and Chevron leading the way.<sup>172</sup> In this respect, as Geoffrey Supran and Naomi Oreskes have pointed out, the oil and gas industry’s strategy of blaming individual consumers rather than corporations mimics the “tobacco industry’s documented strategy of shifting responsibility away from corporations—which knowingly sold a deadly product while denying its harms—and onto consumers.”<sup>173</sup>

In environmental education organizations, particularly those funded by industry, this messaging strategy is ubiquitous. In their research on environmental education organizations in Saskatchewan, Eaton and Day found that all the groups that they surveyed “consistently profiled individual environmental actions as adequate and appropriate responses to a host of environmental and energy issues.”<sup>174</sup> We have found the same in our own non-exhaustive web search of resources provided by industry-funded educational organizations.

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<sup>168</sup> Lamb et al., “Discourses of Climate Delay.”

<sup>169</sup> Geoffrey Supran and Naomi Oreskes, “Rhetoric and frame analysis of ExxonMobil’s climate change communications,” *One Earth* 4, no. 5 (2021): 696, [https://www.cell.com/one-earth/fulltext/S2590-3322\(21\)00233-5](https://www.cell.com/one-earth/fulltext/S2590-3322(21)00233-5).

<sup>170</sup> Kate Yoder, “Footprint Fantasy: Is it time to forget about your carbon footprint?” *Grist*, August 26, 2020, <https://grist.org/energy/footprint-fantasy/>.

<sup>171</sup> NPR, “How Big Oil helped push the idea of a ‘carbon footprint,’” NPR Illinois, December 18, 2023, <https://www.nprillinois.org/2023-12-18/how-big-oil-helped-push-the-idea-of-a-carbon-footprint>.

<sup>172</sup> Cassandra Roxburgh, “Individuals Are Not to Blame for the Climate Crisis,” *YES!* magazine, January 31, 2022, <https://www.yesmagazine.org/environment/2022/01/31/climate-change-fossil-fuel-industry-individual-responsibility>; Tess Riley, “Just 100 Companies Responsible for 71% of Global Emissions, Study Says,” *The Guardian*, July 10, 2017, <https://www.theguardian.com/sustainable-business/2017/jul/10/100-fossil-fuel-companies-investors-responsible-71-global-emissions-cdp-study-climate-change>.

<sup>173</sup> Supran and Oreskes, “Rhetoric and frame analysis,” 696.

<sup>174</sup> Eaton and Day, “Petro-pedagogy”: 464.

The following are just a few examples:

- Shell sponsored the Classroom Energy Diet Challenge program from Canadian Geographic for over a decade until 2022. This program encouraged students to measure and reduce their own carbon footprint through individual actions. Shell, meanwhile, is planning on developing over 800 new oil and gas fields.<sup>175</sup>
- The industry-funded organization Earth Rangers has a unit that encourages students to replace incandescent bulbs with energy-efficient ones and take a picture of this action to share on social media. The unit includes the message: “Using less energy means releasing less greenhouse gas emissions, which means you’re helping to fight climate change, right from home! You’re one step closer to being a climate-change-fighting scientist, like the ones who are attending COP26 this year!” Here, the message conflates individual action with global policy change while omitting any reference to the industry that is most responsible for greenhouse gas emissions.<sup>176</sup>
- Earth Rangers also has a module on individual carbon footprints that it provides through its Project 2050 program. The module encourages students to “shop local,” “bundle up,” and “turn it off” to reduce electricity usage. The fact that the energy sector is high-emitting is noted, but any criticism of the industry is deflected by statements such as, “The energy industry is really important for Canada’s economy. It helps make money and creates jobs.”<sup>177</sup>
- Let’s Talk Science, which is funded by seven fossil fuel companies, provides a module on climate change for Earth Month which describes the devastating impacts of climate change on human societies and ecosystems and then lists a series of individual consumer actions under the title “What You Can Do.” These include: “Conserve Energy at Home,” “Eat Your Vegetables,” “Use Your Car Less,” “Switch to an Electric Vehicle,” and “Consider Different Travel Options.” The focus on personal actions places the responsibility for addressing climate change on individual consumers rather than on the companies driving the crisis. No mention is made of the need to transition off fossil fuels and the collective action or policies required for such a transition.<sup>178</sup>
- Canadian Parks and Wilderness Society, which is funded in part by FortisAlberta, provides a “carbon footprint craft” for children which “introduces students to climate change and its causes, as well as how individuals are contributing to it. It ends with self-reflection on how

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<sup>175</sup> Canadian Geographic, Shell, “Classroom Energy Diet Challenge: A Green-Powered Canada,” <https://cge-media-library.s3.ca-central-1.amazonaws.com/wp-content/uploads/2022/08/03110004/SHE-CEDC-GreenPowered-Lesson-Plan-EN.pdf>; “Classroom Energy Diet Challenge – Classroom Challenges,” Cangeoeducation.ca, 2022, <https://cangeoeducation.ca/en/resources/cedc-classroom-challenges/>; “New Report Exposes Shell’s Oil and Gas Expansion Despite Court Rulings,” Oil Change International, March 17, 2024, <https://oilchange.org/news/new-report-exposes-shells-oil-and-gas-expansion-despite-court-rulings/>.

<sup>176</sup> Earth Rangers, “Eco-Activity: Lightbulb Switcheroo!” Earth Rangers, March 9, 2021, <https://www.earthrangers.com/EN/CA/eco-activities/eco-activity-108-lightbulb-switcheroo/>.

<sup>177</sup> Earth Rangers, “Carbon Footprint and Climate Challenge,” September 2023, <https://homeroom.earthrangers.com/wp-content/uploads/2023/09/Carbon-Footprint-and-Climate-Change-CND-EN.pdf>.

<sup>178</sup> “Earth Month: Climate Change,” Let’s Talk Science, April 6, 2022, <https://letstalkscience.ca/educational-resources/backgrounders/earth-month-climate-change>.

students can reduce their own impacts.” Again, the focus is on students’ own contributions to emissions, not those of the oil and gas industry.<sup>179</sup>

In our research, we did not find a single industry-funded environmental education program that focused on the primary solution to the climate crisis: the rapid transition from fossil fuels to renewable energy.

Focusing on individual actions as a primary response to addressing the climate crisis is problematic on a number of counts:

- It obscures the responsibility of the largest emitters: the oil and gas industry.
- It falsely implies that climate change can be adequately addressed by changes in personal consumption habits when, in fact, system-wide changes are required in order to transition away from fossil fuels and secure a climate-safe future.<sup>180</sup>
- It disempowers students by restricting their “imagination of possible climate solutions to individual acts of conservation that fail to challenge the structural growth of fossil fuel production and consumption.”<sup>181</sup>
- It encourages students to see themselves primarily as consumers, not citizens or community members who can effect collective change.
- It can exacerbate youth climate anxiety by making students feel personally responsible for fixing the global threat of accelerating climate change. In her study of youth activists, Maria Vamvalis found that the “individual framing of climate action added to feelings that ‘fixing’ such complex and overwhelming challenges was solely on their shoulders.”<sup>182</sup>

All of this is not to say that individual actions don’t matter. Teaching about the difference an individual can make can buoy students and encourage feelings of agency, but this should not come at the expense of teaching about systemic change. As William Lamb and others have argued, a more productive approach to discussing individual action would focus on “the collective potential of individual actions to stimulate normative shifts and build pressure towards regulation.”<sup>183</sup> And any discussion of individual action should be framed within larger conversations about how existing systems shape and constrain the choices presented to us and why system-wide change is necessary to effect the transition off fossil fuels and ultimately stop climate change. Here, inspiring examples of structural change from Canada and other parts of the world at the local, regional, and national level would be especially valuable. Students and educators need to know that the transitions are underway.

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<sup>179</sup> “Carbon Footprint Craft,” CPAWS Southern Alberta, February 5, 2024, <https://cpaws-southernalberta.org/education-program/carbon-footprint-craft/>; “About,” CPAWS Southern Alberta, May 13, 2019, <https://cpaws-southernalberta.org/about/>.

<sup>180</sup> Eaton and Enoch, *Crude Lessons*: 13–14.

<sup>181</sup> Eaton and Day, “Petro-pedagogy”: 457.

<sup>182</sup> Maria Vamvalis, “‘We’re fighting for our lives’: Centering affective, collective and systemic approaches to climate justice education as a youth mental health imperative,” *Research in Education* 117, no. 1 (2023): 88–112, <https://doi.org/10.1177/00345237231160090>.

<sup>183</sup> Lamb et al., “Discourses of Climate Delay,” 3.

## 2F. Techno-Optimism

Techno-optimism is another narrative strategy favoured by the oil and gas industry that has made its way into industry-funded environment and energy education resources. Techno-optimism, as John Barry writes, is the “unwarranted belief in human technological abilities to solve problems of unsustainability while minimising or denying the need for large-scale social, economic and political transformation.”<sup>184</sup> Critics of techno-optimism recognize that developments in technology, particularly in relation to renewable energy and energy efficiency, are necessary to addressing the climate crisis. The problem with techno-optimism is the prioritization of technological change over social and systemic change, and the promotion of the view that technology alone will solve climate change. This approach works as another discourse of delay as it serves to undermine the urgency for the energy transition and promotes the false view that we can sustain endless economic growth on a finite planet.<sup>185</sup>

In the hands of the oil and gas industry, techno-optimism focuses on technological solutions that hold out the promise that it is possible to continue burning fossil fuels and reduce the emissions causing climate change. The two technological solutions most favoured by industry in this regard are carbon capture and storage (CCS) and the use of hydrogen as a fuel.

### I. The Promotion of CCS and Hydrogen in Environmental and Energy Education

In our survey of educational materials provided by industry-funded environmental and energy education organizations, we found lessons on both carbon capture and storage and hydrogen. Examples include the following:

- Ten Peaks has a blogpost titled, “What do you need to know about carbon capture?” In it, we learn that while “traditionally, oil and gas companies have contributed to increased CO<sub>2</sub> emissions” which “causes the earth to warm,” students can be reassured that “this is changing thanks to CCUS technologies.” In addition, they provide a “Carbon Capture Deep Dive Lesson” that directs students to several industry or industry-related websites on CCS. These include the Shell website, which correctly cites the IPCC report that implementation of CCS will need to be used as a strategy for reducing carbon in the atmosphere but omits the fact that it is most often used by industry to produce more oil and gas. It also includes a link to a promotional video for the Alberta Trunk Line system that promotes carbon capture as a technological solution to environmental impacts but fails to address its role in maintaining fossil fuel production.<sup>186</sup>

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<sup>184</sup> John Barry, “Bio-fuelling the Hummer? Transdisciplinary Thoughts on Techno-Optimism and Innovation in the Transition from Unsustainability,” In Edmond Byrne, Gerard Mullally and Colin Sage (eds.), *Transdisciplinary Perspectives on Transitions to Sustainability* (Routledge, 2016): 106-123, 106.

<sup>185</sup> Lamb et al., “Discourses of Climate Delay”: 3–4.

<sup>186</sup> “What do you need to know about carbon capture?,” Ten Peaks Innovation, June 25, 2021, <https://www.10peaks.ca/blog/what-do-you-need-to-know-about-carbon-capture>; “Ten Peaks Lesson Resources,” Ten Peaks Innovation, 2019, <https://www.10peaks.ca/learning-library-1/course-materials>; “Discover More about CCS,” www.shell.ca, n.d., [https://www.shell.ca/en\\_ca/about-us/projects-and-sites/quest-carbon-capture-and-storage-project/discover-more-about-ccs.html](https://www.shell.ca/en_ca/about-us/projects-and-sites/quest-carbon-capture-and-storage-project/discover-more-about-ccs.html); Alberta Carbon Trunk Line, “New Carbon Solution in Alberta Delivers Use for Industrial Emissions,” YouTube, June 1, 2020, [https://www.youtube.com/watch?v=b1\\_wnQAXX1g](https://www.youtube.com/watch?v=b1_wnQAXX1g).

- Inside Education directs students interested in carbon capture to the Shell website on the Quest CCS facility operated by Shell Canada on behalf of the Athabasca Oil Sands Project (AOSP). Shell claims that its “priority is to avoid emissions, for example by adopting solutions that are emissions-free when used.” No mention is made of the fact that CCS only captures emissions at production and not the vast majority of emissions which occur when oil and gas are consumed.<sup>187</sup>
- PEEL or People for Environmental and Energy Literacy provides lesson plans on carbon capture and storage in which the industrial carbon capture and storage process is presented as similar to the earth’s carbon cycles, thereby implying that the industrial process is environmentally friendly. They assert that carbon capture can “mitigate CO2 emissions,” but also point out that captured CO2 is used to expand fossil fuel production. The fact that emissions from continued fossil fuel consumption far exceed any emissions captured at production and the impacts this has on climate change are not addressed. PEEL works in partnership with Green Learning Foundation Canada which is sponsored by Suncor and Enmax.<sup>188</sup>
- Let’s Talk Science provides a lesson on carbon dioxide that includes information on carbon capture and storage. The lesson does note that “CCS is not yet commonly used because it is very expensive” but does not provide students with any further information for evaluating the utility of CCS as a solution or the use of funds to support CCS as opposed to other technologies, such as expanding renewable energy, which would have a far greater impact on reducing harmful carbon pollution.<sup>189</sup>
- Inside Education provides a resource on hydrogen as an alternative fuel that “produces energy without releasing greenhouse gases.” Their resource does make the distinction between blue hydrogen, which is produced using fossil fuels, and green hydrogen, which is produced using renewable energy. However, the fact that very little green hydrogen is produced relative to blue hydrogen in Canada is not addressed.<sup>190</sup>
- Ten Peaks provides a video from their 2023 conference for high school students titled, “Hydrogen Panel and Hydrogen for Transportation.” The panellists present hydrogen as a technology that will support the decarbonization of transportation but do not address the problem of carbon emissions from fossil-fuelled hydrogen production. Indeed, they promote the hydrogen industry to students as an industry that will help sustain the fossil fuel industry into the future.<sup>191</sup> (Note: The federal government’s call for more education on

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<sup>187</sup> “Energy Resources,” Inside Education, 2024, <https://www.insideeducation.ca/classroom-field-trips/environmental-innovation-days/regional-agriculture-days-application-form/virtual/generate-virtual/energy-resources/>; “Quest Carbon Capture and Storage,” Shell Canada, n.d., [https://www.shell.ca/en\\_ca/about-us/projects-and-sites/quest-carbon-capture-and-storage-project.html](https://www.shell.ca/en_ca/about-us/projects-and-sites/quest-carbon-capture-and-storage-project.html).

<sup>188</sup> “Lesson Plan 14: Carbon Capture and Storage,” People for Energy and Environmental Literacy, 2014, <https://www.teachpeel.ca/lesson/>; “People for Energy and Environmental Literacy,” People for Energy and Environmental Literacy, 2022, <https://www.teachpeel.ca/>.

<sup>189</sup> “Carbon Dioxide: Outdoors and Indoors,” Let’s Talk Science, June 21, 2024, <https://letstalkscience.ca/educational-resources/backgrounders/carbon-dioxide-outdoors-and-indoors>.

<sup>190</sup> “Renewable and Alternative Energy Labs: Hydrogen,” Inside Education, n.d., [https://www.insideeducation.ca/uploads/source/learning/energy-education-tool-kit/V3\\_2023/Worksheet\\_4- Renewable %26 Alternative Energy - Hydrogen.pdf](https://www.insideeducation.ca/uploads/source/learning/energy-education-tool-kit/V3_2023/Worksheet_4- Renewable %26 Alternative Energy - Hydrogen.pdf).

<sup>191</sup> “Hydrogen Panel Hydrogen for Transportation,” Ten Peaks Innovation, YouTube, November 9, 2023, <https://www.youtube.com/watch?v=QJgfjZIfW6J>; “Ten Peaks Learning Library,” Ten Peaks Innovation, 2019, <https://www.10peaks.ca/learning-library>.

clean fuels, including in K–12 schools, does not include a requirement to educate students on the differences between how hydrogen is produced.)<sup>192</sup>

The educational resources on both CCS and hydrogen are characterized by techno-optimism and can be considered a form of petro-pedagogy in that they present these technological solutions as key to addressing the challenges of climate change and sustainability. Given that these solutions themselves rely on fossil fuels and, in the case of CCS, are used to produce more fossil fuels, this is misleading. This is not to say that there is no role for these solutions, particularly green hydrogen, but students need to understand that addressing the climate crisis requires a rapid transition off fossil fuels and system-wide change—and this will require a focus on proven solutions to cutting emissions such as renewable energy and energy efficiency measures.<sup>193</sup>

A focus on technological solutions more broadly has other problems that need to be considered too. These include the marginalization of Indigenous knowledges that are necessary to developing students' critical understanding of the root causes of climate change and the importance of building respectful and reciprocal relationships with the living world. The narrow focus on technical information and technical solutions can often fail to adequately address students' emotional distress when confronted with the realities of climate change.<sup>194</sup>

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<sup>192</sup> Natural Resources Canada, *Clean Fuels Education and Awareness Scan: Summary of Research Findings*, Natural Resources Canada, December 2022, [https://natural-resources.canada.ca/sites/nrcan/files/Clean\\_Fuels\\_Ed-Awareness\\_Summary\\_ENG%20FINAL\\_\(CLEAN\).pdf](https://natural-resources.canada.ca/sites/nrcan/files/Clean_Fuels_Ed-Awareness_Summary_ENG%20FINAL_(CLEAN).pdf).

<sup>193</sup> International Energy Agency, *The Oil and Gas Industry in Net-Zero Emissions. World Energy Outlook Special Report*, December, 2023, <https://iea.blob.core.windows.net/assets/f065ae5e-94ed-4fcb-8f17-8ceffde8bdd2/TheOilandGasIndustryinNetZeroTransitions.pdf>

<sup>194</sup> Maria Andrée and Lena Hansson, "Inviting the petrochemical industry to the STEM classroom: messages about industry–society–environment in webinars," *Environmental Education Research* 30, no. 5 (2024): 661-676, <https://doi.org/10.1080/13504622.2023.2168623>.

## Chapter 3

# Pushback: Countering Petro-Pedagogy

### Quickview

- Although public awareness of oil-and-gas-industry influence in education is limited, it is growing, especially as the climate crisis itself continues to escalate. This is evidenced by recent campaigns against fossil fuel influence in education.
- A number of youth, Indigenous educators, and teacher groups are developing climate education programs and initiatives that discuss the role of the oil and gas industry in driving climate change, and these resources give examples of climate action that go well beyond individual behavioural change and offer a path to robust climate education.
- Some of these programs include a focus on intersectional approaches to climate justice, with particular attention to decolonization and Indigenous justice. Others demonstrate clarity about the need for urgent action to avoid the worst climate impacts and a concern to engage students in meaningful collective action that attends to their well-being.
- Even while petro-pedagogy in its various forms exerts enormous influence, it is not all encompassing. Research suggests that there is an interest in substantive, comprehensive climate change education.

### 3A. Pushing Back Against the Fossil Fuel Industry: Three Stories

Students, teachers and parents have begun to sound the alarm about the influence of fossil fuel companies in education. Increasingly concerned about the impacts of climate change, they see the presence of the fossil fuel industry in the classroom as a direct conflict with the need for climate education. These concerns have prompted groups and individuals to take action. We share three of these stories below. In each of these examples, when groups or individuals drew critical public attention to oil and gas industry involvement in education, the organizations involved made changes. But these cases also highlight the fact that governments are accountable to the public, whereas corporations and corporate-funded NGOs are not. In two of the three cases, the organizations did not directly address their role in either promoting the oil and gas industry or accepting their involvement. The only exception was the BC Ministry of Education. As a government body charged with preserving the public trust, the Ministry was accountable to the public and responded accordingly. Nonprofits are not held to the same standards of accountability and are answerable not to the public but to their boards, even when their programs are used in public education.

## I. Campaign Against Canadian Geographic's Promotion of Fossil-Fuel Sponsored Education Resources

Over the last decade, Canadian Geographic's support for two education programs funded by the oil and gas industry—the Classroom Energy Diet Challenge sponsored by Shell and Energy IQ sponsored by the Canadian Association of Petroleum Producers (CAPP)—has drawn public criticism. In 2013, over 600 students in Vancouver wrote an open letter to Canadian Geographic calling on them to end their ties to the fossil fuel industry. In 2015, *Canadaland* published an exposé that included a statement from a former Canadian Geographic intern who described how the magazine censored “any story that might go against their oil and gas industry funders.”<sup>195</sup>

### What is Energy IQ?

Developed by Canadian Geographic Education in partnership with the **Canadian Association of Petroleum Producers**, **Energy IQ** delivers information on all types of energy, to increase Canadians' understanding on energy sources and issues. The program is oriented to students and teachers but the website is engaging and factual with loads of videos, slides, factoids and maps. Energy IQ focuses on all forms of energy production, distribution, consumption and conservation, within the larger context of global energy.



In 2022, the issue of *Canadian Geographic's* relationship with the oil and gas industry drew national attention, when over 200 academics from geography departments, together with educators, students, and parents sent an open letter to the Royal Canadian Geographical Society of Canada (RCGS) calling on them to “sever your ties with fossil fuels.”<sup>196</sup>

The signatories were particularly concerned about the pedagogical strategies employed in these industry-funded educational programs, with the Shell Classroom Energy Diet program fostering the notion that individual behavioural change rather than system-wide change is the solution to climate change, and the CAPP program promoting a “balanced approach” and recognition of “the role oil and natural gas play in Canada’s economy.”<sup>197</sup>

<sup>195</sup> Shell Canada Limited, “Shell Canada and Canadian Geographic Bring Back Canadian Energy Diet Challenge,” Newswire.ca (CNW Group, February 5, 2014), <https://www.newswire.ca/news-releases/shell-canada-and-canadian-geographic-bring-back-canadian-energy-diet-challenge-513674661.html>; “RCGS and Can Geo in the Media | Fossil Fuel-Sponsored Curricula in Canadian Classrooms Are at Odds with Commitments to Climate Action,” Blogs.ubc.ca, 2022, [https://blogs.ubc.ca/openletterrgsc/?page\\_id=29](https://blogs.ubc.ca/openletterrgsc/?page_id=29); Jesse Brown, “Oil Sands Lobby Group Sponsored and Edited Public School Lessons,” *Canadaland*, July 22, 2015, <https://www.canadaland.com/oil-sands-lobby-group-sponsored-and-edited-public-school-lessons/>.

<sup>196</sup> “An Open Letter to the Royal Geographical Society of Canada (RGSC): Sever Your Ties with Fossil Fuels,” Blogs.ubc.ca, 2016, <https://blogs.ubc.ca/openletterrgsc/>.

<sup>197</sup> Canadian Association of Petroleum Producers website, 2021, <https://context.capp.ca/energy-matters/2021/energy-iq-continues-advancing-energy-education-with-online-workshops/>. The website has since been removed, but refer to Context Energy Examined image on this page.

As they put it, “Fossil-fuel-sponsored education fails to equip students with the knowledge to address the climate crisis...It has no place in a world on the verge of a climate catastrophe, largely brought on by fossil fuel companies themselves.”

Shortly after the letter campaign, *Canadian Geographic* ended its support for both Energy IQ and the Classroom Energy Diet Challenge.<sup>198</sup>

## II. CAPE Campaign Against FortisBC’s “Energy Leaders” Program in BC Schools

In British Columbia, the Canadian Association of Physicians for the Environment (CAPE), with support from over 100 other organizations, led a campaign calling for the removal of an education program, Energy Leaders, sponsored by the gas company FortisBC, and, more broadly, an end to fossil fuel involvement in education.

This campaign was spearheaded by CAPE physician Dr. Lori Adamson, after she discovered worksheets supplied by FortisBC in her seven-year-old son’s backpack. As an emergency room physician, who had seen the devastating impacts of fossil fuel-driven climate change on the health of her community over the course of the summer—including extreme heat, flooding, and landslides—Adamson was alarmed that an industry driving this crisis was being promoted in her child’s school.

Working with her colleagues at CAPE, Adamson undertook a thorough review of Fortis BC’s Energy Leaders program. They discovered that its 30 learning modules, each with teacher resources, lesson plans, slides, and student worksheets, served to promote and normalize the use of natural gas without discussing the risks to human or planetary health.<sup>199</sup>

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<sup>198</sup> Wendy Stueck, “Education Program Draws Fire for Being Sponsored by Oil Industry Group,” *The Globe and Mail*, November 16, 2013, <https://www.theglobeandmail.com/news/british-columbia/education-program-draws-fire-for-being-sponsored-by-oil-industry-group/article15473139/>.

<sup>199</sup> FortisBC, “FortisBC Adapts Its BC-Based School Program to Support Students Learning from Home,” Newswire.ca, May 6, 2020, <https://www.newswire.ca/news-releases/fortisbc-adapts-its-bc-based-school-program-to-support-students-learning-from-home-856701568.html>.



## EXAMPLES FROM “ENERGY LEADERS” LESSONS

- A Grade 12 science lesson on Workplace Safety under the heading “Career Life Connections” only discusses natural gas safety, how to maintain natural gas meters, how to handle a gas leak, who to “call before you dig,” and how to maintain gas appliances.<sup>200</sup> No mention is made of the health hazards of fugitive emissions, methane discharges, or indoor pollution from gas stoves.
- In Grade 12 Geology, students can play a game called “Natural Gas sequence cards.”<sup>201</sup> The description of hydraulic fracking avoids all mention of the destructive and polluting nature of the process.
- A Grade 5 lesson about the rock cycle does not discuss geology, but instead shows at what depth natural gas is drilled.<sup>202</sup> The text benignly states methane is “pumped” out of the ground, without any mention of the highly destructive process of hydraulic fracturing.

The CAPE team found that FortisBC had promoted their curriculum extensively to teachers at trade shows and through workplace emails, with the result that by the spring of 2020 over 2,000 teachers had downloaded their lesson plans.<sup>203</sup> During the pandemic, FortisBC made their lessons downloadable for free, dramatically expanding their reach.<sup>204</sup> By 2022, parents and teachers had downloaded more than 35,500 lessons and activities from Energy Leaders.<sup>205</sup>

Alarmed by the content and reach of FortisBC’s Energy Leader curriculum, Adamson, CAPE-BC, and a coalition of parents, teachers, students and concerned members of the public mounted a letter campaign calling on the BC Minister of Education, Jennifer Whiteside, to ban fossil-fuel-sponsored curricula from schools.<sup>206</sup> The letter gained the support of more than 100 organizations, including the BC Teachers’ Federation, whose president Teri Mooring declared: “The fossil fuel industry has no place in BC classrooms, especially as we face an unprecedented climate crisis.” Mooring called on the BC government “to work with teachers and invest in

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<sup>200</sup> FortisBC, “Safety: Safety Backgrounder,” 2020. Resource removed from website. Cited in Canadian Association of Physicians for the Environment—BC, Open Letter to Education Minister BC—FortisBC curriculum, <https://docs.google.com/document/d/117z5RUnShVld1o7IRgU59EaiGStjJxFPVrOi6taZNKw/edit?tab=t.0>.

<sup>201</sup> FortisBC, “Earth Materials: Natural Gas Sequence Cards,” 2020. Resource removed from website. Cited in Canadian Association of Physicians for the Environment—BC, “Open Letter to Education Minister BC—FortisBC curriculum,” <https://docs.google.com/document/d/117z5RUnShVld1o7IRgU59EaiGStjJxFPVrOi6taZNKw/edit?tab=t.0>.

<sup>202</sup> FortisBC, “Natural Gas and the Rock Cycle,” 2020. Resource removed from website. Cited in Canadian Association of Physicians for the Environment—BC, “Open Letter to Education Minister BC—FortisBC curriculum,” <https://docs.google.com/document/d/117z5RUnShVld1o7IRgU59EaiGStjJxFPVrOi6taZNKw/edit?tab=t.0>.

<sup>203</sup> CAPE B.C., “Doctors, Educators and Students Call on B.C. Minister of Education.”

<sup>204</sup> FortisBC, “FortisBC Adapts Its BC-Based School Program to Support Students Learning from Home,” Newswire.ca, May 6, 2020, [www.newswire.ca/news-releases/fortisbc-adapts-its-bc-based-school-program-to-support-students-learning-from-home-856701568.html](http://www.newswire.ca/news-releases/fortisbc-adapts-its-bc-based-school-program-to-support-students-learning-from-home-856701568.html).

<sup>205</sup> Stefan Labbé, “Teachers, Doctors Call for Ban on ‘Fossil Fuel Propaganda’ in B.C. Schools,” *Vancouver Is Awesome*, March 2, 2022, <https://www.vancouverisawesome.com/highlights/teachers-doctors-call-for-ban-on-fossil-fuel-propaganda-in-bc-schools-5119332>.

<sup>206</sup> CAPE B.C., “Doctors, Educators and Students Call on B.C. Minister of Education to Ban Fossil Fuel Promotion from Schools,” CAPE, March 2, 2022, [https://cape.ca/press\\_release/ban-fossil-fuel-promotion-in-bc-schools/](https://cape.ca/press_release/ban-fossil-fuel-promotion-in-bc-schools/).

developing unbiased, science-based climate education resources, including training for educators to support this curriculum.” Students also added their voices.<sup>207</sup> Katarina Krivokapic, a Grade 12 student and co-organizer of the Vancouver School Board Sustainability Conference, was emphatic: “Our education system should be providing us with ways to tackle the climate emergency, not making it worse. Programs promoting fossil fuels should not be allowed in our schools.”<sup>208</sup>

In response, Minister Whiteside contacted FortisBC expressing her dismay with the program. FortisBC defended it, saying that they had hired a sustainability education company called Kidnetic to make sure their program was “bias-balanced”—a strategy that ensures the promotion of industry viewpoints and often overlooks the role of fossil fuels in climate change. However, the company subsequently removed the Energy Leaders program from their website.<sup>209</sup> The BC Ministry of Education issued a statement saying that it does not “recommend or authorize the use of resources like FortisBC’s Energy Leaders program” and that “we are reviewing this issue to ensure classrooms are free of corporate priorities, so students can continue to learn in an unbiased environment.”<sup>210</sup> The BC Teachers’ Federation followed up by asking the Ministry to invest in more “appropriately sourced resources or climate education.”<sup>211</sup>

### **III. An Individual Educator’s Resistance to Fossil Fuel Influence at an Environmental Education Organization**

It is rare to find writing from the perspective of individuals who pushed back against industry influence from inside an education organization. However, a personal account by Ellen Field shared with the authors of this report provides insights into some of the ways industry exerts their influence.

From 2017 to 2021, Field was employed by the prominent environmental education organization, Learning for a Sustainable Future (LSF), which until recently received funding from Suncor. While she was at LSF, Field led professional development workshops on climate education, conducted a national survey on student climate literacy through her postdoctoral work, and developed a climate education guide for teachers. In short, her experience and knowledge of the field is extensive. But that did not protect her work from pressure to defer to the interests of fossil fuel companies.

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<sup>207</sup> Michelle Gamage, “Should Fossil Fuel Companies Get to Teach Kids about Climate Change?” *The Tyee*, March 24, 2022, <https://thetyee.ca/News/2022/03/24/Should-Fossil-Fuel-Companies-Teach-Kids-About-Climate-Change/>.

<sup>208</sup> CAPE B.C., “Doctors, Educators and Students Call on B.C. Minister of Education.”

<sup>209</sup> Labbé, “Teachers, Doctors Call for Ban on ‘Fossil Fuel Propaganda.’” For another example, see this report about the Netherlands Minister of Education pushing back on fossil fuel influence in education: “Education Minister Finds Greenwashing ‘Undesirable,’” *Fossil Free Education*, May 20, 2020, <https://fossielvrijonderwijs.nl/2020/05/20/minister-van-onderwijs-vindt-greenwashing-onwenselijk/>.

<sup>210</sup> Michelle Gomez, “Doctors’ Group Wants Educational Materials from Fossil Fuel Companies Kept out of Classrooms,” *CBC News*, March 3, 2022, <https://www.cbc.ca/news/canada/british-columbia/fossil-fuels-classrooms-1.6371770>.

<sup>211</sup> Gamage, “Should Fossil Fuel Companies Get to Teach Kids about Climate Change?”

In 2019, Field was lead author of the report for LSF titled, *Canada, Climate Change and Education: Opportunities for Public and Formal Education*. The night before the report launched, Field received a phone call from LSF's Executive Director asking her to remove a reference to Emily Eaton and Nick Day's article on the fossil fuel industry's influence in education in Saskatchewan, an article, Field notes, that had been published in the top-tiered journal *Environmental Education Research*. As she explains in her account: "I inserted the reference to provide context for the lower levels of climate change understanding in Saskatchewan and qualified it with a brief explanation of the connection to livelihoods based on resource extraction... and did not wade into further analysis of fossil fuel influences in education." However, she said LSF's Executive Director was "adamant it needed to be removed, suggesting it was poorly conducted research and that a Suncor representative on the LSF board would not approve." Unsure of her position, Field relented. At the time she was "a naive researcher and not in a tenure track position."<sup>212</sup>

Field's second experience of interference related to her work on a climate change education guide for LSF entitled *Empowering Learners in a Warming World*. Working with two other authors, Field at Lakehead University was the lead author on the guide. After months of work, the guide was sent to LSF board members to review. In the process of the review, Board members rejected part of an information backgrounder titled "Low Carbon Futures: Economic Transitions, Risks, and Impacts." The section conveyed information about the power of the divestment movement. The Board instead added a new statement suggesting that divestment was only effective for very small institutions. They also added these sentences with a reference to an oil industry report: "The oil industry and current energy infrastructure that exists could be a driver behind clean energy technologies. Energy producers must adapt, innovate and diversify the industry in order to keep up with necessary and significant changes in the way that energy is produced and used (Suncor, 2018)."<sup>213</sup>

Field was not informed that these changes had been made. She only discovered them "after an expert in financial management wrote to LSF about the problematic statement." This expert had himself been asked to write to LSF, "after a team of climate change educators, who were concerned about fossil fuel influence on NGOs, started analyzing climate resources."<sup>214</sup> Alarmed by what she had learned, Field wrote to the LSF senior management and instructed them to change the text back, including the information on divestment. LSF staff refused. After six months, Field decided to remove herself as an author and informed all LSF staff and co-authors of the conflict.

A significant outcome of Field's action in informing LSF staff was that this generated an internal debate that led to LSF removing the fossil fuel representative from the board and issuing a statement saying that they "will not accept funding from the alcohol, tobacco, cannabis,

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<sup>212</sup> Interview with Ellen Field, March 14, 2023

<sup>213</sup> Learning for a Sustainable Future, "6. A Low Carbon Future: Economic Transitions, Risks and Impacts—Empowering Learners in a Warming World," Climatelearning.ca, 2019. Accessed via: <https://web.archive.org/web/20210804162723/https://climatelearning.ca/inquiry-guide/economic-impacts/#Background6>. Current version: <https://climatelearning.ca/inquiry-guide/economic-impacts/#Background6>.

<sup>214</sup> The team of climate change educators included Anne Keary, lead author of this report.

weapons/arms, pornography, coal, oil and gas industries, nor will LSF grant board membership to any representatives of these industries.”<sup>215</sup>

However, her text was never reinserted. It is with regret that Field reports that: “The *Empowering Learners in a Warming World* guide is used extensively by teachers throughout Canada to frame inquiry-based climate change education. The content on economics does not address the many financial mechanisms that can be put in place—including divestment—to help shift our fossil fuel reliant economy to a low carbon economy.”

Field’s report sheds light on the direct and indirect influence exercised by oil and gas industry representatives on the boards of environmental education organizations. It seems in this case that LSF staff were acting, or felt pressured to act, in the interests of the oil and gas industry rather than in the interests of students and educators. However, by notifying LSF staff about what had happened, Field made the influence of the oil and gas industry visible and unignorable.

Field was to lead the second iteration of her Canada-wide study, as part of a \$3.4 million dollar grant with Lakehead as the research partner, but due to these conflicts and the inability to secure an agreement with LSF that guaranteed non-interference in the presentation of the findings, she did not continue with the project.

For her part, Field concludes: “These experiences made it so clear why representatives of the fossil fuel industry should not be allowed to sit on boards of organizations that conduct research in climate education or provide resources in schools. It is a clear and direct conflict of interest.”<sup>216</sup>

### 3B. What Is Possible When Education Is Free from Fossil Fuel Interests

While groups and individuals are pushing back against fossil fuel influence within environmental education nonprofits, youth, Indigenous knowledge-keepers, and other educators have been developing climate change programs and resources. Dissatisfied with the current state of climate change education, and aware of the need for education that is clear about root causes, addresses climate justice, and empowers young people to be agents of change together, their programs show what is possible in the absence of corporate and fossil fuel industry influence.

#### I. Youth-Led Climate Education Initiatives

Many young people who were mobilized by the 2018/2019 youth climate strike movement have taken up the call for improving and expanding climate change education. They have joined and

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<sup>215</sup> “Ethical Funding Statement,” Learning for a Sustainable Future, 2022, <https://lsf-lst.ca/ethical-funding-statement/>.

<sup>216</sup> Interview with Ellen Field, March 14, 2023

developed advocacy campaigns and, in some instances, created their own climate change education materials and programs.

The fact that many young people across Canada have felt the need to develop their own climate change education programs is both a comment on the limited climate change education they have received and a testimony to their leadership, skills, and resourcefulness. The programs and materials they have developed present a direct contrast to the petro-pedagogy messaging too often found in industry-backed environmental education organizations. For example:

- Rather than obscuring the role of the oil and gas industry in driving the climate crisis, youth are calling for honesty and transparency about the role of industry and the need for a rapid transition off fossil fuels.
- Rather than greenwashing the industry as part of the solution or presenting a so-called “bias-balanced” approach that promotes industry perspectives, youth want education on climate justice that tells the truth and centres the voices of those most impacted by fossil fuel-driven climate change.
- Rather than presenting the relationship between industry and Indigenous communities as all positive, youth are pointing to the connections between climate change and colonialism and demanding respect for Indigenous rights and sovereignty.
- Rather than focusing on individual behavioural change, youth are calling for systemic change that includes learning opportunities to help them become active agents of change in their communities, and an approach to education that supports their emotional well-being.

This finding confirms the research of Maria Vamvalis who has written about the school experiences of youth climate activists. As Vamvalis has shown, youth climate activists seek climate education that addresses the issue of climate justice, attends to climate emotions, and provides them with opportunities “to envision what kind of future they would like—a generative, regenerative collective that is community-based.”<sup>217</sup> Some of these initiatives are described below, and many more are included in the Resources chapter.

- The Alberta Youth Leaders for Environmental Education wrote a white paper about the lack of climate education in their province. Their paper concluded with a detailed list of recommendations including that climate change education be “interwoven throughout the entire curriculum.” As the students noted, “Climate change is not just a scientific issue, but an economic, political, health, and socio-cultural issue as well. We need to understand the complexity.”<sup>218</sup>

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<sup>217</sup> Maria Vamvalis, “‘We’re fighting for our lives’: Centering affective, collective and systemic approaches to climate justice education as a youth mental health imperative,” *Research in Education* 117, no. 1 (2023): 88-112, <https://doi.org/10.1177/00345237231160090>.

<sup>218</sup> Jessica Wong, “Climate education is inconsistent across Canada, but these students and educators want to fix that,” CBC, November 5, 2021, <https://www.cbc.ca/news/canada-climate-curriculum-1.6232706>; Alberta Youth Leaders for Environmental and Energy Education, *Supporting Leadership in Environmental, Energy and Climate Education in Alberta Schools: Recommendations by Student Leaders for Alberta’s Educational Leaders* (Alberta Council for Environmental Education, Centre for Global Education, 2020), Accessed via: <https://web.archive.org/web/20210515054909/https://www.abcee.org/sites/default/files/AYLEEEWhitePaper.pdf>.

- A delegation of students from Canada participated in a youth-organized Mock COP 26 in 2021 which drew attention to the need for better climate change education. The students also pointed out the need for Canada to address its role as the home of “the world’s most destructive oil operations, the oil sands.”<sup>219</sup>
- A group of students from John Abbott College in Quebec called for mandatory climate education in both social studies and science across all schools in their province in 2022. In a CBC interview, the students reported that they felt betrayed by the existing education system and the lack of attention to climate change in their courses. As one student explained, this was disappointing “given that climate change is really one of the big challenges that our generation is going to face—that we’re barely learning about it in school.”<sup>220</sup>
- A group of high school students in British Columbia developed a particularly ambitious youth-led campaign for climate change education in 2020: Climate Education Reform BC (CERBC).<sup>221</sup> In an open letter and statement of “Needs” to the BC Ministry of Education, CERBC called for a mandatory K–12 climate curriculum that is comprehensive, interdisciplinary, and intersectional in its approach to climate justice, with a focus on anti-oppression, decolonization, and Indigenous rights and sovereignty. As they outlined it, the reform of the provincial climate curricula should enable students to
  - understand the physical climate system and the causes and effects of climate change;
  - understand the urgency of the climate crisis and the need to act now;
  - understand the political, economic, and sociological aspects of the climate emergency;
  - understand the relationship of social justice issues with climate change and climate solutions;
  - critically engage in politics;
  - feel a stronger connection to the environment through further out of classroom learning;
  - contribute to climate solutions by understanding the types of changes needed and the many ways to be involved to enact those changes;
  - envision a better world, and feel empowered and energized.<sup>222</sup>

Note that CERBC makes a particular point of the need to counter the influence of the fossil fuel industry in education. In their call for the creation of a Community Consultation

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<sup>219</sup> Malaika Collette, “With One Voice: The World’s Youth Speak out in Frustration over Climate Inaction,” *The Globe and Mail*, November 19, 2020, <https://www.theglobeandmail.com/canada/article-with-one-voice-the-worlds-youth-speak-out-in-frustration-over/>.

<sup>220</sup> Ainslie MacLellan, “Quebec Students Feel ‘Betrayed’ by Lack of Climate Education,” CBC, April 22, 2022, <https://www.cbc.ca/news/canada/montreal/quebec-climate-change-education-1.6426387?cmp=rss>.

<sup>221</sup> Climate Education Reform BC, “Home,” Reform To Transform, n.d., <https://www.climateeducationreformbc.ca/>.

<sup>222</sup> Climate Education Reform BC, “Open Letter to Minister Whiteside and the BC Ministry of Education,” Reform To Transform, n.d., <https://www.climateeducationreformbc.ca/open-letter>; Climate Education Reform BC, “Our Needs,” Reform To Transform, 2019, <https://www.climateeducationreformbc.ca/our-needs>.

Committee on curriculum reform, they demand that the committee be independent from “the Ministry of Education’s internal body, as well as fossil fuel companies or those with business risk associated with climate reform, to ensure that calls for necessary change will not be watered down to serve our fossil fuel-driven and dependent society.”<sup>223</sup>

## II. Indigenous-Led Climate Change Education

Indigenous leaders and educators bring a particularly important perspective to climate change education. Their approach centres Indigenous knowledges, emphasizing the need for experiential land-based learning, respect for all living beings, the importance of collective health and well-being over individualism and competition, and attends to the spiritual dimensions of human relations to the more-than-human-world. From this perspective, many Indigenous Peoples view Western colonialism and its underpinning values, practices, and ways of knowing as the root cause of the climate crisis. This analysis of the problem of climate change is not often found in the Indigenous-related educational materials promoted by oil and gas funded educational organizations.<sup>224</sup> Keepers of the Water is one such example.

- Keepers of the Water, established in 2006 at the first Keepers of the Water Gathering in Liidlii Kui, Denendeh/Fort Simpson recognizes the “need to ensure that Water has a voice in the fight against climate change.” Central to their work is the education of Indigenous youth. They run workshops in schools, a youth water protector program, and have organized events to call attention to the “harms that the oil industry in Canada is perpetuating on Indigenous communities and how, together, we can demand justice and change.” Their work centres Indigenous knowledge and rights in an effort to address climate change.<sup>225</sup>

Many First Nations have also developed their own land-based and cultural education initiatives through intergenerational learning on the land. Such programs nurture climate resilience and support Indigenous youth in becoming climate leaders. As a mixed Indigenous and non-Indigenous research team has written, “the connection between land-based learning, climate change, and youth is pivotal in shaping a generation attuned to environmental stewardship” as it immerses young people “in the intricacies of ecosystems,” provides them with a “comprehensive understanding of the immediate impacts of climate change,” and cultivates “a sense of responsibility and urgency to address environmental challenges.”<sup>226</sup> Examples of such programs include:

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<sup>223</sup> Climate Education Reform BC, “Our Needs,” Reform To Transform, 2019, <https://www.climateeducationreformbc.ca/our-needs>.

<sup>224</sup> “Indigenous Knowledges and Climate Change,” Climate Atlas of Canada, July 10, 2019, <https://climateatlas.ca/indigenous-knowledges-and-climate-change>.

<sup>225</sup> “Our Story,” Keepers of the Water, 2014, <https://www.keepersofthewater.ca/our-story>; “Youth Engagement,” Keepers of the Water, 2014, <https://www.keepersofthewater.ca/youth-engagement>.

<sup>226</sup> Prarthona Datta et al., “Youth Response to Climate Change: Learning from Indigenous Land-Based Camp at the Northern Saskatchewan Indigenous, Canada,” *EXPLORE* 20, no. 5 (February 1, 2024): 3, <https://doi.org/10.1016/j.explore.2024.02.003>.

- Kitasoo Xai'Xais First Nation summer education program for youth “incorporates land-based education, cultural knowledge and professional skill development” to connect youth with the land and build leadership and resilience. Through the program, youth learn cultural knowledge “like storytelling, identifying cultural sites and features, information about berry-picking spots, habitation sites, fishing areas, medicinal plants, harvesting seasons and practices.” This program is supporting youth in becoming stewards of the land and community leaders.<sup>227</sup>
- The NunatuKavut Community Council (NCC) community-based climate monitoring project “engages youth as climate change interns in various coastal communities throughout NunatuKavut.” This project draws on both Inuit traditional knowledge and western science to help NunatuKavut communities make “decisions as they face the challenges of climate change.”<sup>228</sup>

A number of First Nations are developing renewable energy projects that fund education programs, support culture restoration, and strengthen climate resilience. These programs provide powerful examples of community energy transitions away from polluting fossil fuels and offer opportunities to link renewable energy initiatives to Indigenous knowledges and values.

- Melina Laboucan-Massimo from the Lubicon Cree community of Little Buffalo in Northern Alberta is a leader in this work. Having grown up witnessing the devastating impacts of fossil fuels in her community, including a massive oil spill, she worked with her community to establish the Piitapan Solar Project, founded the organization Sacred Solar Earth and co-founded Indigenous Climate Action.<sup>229</sup> Her documentary series, *Power to the People*, profiles renewable energy projects organized by Indigenous communities.<sup>230</sup>

A number of these renewable energy projects also support educational initiatives. Examples include:

- Squamish Nation’s Culliton Creek run-of-the-river hydro project creates revenue that supports their cultural and language programs—including an education program on Indigenous practices and ways of knowing for Indigenous and non-Indigenous students in the local community.<sup>231</sup>
- Listuguj First Nation reinvests the money they make from their wind farm energy project into education at their community school. Through land-based education, Mi'kmaq

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<sup>227</sup> Emilee Gilpin, “‘All It Takes Is One Spark’ — Land-Based Youth Program Shaping Lives,” Coastal First Nations, August 8, 2023, <https://coastalfirstnations.ca/land-based-youth-program-shaping-lives/>.

<sup>228</sup> NunatuKavut Community Council, “Driving Climate Knowledge Forward in NunatuKavut through Youth Engagement and Monitoring,” NunatuKavut, February 10, 2021, <https://nunatukavut.ca/article/driving-climate-Knowledge-forward-in-nunatukavut-through-youth-engagement-and-monitoring>.

<sup>229</sup> Rhett Butler, “Melina Laboucan-Massimo: Catalyzing an Indigenous-Led Just Energy Transition,” *Mongabay Environmental News*, March 22, 2021, <https://news.mongabay.com/2021/03/catalyzing-an-indigenous-led-just-energy-transition-qa-with-melina-laboucan-massimo/>.

<sup>230</sup> “Power to the People,” Power to the People, March 17, 2020, <https://powertothepeople.tv/>.

<sup>231</sup> “Sechelt, BC,” Power to the People, May 13, 2019, <https://powertothepeople.tv/sechelt/>.

language classes, music and the arts, students are taught traditional knowledge, music, and the arts.<sup>232</sup>

These programs and others like them show how important Indigenous-led climate justice education is for supporting Indigenous youth, strengthening Indigenous sovereignty, and achieving climate justice. For non-Indigenous people, the teachings of Indigenous educators offer important opportunities for deep learning and reflection on the connections between colonialism and the climate crisis and, by extension, on the potential for connecting decolonial and climate justice education.

### III. Teacher-Led Climate Change Education and Advocacy

Some teachers in mainstream education have also been active in developing climate change education resources, programs, professional development and advocacy. Their initiatives have been informed, to varying degrees, by the work of youth and Indigenous Peoples on climate justice education. Their work is characterized by a commitment to evidence-based climate change education that is clear about the role of fossil fuels and a deep concern to nurture students' well-being and foster their creativity and agency in addressing the climate crisis. A couple of the programs developed as resources for teachers include:

- Climate Justice in BC is a resource package created in 2014 for high school students to help teachers “engage their students with how climate action intersects with social justice.” Developed by the Canadian Centre for Policy Alternatives with support from the British Columbia Teachers’ Federation, a Social Sciences and Humanities Research Council of Canada grant, the Vancouver Foundation, and Vancity credit union, the Climate Justice in BC modules are designed to help students go beyond the “personal choice’ model of social change to reimagine the systems that surround them.” Climate change is presented as a systemic problem that requires systemic solutions and collective action. Various modules explain that climate change is primarily driven by the burning of fossil fuels and explore the concept of climate justice in terms of the unequal impacts of climate change, “who benefits and who pays the costs from burning fossil fuels.”<sup>233</sup>
- Natural Curiosity, run through the Dr. Eric Jackman Institute of Child Study Laboratory School at the Ontario Institute for Studies in Education (OISE), is a professional development program for teachers aimed at helping them address critical links between environmental and Indigenous education. Developed in collaboration with Indigenous educators and partners, the program offers “webinars, workshops, walking tours, and communities of practice” to help teachers learn how to “centre Indigenous perspectives

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<sup>232</sup> “Listuguj, QC,” Power to the People, May 13, 2019, <https://powertothepeople.tv/listuguj/>; Sacred Earth Solar, Indigenous Climate Action, Power to the People, David Suzuki Foundation, *Just Transition Guide: Indigenous-led Pathways toward Equitable Climate Solutions and Resiliency in the Climate Crisis*, 2023: 5, <https://static1.squarespace.com/static/5c9860bf77b9034bc5e70122/t/6555222edcea4d681ccf0454/1700078320040/Just+Transition+Guide.pdf>.

<sup>233</sup> Canadian Centre for Policy Alternatives, BC Teachers’ Federation, “Climate Justice in BC: Lessons for Transformation | Classroom-Ready Materials to Engage Students about How Climate Action Intersects with Social Justice,” 2014, <https://teachclimatejustice.ca/>; “Module 1: Introduction to Climate Justice | Climate Justice in BC: Lessons for Transformation,” Teachclimatejustice.ca, 2020, <https://teachclimatejustice.ca/the-lessons/module-1-introduction-to-climate-justice/>.

in children's environmental inquiry." In 2022–2023, Natural Curiosity developed and ran a free, online professional development course on climate change with six sessions. Co-created and facilitated by Indigenous and non-Indigenous educators, the program invited teachers to consider how a "pedagogical approach focused on Land and community could be applied to climate change education."<sup>234</sup>

There are also examples of teachers taking action to bring climate justice education into their teaching practices. The work of elementary school teacher Mika Gang is one such example of a teacher going beyond the established curriculum and bringing climate justice education into their classroom in new ways.

- In an article in *ETFO Voice*, Mika describes the multiple ways in which she helps her young students navigate climate change and develop the skills to address it, including by making space to listen to each other's concerns about climate change; ensuring that they have opportunities for connecting with the land through outdoor learning; learning from the stories of Indigenous Peoples and leaders; and helping students understand the power of collective action and advocacy by writing letters to elected officials as a group. In addition, Mika encourages her fellow teachers to join her in pushing for the Ontario Teachers' Pension Plan to divest from fossil fuels. By pushing for divestment, Mika points out that teachers can join with their students in learning to be agents of change for climate justice.<sup>235</sup>

#### IV. Educator Advocacy

L'Association pour l'enseignement de la science et de la technologie au Québec (AESTQ) is a nonprofit professional organization that promotes science education and provides support to teachers from pre-school to post-secondary.<sup>236</sup> Under the leadership of the executive director, Camille Turcot, AESTQ collaborated with Marie Maltais and other youth leaders to create a survey on climate change education in Québec schools—primary, secondary, and cégep (college).<sup>237</sup> The survey aims "to discover what young people already know about climate change, how they feel about it, what they have learned at school about this topic, and especially, what they would like to learn?" Distribution of the survey began in 2022 and its results have attracted media attention about the gaps in Québec's science curriculum on climate change.<sup>238</sup> Through its support for the survey project, AESTQ also helped to create a space for youth voices on this

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<sup>234</sup> "Educator Resource for Environmental Inquiry | Toronto," Natural Curiosity, 2022, <https://www.naturalcuriosity.ca/about-us>; "Climate-Focused Professional Learning Series," Natural Curiosity, 2022, <https://www.naturalcuriosity.ca/climate-focused-series>.

<sup>235</sup> Mika Gang, "Understanding Climate Change and Bringing Advocacy, Art and Indigenous Wisdom into the Classroom," *ETFO Voice* (Magazine of the Elementary Teachers' Federation of Ontario), 2023, <https://etfovoice.ca/feature/understanding-climate-change-and-bringing-advocacy-art-and-indigenous-wisdom-classroom>.

<sup>236</sup> "Accueil," L'Association pour l'enseignement de la science et de la technologie au Québec, 2024, <https://www.aestq.org/fr/>.

<sup>237</sup> Marie Maltais, "L'éducation aux changements climatiques vue par une élève de 4e secondaire," Association pour l'enseignement de la science et de la technologie au Québec, 2023, <https://www.aestq.org/fr/education-climatique-eleve>.

<sup>238</sup> Louis-Philippe Arseneault, "Deux élèves réclament plus de temps consacré aux changements climatiques en classe," Radio-Canada, December 9, 2022, <https://ici.radio-canada.ca/nouvelle/1939833/changements-climatiques-ecole-science-technologie>.

critical issue. AESTQ is now advocating to “convince the Minister of Education to revise the science and technology programs in primary and secondary schools to integrate climate change education.”<sup>239</sup> In 2023, AESTQ held a conference on climate change education.<sup>240</sup> Their 2024 conference was on the topic of “Diversity, Decolonization, Science and Technology.”<sup>241</sup>

## V. Elements of a Robust Climate Education

Based on our research and analysis, here are some of the topics that we feel should be included in curricula that would best provide clarity about the need for urgent action to avoid the worst climate impacts, and would engage students in meaningful collective action that attends to their well-being:

- the science of climate change, its causes and history, including the role of the fossil fuel industry;
- the impacts of climate change on ecosystems, ocean acidification, and biodiversity loss;
- Canada’s international climate commitments and obligations and our progress to date on meeting these commitments;
- the ways in which political, economic, and social systems, including colonialism and consumer capitalism, have contributed to the climate crisis;
- the history of Indigenous Peoples’ efforts to defend their lands and waters; the importance of Indigenous knowledge and stewardship in sustaining all forms of life and developing and deepening caring and respectful relationships with all living beings;
- the disproportionate impacts of climate change on Indigenous people, historically marginalized communities of colour, women, youth and populations in the Global South;
- the role of civic engagement and social movements in addressing the climate crisis and advancing social and climate justice;
- the co-benefits of transitioning off fossil fuels and developing climate solutions for people’s physical and mental health, community well-being, and sustainable economic futures, including the equitable development of renewable forms of energy and community energy systems; regenerative agriculture; active transportation; public transit; circular economies; and nature-based solutions;

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<sup>239</sup> Office for Climate Education, “Camille Turcotte, at the Forefront of Climate Change Education in Quebec,” *Oce.global*, April 12, 2023, <https://www.oce.global/en/news/camille-turcotte-forefront-climate-change-education-quebec>; Anne-Marie Provost, “Les programmes de science et technologie feront plus de place à la crise climatique,” *Le Devoir*, October 20, 2023, [https://www.ledevoir.com/societe/education/800391/programmes-science-technologie-feront-plus-place-crise-climatique?fbclid=IwAR0aqk8r6bQynYpnDHj5xBpxgQFDJsTl56IhzKDjj151-LBSouA\\_x4Ksm3A](https://www.ledevoir.com/societe/education/800391/programmes-science-technologie-feront-plus-place-crise-climatique?fbclid=IwAR0aqk8r6bQynYpnDHj5xBpxgQFDJsTl56IhzKDjj151-LBSouA_x4Ksm3A).

<sup>240</sup> “QUEBEC—Enseigner les enjeux climatiques au congrès de l’AESTQ,” Office for Climate Education, *Oce.global*, October 19, 2023, <https://www.oce.global/fr/news/quebec-enseigner-les-enjeux-climatiques-au-congres-de-laestq>.

<sup>241</sup> L’Association pour l’enseignement de la science et de la technologie au Québec, “Congrès 2024,” AESTQ—Congrès annuel, 2024, <https://congres.aestq.org/fr/>.

- the importance of critical media literacy skills, particularly with regard to reporting on climate change, and the history of climate misinformation;
- the role of the arts in fostering relationships between people, and between people and the natural world, and imagining and bringing into being more just and sustainable futures; and
- the ways in which students can take personal and collective action in their communities to support local climate action plans and advance the rapid and equitable transition away from fossil fuels.

## **Conclusion**

Through sponsorship, partnerships, and funding of organizations, the fossil fuel industry has gained significant influence over how climate change and energy issues are taught in schools. Their involvement presents clear conflicts of interest, which have limited education about the causes of climate change as well as the solutions.

The scientific consensus is clear that emissions from oil and gas operations are the leading cause of climate change, but this important fact is left out of many of the materials produced with industry support. Petro-pedagogy strategies, including the “bias-balanced” approach to energy education, and greenwashing the industry as environmentally friendly, serve to promote a positive view of the oil and gas industry, while masking the urgency of the climate crisis.

In terms of solutions, the focus on individual actions and technological fixes works to obscure the responsibility of the industry and discourage discussion of systemic climate solutions and the urgent need to transition away from fossil fuels.

Misinformation practices are part of the fossil-fuel industry playbook and have caused critical delays to climate action around the world. In Canada, the greenwashing amendments that passed as part of Bill C-59 are intended to address false and misleading statements in advertising. However, misleading information in classrooms is even more insidious, and fossil-fuel influence in climate education is not covered by greenwashing laws. Of all the groups impacted by the climate crisis, children and youth stand to suffer disproportionately. To put an end to climate miseducation, the institutions responsible for education and children’s well-being need to intervene with policy leadership and funding.

The climate crisis demands transformative change across society. And education has been cited as a key component of this work. Comprehensive climate change education—based on science, centred on justice, and free from fossil-fuel industry interference—is possible, and it’s essential to give youth the tools they need to build a better future.

Already, students, teachers, parents, and civil society groups are pushing back against the fossil fuel industry’s involvement in education. Youth-led initiatives are calling for climate justice education that addresses root causes and empowers students as agents of change. Indigenous educators are developing programs that centre Indigenous knowledge and values. And some teachers are creating their own climate education resources, free from industry influence. These efforts point the way forward to an education that empowers youth and catalyzes the next generation of informed, engaged climate leaders.

## **Recommendations**

### **Toward a Robust Climate Education**

To remove the influence of the oil and gas industry from classrooms, governments across all levels need to firmly establish climate change education in the public education system as a public good, and provide the funding and resources to support it. Bringing the work of curriculum development, resource creation, and teacher training into the public realm will help ensure that those involved in this work are accountable to the public, not to corporate interests. There is an inherent conflict of interest when the fossil fuel industry, which has a vested interest in continuing to sell the products that are driving climate change, is involved in educating children about climate, science, and the environment.

#### **1. Federal Government**

In Canada, despite the fact that public education falls under provincial jurisdiction, there is ample room for the federal government to play a more active role in strengthening climate change education and limiting fossil fuel influence. It could, for example, provide leadership and funding necessary to create a more robust climate change education, and convene experts from the field of environmental education and provincial ministries of education to develop curricula and counteract industry influence within schools and among third-party environmental educators.

These steps would help the federal government fulfil its responsibility to advance climate change education, as defined by its commitments to international agreements under the Paris Agreement and the United Nations Framework Convention on Climate Change.

Below we document steps the federal government is taking to address climate change education, the limits of its approach thus far, the problems with the funding model it is supporting, and some of the steps that could be taken to address these concerns.

#### **1.1 Federal Government Policy on Climate Change Education: The National Framework for Environmental Learning**

In 2024, Environment and Climate Change Canada released a discussion paper titled “Toward a National Framework for Environmental Learning.” The existence of this paper seems to indicate that the federal government recognizes its responsibilities to advance climate change education in Canada and understands the importance of education in addressing climate change more broadly.<sup>242</sup>

The paper’s authors acknowledge the gaps in climate change education in Canada today and propose a number of solutions. They discuss the problem of misinformation, the importance of

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<sup>242</sup> Environment and Climate Change Canada, “Toward a National Framework for Environmental Learning,” [www.canada.ca](https://www.canada.ca/en/environment-climate-change/corporate/transparency/consultations/national-framework-environmental-learning/discussion-paper.html), April 4, 2024, <https://www.canada.ca/en/environment-climate-change/corporate/transparency/consultations/national-framework-environmental-learning/discussion-paper.html>.

Indigenous perspectives and leadership, the need to integrate environmental learning into both formal and informal education systems, and educators' need for more support. They also point out that the UN Committee on the Rights of the Child has recommended that Canada

- work with schools to strengthen awareness-raising among children on climate change and environmental health, including on relevant air quality and climate legislation, and
- ensure that children's views are systematically taken into account in developing policies and programs addressing climate change.<sup>243</sup>

The authors of "Toward a National Framework for Environmental Learning" outline several educational areas where the federal government could provide more support. These include

- identifying and supporting skills development and training for youth for future jobs in a net-zero economy and a circular economy that prioritizes reuse and sustainability;
- helping to ensure that Indigenous peoples' perspectives are included in environmental education and supporting the provision of education programs on climate change and stewardship programs for First Nations youth;
- supporting environmental education programming in non-formal education settings such as zoos and museums; and
- providing funding for "dedicated educators and well-known organizations doing the work and developing a solid foundation to advance environmental learning in Canada."

Youth feedback on the initial discussion paper highlights the need for "timely and meaningful action" and the demand for environmental learning that "convey[s] the urgency of the climate crisis." A youth engagement report published by the government includes direct statements from youth, including one that critiques the contradictions in federal government policy and calls for accountability.

In summarizing the findings from the youth engagement sessions, the government acknowledged youth calls for environmental learning that better integrates Indigenous knowledge, combats misinformation, and is collaborative, interdisciplinary, and justice-focused. However, the report on youth engagement did not address young people's calls for urgency and accountability.<sup>244</sup>

The federal government also conducted three "dialogue days," including one in Winnipeg with the Nature Education Collective, which includes Ducks Unlimited and Earth Rangers—both of which receive funding from the fossil fuel industry—and another in Vancouver with "one hundred

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<sup>243</sup> U.N. Committee on the Rights of the Child, *Concluding observations on the combined 5th and 6th periodic reports of Canada: Committee on the Rights of the Child*, 90th session, Geneva: June 2022, <https://digitallibrary.un.org/record/3978336?v=pdf#files>.

<sup>244</sup> Environment and Climate Change Canada, "Highlights of Youth Engagement: Toward a National Framework for Environmental Learning," Canada.ca, 2024, Date modified: November 28, 2024, <https://www.canada.ca/en/environment-climate-change/corporate/transparency/consultations/national-framework-environmental-learning/highlights.html>.

NGO leaders, educators, NGO professionals, youth, public servants, and other stakeholders.” After these consultations, the government concluded that “multi-sector partnerships between government, NGOs, philanthropists, youth, and corporate sectors, (s/c) is likely to drive progress on strengthening environmental literacy in Canada.” This conclusion raises questions about the influence the oil and gas industry will continue to have in shaping federal policy on climate and environmental education.<sup>245</sup> The government acknowledges its responsibility to offer more robust education on climate change, and the need for improvement. However, it has not addressed the issue that the gap in environmental education being filled by corporate interests and how this might undermine climate and environmental education that serves youth's needs.

### **Recommendations on Federal Climate Change Education Policy**

On the National Framework for Environmental Learning:

We urge the government to develop and share the framework, mobilize stakeholders to foster collaboration and coordination, and convene a coordinating body for provincial and school board outreach to ensure robust climate and environmental education for youth in Canada. The framework should:

- require that youth education on climate and the environment is in alignment with Canada's commitments to the Paris Agreement and the United Nations Framework Convention on Climate Change, and;
- ensure that education in Canada is protected from fossil fuel interests, by requiring all parties involved in consulting on climate change education policy to declare any perceived or actual conflict of interest.

### **1.2. Federal Government Funding of Environment and Climate Change Education**

There are complex ties between the federal government, the oil and gas industry, and nonprofit education organizations. Currently, the federal government funds environmental education nonprofits through the Climate Action and Awareness Fund. This fund was created with contributions from the Environmental Damages Fund (which receives monies from penalties and fines levied for environmental violations), and from the now-defunct Climate Action Fund.<sup>246</sup>

In funding environmental nonprofits in this way, the federal government is taking action in accordance with its international treaty obligations to support climate change education, but it is

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<sup>245</sup> Environment and Climate Change Canada, “Toward a National Framework for Environmental Learning,” www.canada.ca, Spring, 2024, Appendix A, <https://www.canada.ca/en/environment-climate-change/corporate/transparency/consultations/national-framework-environmental-learning/discussion-paper.html>.

<sup>246</sup> Environment and Climate Change Canada, “What Is the Climate Action Fund?,” www.canada.ca, August 15, 2018, <https://www.canada.ca/en/environment-climate-change/services/climate-change/climate-action-fund.html>; Environment and Climate Change Canada, “Environmental Damages Fund,” www.canada.ca, November 15, 2018, <https://www.canada.ca/en/environment-climate-change/services/environmental-funding/programs/environmental-damages-fund.html>.

also encouraging reliance on nonprofits, rather than public bodies, to provide critical climate change education.

Public statements by the federal government have also reinforced this approach. In its 7th National Communication in 2017, the federal government made a point of recognizing and commending the “many nongovernmental organizations [that] exist to assist educators to access diverse resources and align teaching activities with the required curriculum,” and in the government’s 2024 discussion paper on environmental learning, the authors recommend that the government increase funding to “well-known organizations...[that are] developing a solid foundation to advance environmental learning in Canada.”<sup>247</sup> The reliance on third-party education providers presents a number of problems for climate education, including the following:

- Several of the third-party providers who received funds from the government’s Climate Action and Awareness Grant also receive, or until very recently received, funding from the fossil fuel industry. This group includes high-profile organizations such as Ducks Unlimited, Earth Rangers, and Learning for a Sustainable Future.<sup>248</sup> In making its funding decisions, the government is no doubt looking to support “well-known organizations,” but in many cases, it is support from oil and gas companies that has allowed these organizations to grow and become well-known in the first place. The work of these organizations has value, but their impact is compromised by the conflict of interest inherent in the fossil fuel industry’s financial involvement. Industry influence can shape how environmental and climate issues are framed as well as which topics are emphasized—or left out—ultimately limiting the scope of education.
- Federal government funding of third-party providers of environment and climate change education that also receive fossil fuel funding elevates the visibility of these organizations and can position them to play a role in shaping federal climate change education policy.
- The effect of the federal government’s support for third-party providers as the primary source of Canadian environmental and climate change education is to institutionalize public/private partnerships in public education. This, in turn, creates a disincentive for provincial government funding for the public provision of climate change education.

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<sup>247</sup> Environment and Climate Change Canada, “Toward a National Framework for Environmental Learning,” [www.canada.ca](https://www.canada.ca), Spring, 2024 <https://www.canada.ca/en/environment-climate-change/corporate/transparency/consultations/national-framework-environmental-learning/discussion-paper.html>

<sup>248</sup> “Climate Action and Awareness Fund—Ducks Unlimited Canada,” Ducks Unlimited Canada, November 23, 2022, <https://www.ducks.ca/our-work/science/climate-action-and-awareness-fund/>; “Government of Canada Supports Climate Action by Earth Rangers Foundation,” [markets.businessinsider.com](https://markets.businessinsider.com/news/stocks/government-of-canada-supports-climate-action-by-earth-rangers-foundation-1029545075), August 28, 2020, <https://markets.businessinsider.com/news/stocks/government-of-canada-supports-climate-action-by-earth-rangers-foundation-1029545075>; “Climate Change and Sustainability Education Funding Received—Learning for a Sustainable Future Receives \$3.8 Million in Federal Government Funding,” *Education News Canada*, 2024, <https://educationnewscanada.com/article/education/level/k12/3/929693/learning-for-a-sustainable-future-receives-3-8-million-in-federal-government-funding.html>.

## Recommendations on Federal Funding for Climate and Environmental Education

Recognizing that the interests of the fossil fuel industry are in direct conflict with the need to educate the public on the causes and impacts of climate change and its solutions, we recommend that the federal government take action to ensure that oil and gas industry influence is excluded from climate change education policies, curricula and resources by:

- requiring that all organizations that receive funding declare any conflicts of interest involving the organization's relationship to the oil and gas industry, and;
- requiring that funding is given only to organizations that have declared their intent to support Canada's international climate commitments, including the 2023 UNFCCC Report of the Conference of the Parties (COP 28), which calls for the transition away from fossil fuels.

The federal government could also step in to provide additional funding for public climate change education. As education scholars have noted, "while the provisions of Section 93 of the *Constitution Act* give primacy to provincial authority over education...the Act does not preclude federal government involvement."<sup>249</sup> In the past, the federal government has funded specific education programs when such programs have been deemed in the national interest. These include the Canada Studies Program and the Official Languages in Education Program, which were both administered by the Department of the Secretary of State. In the former case, the federal government funded the development of curricula and resources; in the latter case, the federal government entered into bilateral arrangements with provincial governments to support the program. In the 1960s, the federal government also provided funds to support vocational and technical training departments in high schools through the Technical and Vocational Assistance Act (1960.)<sup>250</sup>

The federal government could be doing more to fund public climate change education in Canada, which would alleviate the reliance on third-party education providers. To that end, we call on the government to:

- establish and fund a climate change education program to be administered under the Department of Environment and Climate Change Canada in partnership with the provinces to support the development of curricula, resources and teacher training programs.
- include provisions in this program for funding the development of education programs in support of municipal and provincial climate action plans to be delivered by local school boards.

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<sup>249</sup> Dawn Wallin, Jon Young, and Benjamin Levin, *Understanding Canadian schools: An Introduction to Educational Administration*, 6th edition (University of Saskatchewan Open Press: 2021): Ch 2.10, <https://openpress.usask.ca/understandingcanadianschools/>.

<sup>250</sup> Wallin, Young and Levin, *Understanding Canadian Schools*. Ch. 2.12.

### **1.3. The Role of the Council of Ministers of Education, Canada**

The Council of Ministers of Education, Canada is an intergovernmental body founded by the ministers of education. The Council represents provinces and territories on education-related international bodies. It has the potential to provide guidance and leadership, especially given that it is tasked with contributing “to the fulfilment of Canada's international treaty obligations.”<sup>251</sup> As Canada has several important international treaty obligations relating to climate change, the Council could make comprehensive climate change education a priority. It could also support federal-provincial collaboration on the development and delivery of a federally funded climate change education program.

#### **Recommendations on the Role of the Council of Ministers of Education**

In recognition of the Council's responsibility to act on climate change education, we recommend that the Council work with the federal government to

- share information and best practices on climate change education curriculum development. This work could inform the development of a federal program and ensure that curricula in all provinces support Canada's international commitments to meet the Paris target of limiting warming to 1.5°C. This will require curricula that support the social and economic transformations away from fossil fuels to a clean energy future;
- ensure that the development of climate change curricula complements and supports the Council's Indigenous Education Plan and the United Nations Declaration on the Rights of Indigenous People; and
- establish best practices for reporting on the state of climate change education across the provinces and to the federal government.

## **2. Provincial and Territorial Ministries of Education**

*“Since the raison d'être of educational institutions is to promote the health and wellbeing of students and prepare them for the future, it is surely time for Canada's educational institutions—Ministries of Education and school boards—to take action to address the climate crisis.”<sup>252</sup>*  
—Toronto District School Board 2022 Climate Action Report

Given that public education in Canada falls under provincial and territorial jurisdiction, action by Ministries of Education is critical for limiting fossil fuel influence and advancing climate change education in K–12 schools.

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<sup>251</sup> “Council of Ministers of Education, Canada > about Us,” CMEC, n.d., [https://www.cmec.ca/11/About\\_Us.html](https://www.cmec.ca/11/About_Us.html).

<sup>252</sup> Toronto District School Board, *Climate Action Annual Report 2022*: 18.  
<https://drive.google.com/file/d/108ERWR3cYR5Z3hegsown8Z4N8yLuqwP7/view>

Ministries of Education are responsible for: (1) writing overarching education policy and goals, (2) developing the curricula taught by teachers, and (3) overseeing teacher training and professional development.<sup>253</sup>

In each of these domains, provincial and territorial ministries could exercise their authority to limit oil and gas industry influence and develop policies to significantly strengthen climate change education for all grade levels.

## 2.1 Provincial Policies to Limit Oil and Gas Industry Influence in Education

The development of province-wide policies on advertising and corporate influence in schools would limit oil and gas industry influence in the classroom. Currently, most provincial governments leave policies on corporate involvement in schools to school boards, but precedents exist for the development of provincial policies.<sup>254</sup>

- In Quebec, the provincial Consumer Protection Act, with certain exceptions, “prohibits commercial advertising aimed at children under 13 years of age”<sup>255</sup> This has had implications for advertising in elementary schools and secondary schools, particularly in the early grades. It has also been complemented by a 1997 amendment to the Quebec Education Act, prohibiting school boards from receiving “gifts, legacies, grants or other contributions to which conditions incompatible with the mission of the school are attached, particularly conditions relative to any form of commercial solicitation.”<sup>256</sup>
- There are also provincial policies that target particular products: six provinces have banned the sale of junk food on school property, in recognition of the harms of junk food to children’s health.<sup>257</sup>

The development of policies on advertising directed at children in Quebec and other jurisdictions is based on the recognition that children are uniquely vulnerable to advertising and that advertising has negative impacts on children’s health and well-being, through the promotion of unhealthy diets and consumerism.<sup>258</sup> As the continued consumption of fossil fuels harms

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<sup>253</sup> National Center on Education and the Economy, “Canada,” NCEE, 2024, <https://ncee.org/country/canada/>.

<sup>254</sup> Bernie Froese-Germain, Canadian Centre for Policy Alternatives, Canadian Teachers’ Federation, Fédération des syndicats de l’enseignement, *Commercialism in Canadian Schools: Who’s Calling the Shots?* (Canadian Centre for Policy Alternatives, Ottawa, Ontario: 2006): 14, [https://policyalternatives.ca/sites/default/files/uploads/publications/National\\_Office\\_Pubs/2006/Commercialism\\_in\\_Canadian\\_Schools.pdf](https://policyalternatives.ca/sites/default/files/uploads/publications/National_Office_Pubs/2006/Commercialism_in_Canadian_Schools.pdf).

<sup>255</sup> *Advertising Directed at Children Under 13 years of Age: Guide to the Application of Sections 248 and 249 of the Consumer Protection Act*, Office de la Protection du Consommateur, Gouvernement du Québec, September 10, 2012: 1, [https://cdn.opc.gouv.qc.ca/media/documents/consommateur/sujet/publicite-pratique-illegale/EN\\_Guide\\_publicite\\_moins\\_de\\_13\\_ans\\_vf.pdf](https://cdn.opc.gouv.qc.ca/media/documents/consommateur/sujet/publicite-pratique-illegale/EN_Guide_publicite_moins_de_13_ans_vf.pdf).

<sup>256</sup> *Guidelines for Schools on Advertising and Financial Contributions*, Gouvernement du Québec, Ministère de l’Éducation, 1999: 16, <https://collections.banq.qc.ca/ark:/52327/bs42065>.

<sup>257</sup> Michael MacDonald, “Junk-Food Ban in Canadian Schools Is Working, Study Finds,” *Toronto Star*, June 25, 2017, [https://www.thestar.com/news/canada/junk-food-ban-in-canadian-schools-is-working-study-finds/article\\_b996f7d5-b373-520a-a332-5cdf18590eaa.html](https://www.thestar.com/news/canada/junk-food-ban-in-canadian-schools-is-working-study-finds/article_b996f7d5-b373-520a-a332-5cdf18590eaa.html).

<sup>258</sup> World Health Organization & United Nations Children’s Fund (UNICEF), *Protecting children from the harmful impact of food marketing: policy brief*, World Health Organization, 2022, <https://iris.who.int/handle/10665/354606>; Office de la Protection du Consommateur, Québec and

children's health through air pollution and threatens their prospects for a safe and healthy future, there are grounds for provincial governments to enact policies that would prohibit the promotion of fossil fuels—whether through sponsored programs or materials—in particular.

### **Recommendation for Policies on Advertising in Schools**

In the interests of children's health and well-being and in support of their right to a safe future, we recommend that Ministries of Education in all provinces and territories develop policies to

- prohibit commercial advertising aimed at children, and
- prohibit promotional and sponsorship activities by the oil and gas industry in schools.

## **2.2. Provincial Policies for Regulating Third-Party Providers of Education in Relation to the Oil and Gas Industry**

In order to further limit oil and gas industry influence, provincial and territorial Ministries of Education could develop policies that regulate third-party providers of educational materials used in public education.

In the public school system, all employees, at the level of the school, the school board, and the ministry, are accountable to the public for the education and well-being of students. However, a non-governmental education organization, while regulated by the federal government as a charity or nonprofit, is accountable to its board, the members of which may serve private business interests. In the case of environmental education organizations that receive funding from oil and gas companies and/or have board members who represent the fossil fuel industry, there is a direct conflict of interest.

### **Recommendations for Regulating Third-Party Providers of Education**

In order to address this conflict of interest, we recommend that provincial governments develop policies to promote transparency and accountability and protect the integrity of public education, by requiring that

- third-party providers of education publicly disclose the names of their corporate funders and the public or private organizations represented by their board members;

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Les Éditions Protégez-Vous, *Your Kids and Ads: A Handy Guide*, Gouvernement du Québec, 2009, [https://cdn.opc.gouv.qc.ca/media/documents/zone\\_enseignants/Your\\_kids\\_and\\_Ads\\_AN\\_web.pdf](https://cdn.opc.gouv.qc.ca/media/documents/zone_enseignants/Your_kids_and_Ads_AN_web.pdf).

- third-party providers of environment and climate change education declare any conflicts of interest arising from funding, representation or other relationships with oil and gas companies;
- third-party providers of environment and climate change education who have a relationship to the oil and gas industry are prohibited from providing education resources and programs in schools;
- third-party providers of environment and climate education align their information with climate science;
- third-party providers of education, including environmental education, who work in schools or provide materials for use in public schools, abide by a code of ethics that ensures they are answerable to the public and are committed to advancing the government climate change education curriculum (as outlined below).

### **2.3. Provincial Action to Strengthen Climate Change Education**

To date, most provincial governments have failed to demonstrate the initiative required to correct the uneven state of climate education in Canada. Combined with insufficient funding, this lack of leadership has created an opportunity for the corporate sector, and the fossil fuel industry in particular, to exert its influence in this field.

To remove the influence of the oil and gas industry from classrooms, provincial governments need to firmly establish climate change education in the public education system as a public good, and provide the funding and resources to support it. As per the discussion of federal funding above, this could be undertaken with federal government support. Bringing the work of curriculum development, resource creation, and teacher training into the public realm will help ensure that those involved in this work are accountable to the public, not to corporate interests.

Our recommendations for provincial action cover five areas: government leadership, curriculum reform, educational resource development, teacher training, and inter-departmental collaboration.

#### ***i. Ministry of Education Leadership on Climate Change Education***

There is considerable variation across Canada when it comes to Ministry leadership on education policy with respect to climate change.<sup>259</sup> Only four provinces have “sustainability-specific overall governance documents”<sup>260</sup>: Manitoba, Quebec, Ontario, and British Columbia; and only one

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<sup>259</sup> “CCE Country Profile: Canada,” MECCE, The Monitoring and Evaluating Climate Communication and Education Project, March 2024, [https://mecce.ca/country\\_profiles/cee-country-profile-canada/](https://mecce.ca/country_profiles/cee-country-profile-canada/).

<sup>260</sup> D. Beveridge, M. McKenzie, K. Aikens, K. M. Strobbe, and R. M. Beveridge, *Sustainability in Canadian K–12 Education: Closing the Research Gap on Understanding National Trends*, Sustainability and Education Policy Network, University of Saskatchewan, Saskatoon, Canada: 2017, <https://sepn.ca/wp-content/uploads/2014/11/EC-12-census-research-brief-nov27v2.pdf>.

province, British Columbia, has produced a policy statement on climate change education.<sup>261</sup>

Recent research has shown that policy statements can have a significant impact.<sup>262</sup> Statements from Ministries of Education are indicative of the importance that the Ministry attaches to advancing education in a particular field. They can shape policy direction and curricula design and also encourage the development of climate change education and policy at the school board level. As Hargis and McKenzie write: “each level of education policy is important in ensuring sustainability policies and practices are strong at ‘lower’ levels.”<sup>263</sup> However, to be truly effective, such policies need to be supported by the establishment of measurable objectives and plans for monitoring and reporting on progress toward these objectives. Such plans are not yet in place at the provincial level.<sup>264</sup>

In recent years, some Ministries of Education, such as those in British Columbia and Ontario, have made student well-being a priority in their strategic education plans.<sup>265</sup> Given the growing rates of youth climate anxiety, this strategic priority provides another avenue for addressing the impacts of climate change.

### Recommendations for Ministries of Education on Climate Leadership

- All Ministries of Education should develop and issue climate change education policy statements.
- Policy statements should be accompanied by detailed plans for directing funding and resources toward the strengthening of climate change education and monitoring and reporting on progress toward these objectives.
- As an indication of a Ministry’s commitment to climate change education, a marker of their leadership, and as an impetus to action, we also recommend that all executives within Ministries of Education receive training on climate change, its causes, impacts, and solutions.
- All Ministries of Education should channel funding allocated for well-being towards school board initiatives regarding climate anxiety training for school counsellors, in order to support the work of teachers in classrooms.

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<sup>261</sup> B.C. Ministry of Education and Child Care, “K–12 Climate Change Education in B.C.—Province of British Columbia,” [www2.gov.bc.ca](https://www2.gov.bc.ca), January 23, 2024, <https://www2.gov.bc.ca/gov/content/education-training/k-12/administration/program-management/climatechangeeducation>.

<sup>262</sup> Ellen Field, Gia Spiropoulos, Anh Thu Nguyen, and Rupinder K. Grewal, “Climate change education within Canada’s regional curricula: A systematic review of gaps and opportunities,” *Canadian Journal of Educational Administration and Policy* 202 (2023): 155-184. <https://doi.org/10.7202/1099989ar>

<sup>263</sup> Kristen Hargis and Marcia McKenzie, *Responding to Climate Change Education: A Primer for K–12 Education*, The Sustainability and Education Policy Network, Saskatoon, Canada, 2020: 4, <https://sepn.ca/wp-content/uploads/2021/01/SEPN-CCEd-Primer-January-11-2021.pdf>.

<sup>264</sup> The only organization monitoring climate change education in Canada is the Canadian hub of Monitoring and Evaluating Climate Communication and Education (MECCE). MECCE is external to the Ministries and is funded by UNESCO. <https://mecce.ca/>.

<sup>265</sup> National Center on Education and the Economy, “Canada,” NCEE, 2024, <https://ncee.org/country/canada/>.

## ***ii. Climate Change Education and Curriculum Reform***

Overall, research has shown that climate change education in Canada is characterized by “shallow engagement,” focuses mainly on the science of climate change, and largely fails to address climate impacts, issues of climate justice, or climate solutions.<sup>266</sup> Many curricula expectations relating to climate change are in elective, not mandatory, courses, and there is considerable variation in the subject areas (e.g., science or social science) where climate change is considered. Only Ontario currently has a mandatory high school climate change unit in a Grade 10 science course.<sup>267</sup>

Meanwhile, research on best practices in climate change education has made it clear that while an understanding of the science of climate change is essential, it is insufficient to students’ learning needs. It also fails to equip students with the knowledge, skills, and values required to address the causes and impacts of climate change and participate in the transformative changes required for Canada to meet its international climate commitments and transition off fossil fuels.<sup>268</sup>

As Canada works to develop more robust climate education programming, the 2024 UNESCO publication *Greening Curriculum Guidance: Teaching and Learning for Climate Action*, written by an international group of researchers and educators with input from youth, provides valuable direction. As acknowledged by the authors, youth are calling for education that includes a “systems-thinking approach” to climate change and an intersectional understanding of climate justice.

### **Recommendations on Climate Change Education and Curriculum Reform**

- Broad engagement in the curriculum reform process is critical to ensure success.<sup>269</sup> We therefore recommend that Ministries of Education establish a series of advisory committees to review how their education systems currently teach climate change and to identify gaps, using the Greening Curriculum Guidance as the basis for their review. The committees should include an Indigenous advisory committee to ensure that Indigenous knowledge and decolonial practices are centred in this work and a youth advisory committee to ensure that student voices are represented. The committees’ work should also be informed by public consultations that have been

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<sup>266</sup> Andrew Bieler, Randolph Haluza-Delay, Ann Dale, and Marcia McKenzie, “A national overview of climate change education policy: Policy coherence between subnational climate and education policies in Canada (K–12),” *Journal of Education for Sustainable Development* 11, no. 2 (2017): 63, <https://doi.org/10.1177/0973408218754625>; Seth Wynes and Kimberly A. Nicholas, “Climate science curricula in Canadian secondary schools focus on human warming, not scientific consensus, impacts or solutions,” *PloS one* 14, no. 7 (2019): 11, <https://doi.org/10.1371/journal.pone.0218305>.

<sup>267</sup> Ellen Field et al., “Climate Change Education within Canada’s Regional Curricula,” 176

<sup>268</sup> Brownlee, Matthew TJ, Robert B. Powell, and Jeffery C. Hallo, “A review of the foundational processes that influence beliefs in climate change: Opportunities for environmental education research,” *Environmental Education Research* 19, no. 1 (2013): 1–20, <https://doi.org/10.1080/13504622.2012.683389>.

<sup>269</sup> Council of Ministers of Education, Canada, “Owning Change: Governance, Accountability & Engagement,” Pan-Canadian Systems-Level Framework on Global Competencies, 2014, <https://www.globalcompetencies.cmec.ca/owning-the-change>.

developed with outreach to Black, Indigenous and communities of colour, as well as newcomer communities, so that their perspectives and knowledges are included. Any group that has a conflict of interest when it comes to educating the public about climate change, such as a relationship to the oil and gas industry, should be precluded from participation in these consultations.

- All Ministries of Education establish a curriculum reform committee to revise their curricula, based on the advice of the reviewing committees, so that climate justice education is integrated across all subjects, at all grade levels. The revised curricula must enable students, at age-appropriate levels, to understand
  - the science of climate change, its causes and its impacts on ecosystems, ocean acidification, and biodiversity loss;
  - Canada's international climate commitments and obligations and our progress to date on meeting these commitments;
  - the ways in which political, economic, and social systems, including colonialism and consumer capitalism, have contributed to the climate crisis;
  - the history of Indigenous peoples' efforts to defend their lands and waters; the importance of Indigenous knowledge and stewardship in sustaining all forms of life and developing and deepening caring and respectful relationships with all living beings;
  - the disproportionate impacts of climate change on Indigenous people, historically marginalized communities of colour, women, youth and populations in the Global South;
  - the role of civic engagement and social movements in addressing the climate crisis and advancing social and climate justice;
  - the co-benefits of transitioning off fossil fuels and developing climate solutions for people's physical and mental health, community well-being, and sustainable economic futures, including the equitable development of renewable forms of energy and community energy systems; regenerative agriculture; active transportation; public transit; circular economies; and nature-based solutions;
  - the importance of critical media literacy skills, particularly with regard to reporting on climate change, and the history of climate misinformation;
  - the role of the arts in fostering relationships between people, and between people and the natural world, and imagining and bringing into being more just and sustainable futures; and

- the ways in which students can take personal and collective action in their communities to support local climate action plans and advance the rapid and equitable transition away from fossil fuels.

### *iii. Climate Change Teaching Resources*

Reforming the curriculum to ensure the integration of climate justice education will require Ministries of Education to allocate funds to the development and upgrading of teaching resources. It will also require Ministries to update their standards for vetting such resources. Given the interests of the oil and gas industry in influencing resources on environment and climate change education, and given the conflict of interest that this represents, it is critical that Ministries establish guidelines that preclude industry involvement.<sup>270</sup> Provinces would not permit the tobacco industry to oversee health education resources, and they must not permit the oil and gas industry to be involved in the development of climate change education resources.

### **Recommendations for Climate Change Teaching Resources**

Ministries of Education should establish and fund a committee on climate change education resources in order to

- direct the development of new resources based on the reforms undertaken by the climate change education curriculum reform committee;
- ensure that such resources are developed for all grade levels and subjects, including science, social studies and humanities subjects;
- review existing textbooks and educational resources and identify those resources that include misleading or factually inaccurate information relating to climate change or that omit key facts that are part of the scientific consensus, and identify these educational resources as no longer fit for use in the classroom; and
- ensure that provisions are made for updating resources, such as through the establishment of webpages on Ministry websites, given that the fields of climate science, solutions and policy are changing rapidly and that students and teachers should be made aware of new information.

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<sup>270</sup> In addition to the examples documented in this report, see Katie Worth, "Climate Miseducation," *Scientific American*, Vol. 327 Issue 1 (July 2022): 42–49, <https://doi.org/10.1038/scientificamerican0722-42> .

#### ***iv. Professional Development for Teachers on Climate Change Education***

Teaching a revised curriculum with new and revised educational resources will require Ministries of Education to dedicate resources and personnel to developing teacher training and professional development in climate change education. The need for such training was recognized by the Association of Canadian Deans of Education in their 2022 Accord on Education for a Sustainable Future. In the Accord, the Deans acknowledge their responsibility to “ensure that education for a sustainable future is a central and required component of course offerings in our pre-service, in-service and graduate level teacher education curricula, including in experiential learning placements and extra-curricular activities.”<sup>271</sup> For Colleges of Education to fully exercise this responsibility, they will need Ministry support.

#### **Recommendations for Professional Development**

- Ministries of Education should commit resources to the development of education and training on climate change in teacher education programs so that teachers are enabled and empowered to teach this critical subject matter and support their students in developing the knowledge, skills and values to address climate change in their communities. Teacher training would have the added benefit of alleviating youth climate distress caused by the sense of abandonment by the adult world as it would ensure that students see important adults in their lives supporting action.<sup>272</sup>
- Ministries of Education should ensure that resources used in teacher training are free from the influence of the fossil fuel industry and that teachers are educated on climate misinformation and its history.

#### ***v. Communication and Collaboration Between Ministries of Environment and Education***

Ongoing communication and collaboration between Ministries of Education and other ministries can support the continued development of climate education materials. In some provinces this process has already been institutionalized. For example,

- In B.C., the Climate Action Secretariat (CAS), located within the Ministry of Environment and Climate Change Strategy, coordinates provincial climate action across all ministries. Its partnership with the Ministry of Education serves to ensure that K–12 education remains aligned with the province’s climate action.<sup>273</sup>

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<sup>271</sup> Association of Canadian Deans of Education, *ACDE Accord on Education for a Sustainable Future*, Association of Canadian Deans of Education, 2022: 11. <https://csse-scee.ca/acde/wp-content/uploads/sites/7/2022/03/Accord-on-Education-for-a-Sustainable-Future-1.pdf>

<sup>272</sup> Hickman et al., “Climate Anxiety in Children”: 864.

<sup>273</sup> Government of British Columbia, “K-12 Climate Change Education in B.C. - Province of British Columbia,” [www2.gov.bc.ca](https://www2.gov.bc.ca/gov/content/education-training/k-12/administration/program-management/climatechangeeducation), n.d. <https://www2.gov.bc.ca/gov/content/education-training/k-12/administration/program-management/climatechangeeducation>

- In Quebec, the Ministry of the Environment and the Fight against Climate Change provides an online climate-education resources platform for teachers, called Le coin de Rafale, which includes information about Quebec's own climate action plan and how students can participate.<sup>274</sup> Such partnerships link climate change education in schools to transformative, society-wide climate plans.

### Recommendation for Collaboration Between Ministries

Relationships that foster communication and collaboration between Ministries of Education and other government bodies could significantly strengthen climate change education in every province and territory. Such relationships should be institutionalized so that they can be sustained. Collaborations must be directed toward ensuring that climate education and action at the provincial level are in alignment with Canada's international commitment to limiting warming to 1.5°C and the UNFCCC agreement to transition away from fossil fuels.

## 3. School Boards

School boards have the potential to be very effective agents in limiting oil and gas industry influence and strengthening climate change education. As schools and school boards are closely connected to their communities, they can be responsive to community voices on these issues.

In a recent study for the Brookings Institute, Christina Kwauk and Rebecca Winthrop argue that school boards are the ideal places for effective and meaningful climate action because they

- are the perfect size for scalability, given that research indicates that “the ‘sweet spot’ for climate action is at the scale of 10,000-100,000 people;”
- are embedded in communities and have “enough community connection potential to effectively scale green civic learning;” and
- can mobilize their communities around climate action because actions they choose will arise from the lived experience of students, teachers, and families, and will therefore be “locally-relevant and tied to local environmental justice” as well as to “action and ownership at the community level.”<sup>275</sup>

This view of the potential of schools and school boards to drive climate action is shared by other researchers and policy analysts. Researchers Hargis and McKenzie point out that whole-

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<sup>274</sup> Ministère de l'Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs, “Le coin de Rafale—Air et changements climatiques,” Gouv.qc.ca, 2024, <https://www.environnement.gouv.qc.ca/jeunesse/sections-personnages/air-cc-magma.htm>; Ministère de l'Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs, “Sais-tu qu'il existe une stratégie gouvernementale de l'adaptation aux changements climatiques?,” Gouv.qc.ca, 2015, [https://www.environnement.gouv.qc.ca/jeunesse/sais\\_tu\\_que/2018/1814-strategie-gouv-adaptation-CC.htm](https://www.environnement.gouv.qc.ca/jeunesse/sais_tu_que/2018/1814-strategie-gouv-adaptation-CC.htm).

<sup>275</sup> Christina Kwauk, and Rebecca Winthrop, *Unleashing the creativity of teachers and students to combat climate change: An opportunity for global leadership*, Brookings Institute: 2021, <https://www.brookings.edu/articles/unleashing-the-creativity-of-teachers-and-students-to-combat-climate-change-an-opportunity-for-global-leadership/>.

institution solutions can be enacted in schools, including climate retrofitting through greening buildings, grounds, and school buses, while also creating a culture for climate action through awareness-building and engagement on climate change education. The US-based nonprofit UndauntedK12 sees the whole-institution approach as one that pulls as many climate-friendly levers as possible in the school space and propels action toward building “an equitable, zero-carbon, climate-resilient future.”<sup>276</sup> These levers can include policies to limit the influence of the oil and gas industry in education.

### Recommendations for School Boards

- **Declare a Climate Emergency**

School boards can declare climate emergencies or support existing declarations passed by their municipal councils.<sup>277</sup> Climate emergency declarations are demonstrations of local leadership, and we recommend that such declarations include references to the Paris Agreement of limiting warming to 1.5°C and the just and rapid energy transition that is required to meet that agreement. In this way, declarations serve to raise awareness of the urgency for climate action and make it a priority. In addition, they establish a reference point for all future school board policy decisions, including policy decisions concerning education, educational resources, professional development for teachers, and school facilities and buildings.

- **Develop and Implement a Climate Action Plan**

Based on climate emergency declarations, school boards should develop climate action plans that outline practical steps for reducing emissions and engaging school communities on climate action. Dr. Ellen Field and Sidney Howlett suggest at the outset that any organization that is undertaking climate action plans start by asking if their organization is “on track to approximately halve their greenhouse gas emissions by 2030 in order to mitigate the worst climate outcomes and meet our commitments to the Paris Agreement.”<sup>278</sup> With this target as their guide, school boards should develop strategic plans that support the reduction of emissions and the transition off fossil fuels. Plans should

- include measures to support energy conservation and end fossil fuel reliance;
- promote plant-based diets and reduce food waste;
- support the shift to electric buses that can double as back-up emergency power sources;

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<sup>276</sup> UndauntedK12, “Who We Are,” UndauntedK12, 2014, <https://www.undauntedk12.org/about>; UndauntedK12, “Climate Levers for 2024,” UndauntedK12, 2023, <https://www.undauntedk12.org/23for2023>.

<sup>277</sup> Climate Caucus, School Trustees Handbook, Climate Caucus, 5–6, <https://docs.google.com/document/d/1vxazq1wMTU67BqPsnM1WDJHqySZJIXri/edit>.

<sup>278</sup> Ellen Field and Sidney Howlett, *Climate Leadership within Canadian School Boards: 2023 Review* (Lakehead University, 2023): 6, <https://climatechangelearningcanada.org/2023-review/>.

- promote the greening of school grounds to address heat impacts; and
- provide critical climate education that addresses the root causes of climate change.

Further, the development of climate action plans should be informed by consultation diverse voices to ensure that those most impacted and at the leading edge of climate leadership—youth and Black, Indigenous, people of colour—can help keep climate action plans accountable while furthering anti-oppressive climate education.<sup>279</sup>

- **Prohibit Fossil Fuel Sponsorship in Schools**

In keeping with declarations of climate emergency and climate action commitments to support the transition away from fossil fuels, school boards should establish policies prohibiting fossil fuel sponsorship of any educational or school-related resource, event, or initiative. School boards should enact such prohibitions to protect their students, especially if provincial governments have failed to do so. The grounds for such a policy are the same: no educational institution with a duty of care to children should be promoting a product whose continued consumption harms children's health through air pollution and threatens their prospects for a safe, climate-stable and healthy future.

- **Establish a Vetting Process to Review Educational Resources**

In the absence of provincial action to develop publicly funded climate change education resources free from the influence of the fossil fuel industry, school boards should establish their own vetting processes to prohibit fossil-fuel funded educational resources. Such a process would necessarily involve identifying organizations that receive fossil fuel funding or have fossil fuel representation on their boards. It would also involve establishing criteria to assess the extent of industry influence.

In the United States, the National Center for Science Education advises that “districts should ensure that their policies for use of supplemental materials ensure that such materials are aligned with standards, curricula across all district classrooms, and the current scientific consensus.”<sup>280</sup> Any educational resources on climate change that fail to acknowledge the need to rapidly reduce fossil fuel emissions should be considered as failing to align with the scientific consensus. In all cases, the involvement of industry should be flagged and accompanied by explicit recognition that oil and gas funding presents a conflict of interest and their materials therefore require critical assessment.

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<sup>279</sup> Climate Education Reform BC, “Our Needs,” Reform To Transform, 2019, <https://www.climateeducationreformbc.ca/our-needs>.

<sup>280</sup> Eric Plutzer, A. Lee Hannah, Joshua Rosenau, Mark S. McCaffrey, Minda Berbeco, Ann H. Reid, *Mixed Messages: How Climate is Taught in America's Schools* (Oakland, CA: National Center for Science Education, 2016): 33, <http://ncse.com/files/MixedMessages.pdf>.

- **Promote Fossil-Free Resources**

As school boards can promote specific teaching resources in their online portals, they should promote educational resources on environment and climate change that are free of oil and gas industry influence. Priority should be given to resources that provide accurate information about the systemic causes of climate change and the role of the fossil fuel industry, as well as resources that centre the voices of those most impacted. As many school boards already prioritize an equity lens in literacy and other subjects as part of their goal of advancing social justice, they can also prioritize accurate and empowering climate resources that focus on human rights, rather than the perspectives of the oil and gas industry. The resources section at the end of this report includes many fossil-free education programs for students and teachers. As well, there is a Toolkit to help parents, teachers, and students take action.

- **Establish Fossil-Free Partnerships: School Board/Municipal Partnerships**

Instead of partnering with fossil fuel companies, or with organizations that receive funding from the fossil fuel industry, school boards can partner with municipal governments. Such partnerships have the potential to help both bodies achieve their respective climate goals by mobilizing awareness and engagement on climate action in communities across a municipality and, at the same time, provide opportunities for school communities to inform the priorities and implementation of municipal climate action plans. This creates a mutually reinforcing mechanism whereby school boards and municipal governments support each other's climate work. These partnerships will also keep climate change education in the public realm and provide some protection from corporate and fossil fuel influence.

From a pedagogy perspective, such partnerships also provide possibilities for meaningful action on local initiatives that make a difference in students' communities. This accords with the recommendations from UNESCO's 2022 survey on what students want from climate education, which found that: "Young people demand that students should have a greater role in decision-making processes in school and connect it with their learning activities on climate change, so that schools become innovative hubs for all relevant stakeholders to engage in climate action."<sup>281</sup> Municipal councils may have funds to direct into local school boards for climate action, allowing the municipality to seed locally supported climate action free from fossil fuel influence. In addition, federal funding could be directed to the support of such initiatives.

One example is the partnership between the City of Toronto, the Toronto District School Board (TDSB) and the Toronto Catholic District School Board (TCDSB). As part of its TransformTO climate action strategy, the city has created a Youth Climate Action grant program which offers \$1,000 for student-led projects in TDSB and TCDSB

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<sup>281</sup> UNESCO, *Youth Demands for Quality Climate Change Education*, UNESCO, 2022: 11.

schools.<sup>282</sup> Groups of K–12 students with an idea for a collaborative project that either reduces greenhouse gas emissions or promotes awareness of the need for emissions reductions can apply. To support students in developing their projects, the TDSB has created a Youth Climate Action Guide.<sup>283</sup>

#### **4. Ideas for Advocacy and Civil Society Action**

Each of the recommendations above will need advocates to push for their implementation. Civil society organizations can play an important role here, including teachers' unions and professional societies, Deans of Education, professional organizations of environmental educators, and parent and student organizations.

##### **Teachers' Organizations, Teachers' Professional Associations and Deans of Education**

###### *Teachers' Unions*

Given that teachers' unions are supporters and defenders of education as a public good, they have an important role to play as advocates for fossil-free climate and environmental education.

A number of Canadian teachers' unions publicly support climate change education and/or have made statements about the influence of the oil and gas industry.

- The Elementary Teachers' Federation of Ontario has created its own professional development unit on climate justice education, with support from the fossil-free organization, Natural Curiosity.<sup>284</sup>
- The BC Teachers' Federation provides its own climate change education resources for teachers, and, as part of the campaign against the use of FortisBC resources in schools, the federation also came out explicitly against the influence of the fossil fuel industry in the classroom.<sup>285</sup>
- The Canadian Teachers' Federation has recognized "the commitments highlighted by Canada at COP26" and the former leader of the CTF, Sam Hammond, has acknowledged that "capping emissions is a start but a real commitment to setting a more sustainable, long-term path forward begins by educating people on the challenges that climate

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<sup>282</sup> "Youth Climate Action Grants," City of Toronto, February 28, 2022, <https://www.toronto.ca/services-payments/water-environment/environmental-grants-%20incentives/youth-climate-action-grants/>.

<sup>283</sup> "Youth Climate Action Guide," Toronto District School Board, 2021, <https://sites.google.com/tdsb.on.ca/youthclimateactionguide/home>.

<sup>284</sup> "Resources on Climate Justice and Environment," Elementary Teachers' Federation of Ontario, n.d., <https://www.etfo.ca/socialjusticeunion/climate-change/environment-and-climate-justice>.

<sup>285</sup> "Climate Justice in BC: Lessons for Transformation," British Columbia Teachers' Federation, October 17, 2014, <https://www.bctf.ca/classroom-resources/details/climate-justice-in-bc-lessons-for-transformation>; The Canadian Press, "Groups want educational materials from fossil fuel companies out of B.C. classrooms," Global News, March 3, 2022, <https://globalnews.ca/news/8657493/calls-to-oust-corporate-ads-bc-classrooms/>.

change brings and the kinds of actions and shifts in thinking we need to address the reality of a warming planet.” This includes, as he makes clear, “keeping the oil buried.” In addition, CTF issued a report with recommendations on the problem of privatization and corporate influence in the public education system, although this report does not explicitly mention the fossil fuel industry.<sup>286</sup>

### ***Teachers' Professional Associations***

Teachers' professional associations can also advocate for fossil-free climate and environmental education. There are national and provincial teachers' associations in a range of subject areas that pertain to climate change education. These include associations such as: British Columbia Science Teachers' Association, Science Teachers Association of Ontario, the Ontario Association of Geographic and Environmental Education, the Association for the Teaching of Science and Technology in Quebec (AESTW) and the Social Studies Educators Network of Canada.

### ***Faculties of Education and Deans of Education***

In their 2022 Accord on Education for a Sustainable Future, the Association of Canadian Deans of Education, motivated by a “concern for the well-being and flourishing of the web of life on Earth,” acknowledge their responsibility to be advocates for education that supports a sustainable future for all children. As they write, “In our role as educators of future citizens, enacting advocacy is crucial if education is to contribute to a sustainable future in which life on Earth flourishes.” They further acknowledge the importance of “learning and teaching about our own structural locations in an international system of racialized and gendered economic relations,” a system that has produced, as they note, extreme environmental degradation and social inequality.<sup>287</sup>

Given the Deans' welcome recognition of their responsibilities to children and their acknowledgement of the systems that are driving destruction, we believe they are particularly well-placed to address the role of the fossil fuel industry in driving the climate crisis and threatening the health and well-being of children and all life on earth. Deans of Education could be especially powerful voices in addressing the problem of petro-pedagogy and advocating for a fossil-free education for all students.

### **Action Ideas for Teachers' Unions, Teachers' Professional Associations and Deans of Education**

- Issue public statements against oil and gas industry involvement in the development of environment and climate change education resources and

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<sup>286</sup> Sam Hammond, “Turning off the Oil Taps Begins in the Classroom,” CTF-FCE, November 17, 2021, <https://www.ctf-fce.ca/turning-off-the-oil-taps-begins-in-the-classroom>; Bernie Froese-Germain, *Public Education, A Public Good: Report on Privatization of K–12 Education in Canada*, Canadian Teachers' Federation, 2016, <https://files.eric.ed.gov/fulltext/ED613794.pdf>.

<sup>287</sup> *ACDE Accord on Education for a Sustainable Future*, Association of Canadian Deans of Education, 2022: 8, 9.

commit to providing or promoting only educational resources that have been developed without industry influence.

- provide professional development on climate change education, including critical education about industry influence, and advocate for provincial funding for the same.
- advocate for government and school board policies to keep corporate influence, especially fossil fuel influence, out of schools.
- advocate for curriculum reform so that all students have accurate and empowering climate change education, free from the influence of the fossil fuel industry.

### **Associations and Organizations for Professional Environmental Educators**

Professional associations for environmental educators have a particularly important role to play in addressing the issue of oil and gas industry influence in their field. These associations include the Canadian Network for Environmental Education and Communication (EECOM) which serves as a nation-wide association for environmental educators, as well as provincial-level organizations such as the Ontario Society for Environmental Education and the Sustainability Education Alliance for New Brunswick.<sup>288</sup> Such organizations provide a variety of services, including sharing best practices in environmental education, organizing conferences, hosting educational resources, and providing professional development opportunities.

All of these organizations have relationships with environmental education nonprofits. Some, such as EECOM, offer membership to environmental education nonprofits; others, such as OSEE, provide partnership status to such groups, while others offer membership only to teachers, but host educational resources from nonprofits. Whatever form these relationships take, professional organizations for educators lend their status to environmental education nonprofits and provide them with platforms from which they can access a broad audience of educators and other opportunities. In doing so, these organizations have a particular responsibility to address the issue of oil and gas industry influence in environment and climate change education, and take action to ensure its integrity.

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<sup>288</sup> “Canada’s Environmental Education Network,” Canadian Network for Environmental Education and Communication, 2024, <https://www.eecom.org/>; “Ontario Society for Environmental Education,” n.d., <https://home.osee.ca/>; “Sustainability Education Alliance of New Brunswick,” New Brunswick Environmental Network, n.d., <https://nben.ca/en/groups-in-action/sustainability-education-alliance-of-new-brunswick.html>.

### Action Ideas for Professional Associations

In recognition of the role and responsibility of professional associations of environmental educators to address this issue, we make the following recommendations:

- Begin by hosting discussions about oil and gas industry involvement in environment and climate change education. Such discussions need to address the conflict of interest inherent in this practice and the limits it places on thorough, evidence-based climate change education. As a baseline principle, it needs to be understood that organizations providing education on climate change need to be able to acknowledge the foundational solution—the rapid transition off fossil fuels—and that doing so will require that educational organizations transition off fossil fuel funding.
- Professional organizations that offer membership or partnership status to third-party providers should
  - establish rules requiring disclosure of funding sources as a condition of membership or partnership, and make this information available in a way that enables educators, parents, and students to assess the integrity of their educational materials, and
  - require that membership or partnership be conditional upon providers developing and implementing a plan to sever ties with the fossil fuel industry.
- To support the development of such plans, professional associations could offer guidance on principles and best practices for third-party providers in relation to funders and sponsors. For example:
  - The nonprofit organization Indigenous Climate Action requires that all of its sponsors respect Indigenous rights and be “proven climate leaders.” With regard to partners, Indigenous Climate Action states that it “does not partner with organizations with a vested interest in extractive industries or climate-destroying initiatives, such as fossil fuel projects.” Their National Steering Committee is responsible for guiding sponsorship decisions.<sup>289</sup>
- Professional associations could provide guidance on funding sources that are not tied to the fossil fuel industry, such as philanthropic organizations that have cut ties to the oil and gas industry. While publicly funded climate change education is the goal, in the interim, a growing number of philanthropic organizations are going

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<sup>289</sup> Indigenous Climate Action, “ICA’s Funding Principles: The Three Sisters Approach,” Indigenous Climate Action, 2014, <https://www.indigenousclimateaction.com/funding-principles-and-sustainers>.

fossil-free, and so can provide alternative sources of funding for nonprofit education organizations.<sup>290</sup>

## Parent Advocacy

Parents have the potential to be powerful voices on the need for comprehensive climate change education that is free from the influence of the fossil fuel industry. Knowing that the future health and well-being of young people are threatened by climate change, parents and caregivers understand the need for climate change education that addresses issues of justice, promotes resilience, and provides young people with the knowledge, skills, and values to participate in creating more just, healthy, and equitable societies free from fossil fuel dependence.

Fortunately, there are now some excellent resources on parent advocacy for climate education and climate action in schools. For example, UndauntedK12 from the United States provides some excellent parent advocacy toolkits.<sup>291</sup>

At all levels of government and within the education system, there are opportunities for advocacy and action.

- At the school board level, parents and caregivers can advocate through school councils and through school board advisory bodies, where they exist, for the recommendations for school boards outlined above. Parents can also form their own groups and seek opportunities to advocate at public school board committee meetings across a broad range of issues, including climate emergency declarations, climate action plans, and the prohibition of fossil fuel sponsorship in schools. They can also promote the establishment of vetting processes to ensure that educational resources are fossil free, and advocate for the development and use of fossil-fuel-free resources.
- At the municipal level, parents and caregivers can meet with councillors to advocate for stronger collaboration between school boards and municipalities on climate action, and on the role of school communities in advancing the just transition away from fossil fuels.
- At the provincial level, parents and caregivers can meet with members of provincial parliaments, legislatures, and assemblies to discuss the need for provincial action on

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<sup>290</sup> “Canadian Foundations Join Global Fossil Free Movement,” Catherine Donnelly Foundation, June 7, 2016, <https://catherinedonnellyfoundation.org/updates/canadian-foundations-join-global-fossil-free-movement/>.

<sup>291</sup> “UndauntedK12,” UndauntedK12, 2023, <https://www.undauntedk12.org/23for2023>; K-12 Climate Action, Mothers Out Front, National PTA, “Parent Advocacy Toolkit,” Washington, DC: The Aspen Institute, 2022, [https://www.pta.org/docs/default-source/files/advocacy/k12-parent-climate-advocacy-toolkit-final-\(1\).pdf](https://www.pta.org/docs/default-source/files/advocacy/k12-parent-climate-advocacy-toolkit-final-(1).pdf).

comprehensive curriculum reform, which includes climate change education that is fully funded, training and resources for teachers, and a prohibition on fossil fuel sponsorship in schools.

- At the federal level, parents can meet with their federal representatives to advocate for efforts to educate citizens on environmental issues that are in alignment with the government's international commitments under the Paris Agreement and the UNFCCC, which includes the commitment to transition away from fossil fuels.
- Parents can also benefit from forming alliances with like-minded education advocacy groups and teachers' organizations.

### **Student Advocacy**

Students and youth organizers have been leaders in the call for comprehensive climate change education that addresses climate justice and provides them with meaningful opportunities for action. As young people who understand the need for education that addresses the climate crisis and advances the just transition, they could be especially powerful voices for fossil-free climate change education.

There are excellent resources for student advocacy. There are also opportunities for advocacy and action within their communities and schools and at all levels of government.

- Within their own schools, students could begin by organizing discussions about fossil fuel industry sponsorship and the need for fossil-free education resources. Such discussions could be held in environment-related student clubs; they could also be brought to school student councils. In addition, students could request to meet with the school principal and let them know about their concerns.
- In their cities and communities, students can reach out to other organizations, including youth climate justice groups, climate advocacy organizations, and teachers' unions to draw attention to the need for fossil-free climate change education.
- At the school board level, students can raise the issue of the need for climate change education free from fossil fuel influence at a meeting of the student senate, if the board has one. They could also request to speak to relevant school board advisory committees. In addition, they could write to their school boards in support of motions asking for more funding and resources for quality climate education and an end to fossil fuel sponsorship in schools.
- At the provincial level, students could meet with members of provincial parliaments or legislative assemblies to advocate for more funding and resources for climate change education, curriculum reform, and a prohibition on fossil fuel sponsorship in schools.

Youth can also submit petitions to parliament which are then included in parliamentary records.

- At the federal level, students could request to meet with their members of federal parliament and relevant ministers, such as the Minister of Youth Services or the Minister of Environment and Climate Change, to call for support for publicly-funded climate change education. Petitions and letters can also be sent to MPs to be read in Parliament.

## Fossil-Fuel-Free Education Resources

Educators should have access to excellent, holistic resources and programs for teaching about climate change and the environment. To better support teachers in delivering climate education, we've compiled this list (below) of “fossil-free resources”—lesson plans, programs, and advocacy tools created without input from the fossil fuel industry.

In addition, we encourage educators to refer to the Climate Education [Action Toolkit](#) that was developed by For Our Kids to accompany the *Polluting Education: The Influence of Fossil Fuels on Children's Education in Canada* report. In it are more advocacy tools for teachers, parents, and students, again, created without input from the oil and gas industry.

### Resources and Programs for Educators

#### Climate Science

- [The CLEAN Collection](#)—a large trove of climate and energy-related literacy resources for K–12, vetted by educators and scientists to prevent climate misinformation from entering schools
- [Climate Change Collection from the National Science Teaching Association](#)—relatable lesson ideas and resources for teaching the scientific consensus on climate change
- [Yale Program on Climate Change Communication](#)—created by researchers at Yale University, this public advocacy group maintains a database called Resources for Educators, which encourages students to investigate climate science through real-world stories and data
- [STEM Teaching Tools](#)—open-source STEM resources with holistic perspectives on climate change
- [The Teacher-Friendly Guide™ to Climate Change](#)—includes in-depth information on climate science topics for high school with advice for teaching this politically charged subject
- [Youth Projects For the Fight Against Climate Change](#)—Government-funded program for Quebec students to create community-based projects that decrease emissions or increase climate adaptations
- [The Solutions Project](#)—evidence-based roadmaps for various countries to transition to renewable energy by 2050

#### Climate Justice

- [The Fourth R: Reduce, Reuse, Recycle, Revolutionize](#)—dance performance and moderated discussion on climate change for middle and high school students by a youth dance company
- [Youth Climate Action Guide](#)—resources and strategies to support youth taking climate action in the Toronto District School Board

- [The Human Impact of Climate Change](#)—elementary and secondary school activities on human rights and climate change through story, film, and role play, by the nonprofit Oxfam
- [Climate Justice in BC](#)—interdisciplinary climate justice unit for grades 8 to 12, exploring climate change and the food system, consumerism, economy and transportation
- [Zinn Education Project](#)—climate justice lessons inside a broader collection of human rights lessons and teaching resources for middle and high school
- [Climate Change Climate Justice](#)—a unit for elementary school on climate change, climate justice, and becoming a climate champion, from nonprofit Trócaire

### Indigenous Perspectives

- [Indigenous Climate Action](#)—an Indigenous-led organization supporting Indigenous youth to become climate leaders through training and [resources](#)
- [Keepers of the Water](#)—an Indigenous-led organization providing [workshops](#) and resources to raise awareness about the harm the fossil fuel industry has caused Indigenous communities
- [Indigenous Climate Monitoring Toolkit](#)—assists First Nations with climate monitoring projects and supports youth to address the climate impacts on their lands
- [Natural Curiosity](#)—environmental education resources and professional development for K–12 teachers through Indigenous lenses from Indigenous and non-Indigenous educators

### Teaching Civic Engagement

- [City Shaper](#)—workshop on climate change, housing, and public space for grades 5 to 12 from [CityHive](#), a youth-led civic planning and decision-making organization in Vancouver
- [Youth Climate Lab Toolbox](#)—student-created open-access library of interactive materials for youth on climate justice, policy, design, advocacy and communication skills
- [Youth Climate Ambassadors Workshops](#)—climate emotions, justice, and advocacy workshops run by university students to empower students in grades 8–12 to take action on climate change

### Teaching to Counter Industry Misinformation

- [Media Literacy Lesson: Corporate Greenwashing](#)—lesson for recognizing corporate greenwashing with video and student hand-out from PBS NewsHour Classroom
- [Global Warming & Climate Change Myths](#)—summary of popular myths and the science that contradicts them
- [Civic Online Reasoning](#)—lessons from Stanford University researchers that teach how to evaluate the credibility of social and political information, including climate information
- [Climate Change Lesson Sets](#)—lessons for working through common misconceptions about climate change from the National Center for Science Education

### **Caring for Climate Emotions and Well-Being**

- [An Educator's Guide to Climate Emotions](#)—alongside activities, this guide from the Climate Psychology Alliance explains what to expect when teaching with climate emotions in mind
- [Climate Doom to Messy Hope: Climate Healing and Resilience](#)—a handbook with accessible discussion prompts, reflections, and arts activities that allow big feelings and tend to well-being
- [3Rs Teacher Guide](#)—a teacher guide from the youth-led organization Shake Up the Establishment offering critical reflections to support well-being in climate education

### **Multi-Topic Resources**

- [Climate Atlas of Canada](#)—includes maps, videos, storytelling and more, on topics such as climate science, Indigenous knowledges, and climate change in the context of health, cities and agriculture.
- [SubjectToClimate](#)—cross-curricular climate teaching guides on a wide variety of subjects
- [Green Teacher](#)—a range of environmental education resources (free to teachers if their school board has an account)
- [Rooted and Rising](#)—collaborative project-based learning to build community, strengthen leadership skills, and reimagine the future through arts, nature and reflection

### ***Teacher Professional Development***

- [Accelerating Climate Change Education in Teacher Education \(ACCE-TE\)](#)—online professional development program and resources on climate justice, reconciliation and civic engagement
- [Natural Curiosity](#)—professional development through courses, webinars and workshops on Indigenous pedagogies and environmental topics, including climate change

### ***Support for Fossil-Free Education Advocacy***

#### **Networks**

- [For Our Kids](#)—A parent network in Canada engaging in education advocacy and raising awareness of oil and gas companies in climate change education
- [Canadian Association for Physicians for the Environment](#)—a Canadian-based nonprofit organization dedicated to advocacy on environmental issues, with a focus on addressing the connections between climate change and human health. CAPE initiated a campaign in BC for the Ministry of Education to end the use of fossil fuel industry-sponsored education materials

- [Fossil Free Education](#)—advocacy in the Netherlands to end fossil fuel industry involvement in schools, part of [Fossil Free NL](#) which organized to pass a ban on oil advertising in The Hague

### Resources

- [The ABCs of Big Oil](#)—a seven-part series by Drilled podcast, discussing the oil and gas industry's involvement in education in the United States
- [Info Session: Fossil Fuel Promotion in BC Schools](#)—a webinar from For Our Kids

### *[Support for Strengthening Climate Change Education](#)*

### Networks

- [Schools for Climate Action](#)—A US-based organization that supports advocates to pass climate action resolutions at the school board level and with various education groups
- [UndauntedK12](#)—A nonprofit working to make American public schools carbon neutral while advancing critical climate education and youth leadership
- [Teach the Teacher](#)—a student-led organization of students teaching teachers about the climate crisis and advocating for critical climate education that reflects the science

### Resources

- [24 Climate Levers for 2024](#)—a menu of impactful climate actions that students, teachers, principals, schools, boards, and governments can take from UndauntedK12
- [The For Our Kids Guide to Organizing School Climate Actions](#)—tips for parents wanting to take school-based climate actions
- [Put Climate Action Plans on School District's Agenda](#) – tips from For Our Kids for how to advocate for climate action plans in school districts
- [School Trustees Handbook: Climate Action](#)—actions school trustees can take, created by Climate Caucus, a network of elected officials supporting climate action
- [Towards Climate Resilient Education Systems](#)—An international tool from UNICEF for assessing progress on climate action in education systems
- [Greening Curriculum Guidance: Teaching and Learning for Climate Action](#)—UNESCO's guidance for teachers, schools, and countries on climate content to include at different ages

## **Appendices**

### **Appendix One: The Fossil Fuel Industry is Driving the Climate Crisis**

#### **Quickview**

- Climate change is widely recognized as the biggest global threat facing humanity and a critical threat to young people's future.
- The cause of this crisis has been the rapid rise of greenhouse gases in the atmosphere driven primarily by the burning of coal, oil, and gas.
- To prevent further harms and secure a liveable future, experts warn that we must rapidly reduce emissions and that this will require a rapid transition away from fossil fuel use.
- Children and youth are among the most vulnerable, and many are reporting that climate anxiety is negatively impacting their mental health and well-being.
- In the face of this global call to action, the oil and gas industry has responded by funding misinformation campaigns that downplay the threat posed by the climate crisis and that greenwash their own operations.
- Industry misinformation has diminished the political will for effective climate policies, delayed government action, and stalled the transition to clean energy.
- The industry's interest in maintaining the fossil fuel dependence that is driving climate change is in direct conflict with stopping climate change. Therefore, oil and gas involvement in environment and climate change education presents a clear and direct conflict of interest.

#### ***A. The Climate Crisis, Climate Justice, and Climate Delay***

In 2018, the authors of the UN IPCC report issued a warning to world leaders that greenhouse gas emissions must be reduced by 45 percent by 2030 and reach net zero by 2050 if the world is to have a chance of limiting warming to 1.5°C and thereby avoid breaching dangerous tipping

points in the Earth's climate systems.<sup>292</sup> In order to avoid the most catastrophic effects of climate change, experts are clear that the world must rapidly transition away from fossil fuels.<sup>293</sup>

Action on the climate crisis is not only a matter of urgency, it is also a matter of justice.<sup>294</sup> Globally, those who have contributed the least to the climate crisis are the most impacted, while those who emit the most are often the least impacted.<sup>295</sup> Low-income and low-emitting nations in the Global South are suffering some of the worst climate impacts.<sup>296</sup> Extreme environmental events such as the catastrophic flooding in Pakistan in 2022, the prolonged drought in the horn of Africa, and more recently the 2024 record-breaking heatwave across the Middle East and South Asia are destroying critical infrastructure, displacing people from their homes, driving up food and water insecurity and contributing to outbreaks of deadly disease in nations with limited resources to provide aid to those in need.<sup>297</sup>

In Canada, climate impacts are similarly falling hardest on those most affected by existing inequities: Indigenous people, racialized communities, people on low incomes, the disabled, women and gender-diverse people, and youth. For example, in the North, which is warming at least four times faster than the rest of Canada, Indigenous communities are experiencing rapid and traumatic losses of land, traditional foods, and water resources, and with that the loss of traditional knowledge and ways of living.<sup>298</sup> In cities and towns in Canada, it is the unhoused, the marginalized, those in poverty, racialized communities, seniors, women, and the disabled who have often suffered the most during extreme weather events, such as the 2021 heat dome event

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<sup>292</sup> IPCC, "Summary for Policymakers," In V. P. Masson-Delmotte, et al., (eds.), *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* (Cambridge University Press, 2018): 3-24, [doi:10.1017/9781009157896.001](https://doi.org/10.1017/9781009157896.001); Chi Xu, Timothy A. Kohler, Timothy M. Lenton, Jens-Christian Svenning, and Marten Scheffer, "Future of the Human Climate Niche," *Proceedings of the National Academy of Sciences* 117, no. 21 (May 4, 2020): 11350–11355, <https://doi.org/10.1073/pnas.1910114117>.

<sup>293</sup> IEA, *Net Zero by 2050: A Roadmap for the Global Energy Sector* (OECD Publishing, Paris: 2021), <https://doi.org/10.1787/c8328405-en>.

<sup>294</sup> "Climate Change Is a Matter of Justice—Here's Why," UNDP Climate Promise, June 30, 2023, <https://climatepromise.undp.org/news-and-stories/climate-change-matter-justice-heres-why>.

<sup>295</sup> Glenn Althor, James E.M. Watson, and Richard A. Fuller, "Global mismatch between greenhouse gas emissions and the burden of climate change," *Scientific Reports* 6, 20281 (February 5, 2016), <https://doi.org/10.1038/srep20281>.

<sup>296</sup> Stephane Hallegatte, Mook Bangalore, Laura Bonzanigo, Marianne Fay, Tamaro Kane, Ulf Narloch, Julie Rozenberg, David Treguer, and Adrien Vogt-Schilb, *Shock Waves: Managing the Impacts of Climate Change on Poverty*, Climate Change and Development Series (Washington, DC: World Bank Group: 2016), [doi:10.1596/978-1-4648-0673-5](https://doi.org/10.1596/978-1-4648-0673-5); IPCC, "Urgent Climate Action Can Secure a Liveable Future for All," IPCC Press release, March 20, 2023, <https://www.ipcc.ch/2023/03/20/press-release-ar6-synthesis-report/>.

<sup>297</sup> G.O., Administrator. "Pakistan's Flood Problem Is Supercharged by Climate Change. Recovery Means Going beyond Damage Control," *IPI Global Observatory*, June 6, 2023, <https://theglobalobservatory.org/2023/06/pakistans-flood-problem-is-supercharged-by-climate-change-the-recovery-process-will-need-to-go-beyond-damage-control/>; Laura Paddison, "Catastrophic Drought That's Pushed Millions into Crisis Made 100 Times More Likely by Climate Change, Analysis Finds," CNN World, April 27, 2023, <https://www.cnn.com/2023/04/27/africa/drought-horn-of-africa-climate-change-intl/index.html>; "Climate Change Made the Deadly Heatwaves That Hit Millions of Highly Vulnerable People across Asia More Frequent and Extreme," World Weather Attribution header, Accessed November 22, 2024, <https://www.worldweatherattribution.org/climate-change-made-the-deadly-heatwaves-that-hit-millions-of-highly-vulnerable-people-across-asia-more-frequent-and-extreme/>.

<sup>298</sup> Carolyn Gramling, "The Arctic Is Warming Even Faster than Scientists Realized," *Science News*, August 11, 2022, <https://www.sciencenews.org/article/arctic-warming-faster-earth-climate-change>; NOAA in the Arctic, "Report Card 2024—NOAA Arctic," NOAA Arctic, December 10, 2024, <https://arctic.noaa.gov/report-card/report-card-2024/>; National Collaborating Centre for Indigenous Health (NCCIH), "Climate Change and Indigenous People's Health in Canada," Reprinted with permission from P. Berry and R. Schnitter, (eds.), *Health of Canadians in a changing climate: Advancing our knowledge for action*, Government of Canada, 2022, [https://www.nccih.ca/Publications/Lists/Publications/Attachments/10367/Climate Change and Indigenous Peoples Health EN Web 2022-03-22.pdf](https://www.nccih.ca/Publications/Lists/Publications/Attachments/10367/Climate%20Change%20and%20Indigenous%20Peoples%20Health%20EN%20Web%202022-03-22.pdf).

in British Columbia in which over 600 people died, most of whom were seniors in low-income neighbourhoods with little green space, in housing without adequate cooling, or in situations in which they were unable to access cooling centres.<sup>299</sup>

Despite these conditions and the dire projections, governments have delayed taking adequate climate action,<sup>300</sup> and the fossil fuel industry has continued to increase greenhouse gas emissions.<sup>301</sup> Among national governments, Canada has the largest gap between policy promises to lower greenhouse gas emissions and policy action.<sup>302</sup>

## ***B. Climate Crisis, Climate Delay, and Impacts on Youth***

Of all the groups of people who will be impacted by governments' delay in taking the urgent action required to address the climate crisis, children and youth occupy a unique position. Not only is climate change already threatening their lives, health, and well-being, but they are now facing the prospect of ever worsening harms from climate change over the course of their lives.<sup>303</sup>

When children breathe particulates from wildfire smoke, their exposure to contaminants is greater than that of adults per unit of body weight. This puts them at higher risk of long-term damage to their respiratory and cardiac health than is the case for adults.<sup>304</sup> Similarly, as children have more difficulty regulating their body temperature, they are at greater risk for heat illness.<sup>305</sup>

These risks are even higher for Indigenous children, children in racialized and low-income communities, and disabled children. In the north of Canada, for instance, where climate change is affecting the migratory routes of animals and contributing to declines in animal and fish populations, children in Indigenous communities are facing food insecurity and under-nourishment.<sup>306</sup> Indigenous children across Canada are also more likely to experience

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<sup>299</sup> *Extreme Heat and Human Mortality: A Review of Heat-Related Deaths in B.C. in Summer 2021: Report to the Chief Coroner of British Columbia*, June 22, 2022, [https://www2.gov.bc.ca/assets/gov/birth-adoption-death-marriage-and-divorce/deaths/coroners-service/death-review-panel/extreme\\_heat\\_death\\_review\\_panel\\_report.pdf](https://www2.gov.bc.ca/assets/gov/birth-adoption-death-marriage-and-divorce/deaths/coroners-service/death-review-panel/extreme_heat_death_review_panel_report.pdf).

<sup>300</sup> United Nations Environment Programme, *Emissions Gap Report 2024*: xvii.

<sup>301</sup> NASA Earth Observatory website (2024), *Emissions from Fossil Fuels Continue to Rise*, <https://earthobservatory.nasa.gov/images/152519/emissions-from-fossil-fuels-continue-to-rise>.

<sup>302</sup> United Nations Environment Programme, *Emissions Gap Report 2023*; Climate Action Tracker, Canada: Policies & Action (August 2024), <https://climateactiontracker.org/countries/canada/policies-action/>.

<sup>303</sup> United Nations Children's Fund, *The climate-changed child: A children's climate risk index supplement*, UNICEF, New York, November 2023, <https://www.unicef.org/media/147931/file/Theclimate-changedchild-ReportinEnglish.pdf>

<sup>304</sup> Jade Cobern, "[What Parents Should Know about Kids' Safety and Exposure to Dangerous Levels of Wildfire Smoke](#)," ABC News, June 8, 2023.

<sup>305</sup> Emmarie Huetteman and KFF Health News, "Heat Waves Affect Children More Severely," *Scientific American*, August 5, 2022, <https://www.scientificamerican.com/article/heat-waves-affect-children-more-severely/>.

<sup>306</sup> Anna Banerji et al., "Food insecurity and its consequences in indigenous children and youth in Canada" *PLOS Glob Public Health* 3(9), <https://doi.org/10.1371/journal.pgph.0002406>.

displacement as a result of flooding, forest fires, and other extreme weather events.<sup>307</sup> This negatively impacts their relationship to the land, their cultures, their communities, and their mental health, with long-term consequences for their well-being.

For both Indigenous and non-Indigenous children in low-income and racialized communities, climate change is worsening existing inequities in health outcomes.<sup>308</sup> Children in these communities are more likely to suffer from asthma and other respiratory conditions which, in turn, increases their vulnerability to wildfire smoke.<sup>309</sup> Children in lower socio-economic neighbourhoods, and in poor housing, without access to cooling, are also more vulnerable to the health impacts of heatwaves.<sup>310</sup>

Climate change is also significantly affecting the mental health of young people around the world, whether or not youth have personally experienced climate-related disasters, although direct experience increases anxiety.<sup>311</sup> An international study of youth climate anxiety published in 2021 based on a survey of 10,000 youth aged 16–25 showed that “59% were very or extremely worried about climate change and 84% were at least moderately worried.”<sup>312</sup> In addition, researchers found that because governments, and the adult world more broadly, are delaying taking decisive action to slow climate change, youth are experiencing heightened stress and, in some cases, symptoms of trauma.<sup>313</sup> Researchers have described this as a “moral injury” to children, because the trauma of witnessing governments failing to protect them transgresses “fundamental moral beliefs about care, compassion, planetary health, and ecological belonging.”<sup>314</sup>

Researchers investigating youth climate anxiety in Canada have reported similar findings. A study on the well-being of Ontario students by The Centre for Addiction and Mental Health found that 50 percent of students in Grades 7–12 (drawn from a sample of 2,225) are depressed about the future due to climate change.<sup>315</sup> And, a national study of youth climate anxiety based on a survey

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<sup>307</sup> National Collaborating Centre for Indigenous Health (NCCIH). (2022). [Climate Change and Indigenous People's Health in Canada](#). (Reprinted with permission from P. Berry & R. Schnitter [eds.], *Health of Canadians in a changing climate: Advancing our knowledge for action* [Chapter 2]. Government of Canada).

<sup>308</sup> Rebekka Schnitter, et. al. (2022). [Climate Change and Health Equity](#). In P. Berry & R. Schnitter (Eds.), *Health of Canadians in a Changing Climate: Advancing our Knowledge for Action*. Ottawa, ON: Government of Canada.

<sup>309</sup> T., To, et. al. "[Health outcomes in low-income children with current asthma in Canada](#)." *Chronic Dis Can* 29, no. 2 (2009): 49-55; Yiwen Zhang, et. al. "Health impacts of wildfire smoke on children and adolescents: a systematic review and meta-analysis." *Current Environmental Health Reports* 11, no. 1 (2024): 46-60. <https://doi.org/10.1007/s40572-023-00420-9>

<sup>310</sup> Gronlund, Carina J. "[Racial and socioeconomic disparities in heat-related health effects and their mechanisms: a review](#)." *Current Epidemiology Reports* 1 (2014): 165-173.

<sup>311</sup> Ann Sanson and Marco Bellemo. "[Children and youth in the climate crisis](#)." *Bulletin JPsych bulletin* 45, no. 4 (2021): 205-209. doi: [10.1192/bjb.2021.16](https://doi.org/10.1192/bjb.2021.16)

<sup>312</sup> Caroline Hickman, et. al. "[Climate anxiety in children and young people and their beliefs about government responses to climate change: a global survey](#)." *The Lancet Planetary Health* 5, no. 12 (2021): e863-e873.

<sup>313</sup> Ann V Sanson et. al., "[Responding to the impacts of the climate crisis on children and youth](#)." *Child Development Perspectives* 13, no. 4 (2019): 201-207. <https://doi.org/10.1111/cdep.12342>; Caroline Hickman. "Eco-Anxiety in Children and Young People—A Rational Response, Irreconcilable Despair, or Both?." *The psychoanalytic study of the child* 77, no. 1 (2024): 356-368. <https://doi.org/10.1080/00797308.2023.2287381>

<sup>314</sup> Hickman, et. al. "[Climate Anxiety in Children](#)."

<sup>315</sup> A. Boak, et.al., "[The Well-Being of Ontario Students: Findings from the 2021 Ontario Student Drug-Use and Health Survey](#)" Toronto, ON: Centre for Addiction and Mental Health, 2022. p. v.

of 1,000 Canadian youth aged 16–25 by Ellen Field and Lindsay Galway found that 78 percent reported that climate change was affecting their overall mental health and 37 percent said that their thoughts about climate change were negatively impacting their daily functioning.<sup>316</sup>

Further, as in the international study, government delay and inaction on the climate crisis is a significant factor when it comes to youth mental distress, with 73 percent reporting being fearful of their future and 64 percent reporting feeling that their government was not doing enough to avoid climate catastrophe. In no uncertain terms, the authors state that “inaction from adults and the wholly inadequate response to the climate crisis in Canada and globally illustrates a lack of care, and can also be seen as a form of youth mistreatment, harm, and neglect.” As they make clear, protecting the mental and emotional health of young people—and their futures—requires “urgent and transformative climate action.”<sup>317</sup> This is an issue that needs to be addressed in our schools and at all levels of government.

### ***C. The Role of the Fossil Fuel Industry in Driving the Climate Crisis***

In any account of the cause of the climate crisis or the forces working to delay government action on climate change, it is clear that oil and gas plays an outsize role. A recent report from Carbon Majors found that since the Paris Agreement of 2015 most large oil and gas companies actually increased, rather than decreased, their production of fossil fuels.<sup>318</sup> According to the 2023 UN Environment Program Emissions Gap Report fossil fuels used for energy production accounted for 86 percent of global CO<sub>2</sub> emissions, and the industry is currently on track to produce more than double the amount of coal, oil, and gas by 2030 than would be consistent with the slowing production trajectory required to meet the Paris target.<sup>319</sup>

In Canada, despite the federal government’s climate goals and international commitments, the oil and gas industry continues to expand operations. Emissions from oil and gas production—not consumption—are now responsible for over a third of Canada’s total emissions, according to the National Inventory Report 1990–2022. Moreover, because of the expansion of the production of fossil fuels for export, the nation’s overall emissions are increasing, making Canada an outlier among other G7 nations.<sup>320</sup> If Canada’s exported emissions were counted—which, as of 2024, stand at 1,029.9 megatonnes compared to domestic, which are now at 702 megatonnes—Canada’s outlier status would be even more pronounced.<sup>321</sup> And it is predicted that Canada’s emissions will continue to rise, with production from the Alberta oil sands leading the way. The

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<sup>316</sup> Galway and Field. “Climate emotions and anxiety among young people in Canada”: 1.

<sup>317</sup> Galway and Field, “Climate emotions and anxiety among young people in Canada”: 1, 4, 6.

<sup>318</sup> Carbon Majors, “The Carbon Majors database: launch report.” *Carbon Majors*. <https://carbonmajors.org/briefing/The-Carbon-Majors-Database-26913> (2024).

<sup>319</sup> United Nations Environment Programme, *Emissions Gap Report 2023*.

<sup>320</sup> Environment and Climate Change Canada. 2024. National Inventory Report, 1990–2022: Greenhouse Gas Sources and Sinks in Canada. Available online at: [canada.ca/ghg-inventory](https://canada.ca/ghg-inventory); J. David Hughes, *Canada’s Energy Sector: status, evolution, revenue, employment, production forecasts, emissions and implications for emissions reduction*, Corporate Mapping Project, June 2021, [https://policyalternatives.ca/sites/default/files/uploads/publications/BC%20Office/2021/06/REPORT\\_ccpa-bc-cmp\\_canadas-energy-sector.pdf](https://policyalternatives.ca/sites/default/files/uploads/publications/BC%20Office/2021/06/REPORT_ccpa-bc-cmp_canadas-energy-sector.pdf)

<sup>321</sup> “Groups Question Canada’s Climate Leadership after New Data Show Skyrocketing Fossil Fuel Export Emissions.” Ecojustice, November 12, 2024. <https://ecojustice.ca/news/groups-question-canadas-climate-leadership-after-new-data-shows-skyrocketing-fossil-fuel-export-emissions/>

Canadian Energy Regulator predicts that by 2050 Canadian oil exports will grow by 42 percent and gas exports by 186 percent. This growth will make it effectively impossible for Canada to reach its legislated goal of 40–45 percent emission reductions from 2005 levels by 2030 and net zero by 2050.<sup>322</sup> It will also mean that Canada will fail to keep its Paris Agreement commitment to reduce emissions in line with the science of limiting warming to 1.5°C.<sup>323</sup>

The expanding operations are not due to lack of knowledge. The oil and gas industry has long known that the burning of fossil fuels would overheat the atmosphere and destabilize the earth's climate systems. The history of how the industry has responded to climate science has a direct bearing on our current predicament, and it is directly relevant to the fossil fuel industry's involvement in climate change education.

#### ***D. The Fossil Fuel Industry, Climate Science and Climate Misinformation***

The depth and extent of the fossil fuel industry's knowledge of climate science has been the subject of a number of investigations<sup>324</sup> and, more recently, numerous court cases.<sup>325</sup> As early as the 1950s, scientists were informing industry leaders that the burning of fossil fuels was affecting atmospheric concentrations of carbon dioxide.<sup>326</sup> Researcher Geoff Dembicki has reported that the dangerous consequences of this was dramatically brought home at a symposium organized by the American Petroleum Institute (API) in 1959 when Edward Teller, the inventor of the hydrogen bomb, warned oil and gas executives that the greenhouse gas effect caused by the emissions from fossil fuels could overheat the planet and melt the ice caps, flood all coastal cities and threaten a "considerable percentage of the human race."<sup>327</sup> Over the following years,

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<sup>322</sup> Government of Canada, "Canadian Net-Zero Emissions Accountability Act," Government of Canada, February 25, 2021, <https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/net-zero-emissions-2050/canadian-net-zero-emissions-accountability-act.html>.

<sup>323</sup> J. David Hughes, *Canada's Energy Sector*

<sup>324</sup> Centre for Environmental Law, "Smoke & Fumes," n.d. <https://www.smokeandfumes.org/fumes/>; "Climate Files Update: Shell, Exxon, and Early Denial – Climate Investigations Center," n.d. <https://climateinvestigations.org/climate-files-climate-denial-documents/>; Hall, "Exxon Knew about Climate Change."

<sup>325</sup> Bruce Gil, "U.S. Cities and States Are Suing Big Oil Over Climate Change. Here's What the Claims Say and Where They Stand" *Frontline*, August 1, 2022. <https://www.pbs.org/wgbh/frontline/article/us-cities-states-sue-big-oil-climate-change-lawsuits/>

L. Delta Merner, "US States and Communities Are Suing the Fossil Fuel Industry: Six Things You Need to Know." *The Equation*, January 26, 2024; <https://blog.ucsusa.org/delta-merner/us-states-and-communities-are-suing-the-fossil-fuel-industry-six-things-you-need-to-know/#> Merner, L. Delta. "Climate Litigation Is Spreading Around the World." *The Equation*, July 18, 2023. <https://blog.ucsusa.org/delta-merner/climate-litigation-is-spreading-around-the-world/>.

Beth Gardiner, "How an early oil Industry study became key in climate lawsuits." *Yale Environment* 360, November 2022. <https://e360.yale.edu/features/climate-lawsuits-oil-industry-research>

<sup>326</sup> Rebecca John, "New Evidence Reveals Fossil Fuel Industry Sponsored Climate Science in 1954" *DeSmog*, January 30th, 2024, <https://www.desmog.com/2024/01/30/fossil-fuel-industry-sponsored-climate-science-1954-keeling-api-wspa/>; Benjamin Franta, "What Big Oil knew about climate change In its own words," *The Conversation*, October 28th, 2021. <https://theconversation.com/what-big-oil-knew-about-climate-change-in-its-own-words-170642>

<sup>327</sup> Geoffrey Dembicki, *The Petroleum Papers: Inside the Far-Right Conspiracy to Cover Up Climate Change* (Greystone Books, 2022):16 - 18.

Exxon,<sup>328</sup> Shell,<sup>329</sup> and other companies employed their own scientific teams to further study the risks posed by climate change.<sup>330</sup> Their findings confirmed Teller's predictions: global warming caused by emissions from burning fossil fuels would have devastating impacts on ecosystems, cause the inundation of low-lying countries, and bring about changes so drastic that they would be "the greatest in recorded history" and have "a substantial impact on global habitability."<sup>331</sup> Strikingly, recent studies have shown that the projected rates of warming developed by the industry's own scientific teams were, in many instances, more accurate than the projections developed by scientists employed by government and academic institutions.<sup>332</sup>

The oil and gas industry's knowledge of the threat posed by climate change presented industry leaders with a choice: disclose the research and take action to avoid or reduce climate threats by turning to the development of renewable energy, or continue to profit from the extraction of fossil fuels.<sup>333</sup> Rather than releasing their scientists' research, they mounted a coordinated campaign to dispute climate science and block climate action.<sup>334</sup>

The history of the fossil fuel industry's campaign to promote and disseminate climate misinformation has been well-documented and the education system was a target from the start.<sup>335</sup> The origins of this campaign can be traced to the industry's response to the establishment of the United Nations Intergovernmental Panel on Climate Change and James Hansen's testimony to Congress about the dangers of global warming in 1988.<sup>336</sup> Hansen was a leading climate scientist and director of NASA's Institute for Space Studies, and his statement that "the greenhouse effect has been detected and is changing our climate now" made national

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<sup>328</sup> Supran, Rahmstorf, and Oreskes. "Assessing ExxonMobil's global warming projections."

<sup>329</sup> Jessica Corbet, " 'Incredibly Disturbing' Docs Reveal Oil Giant Shell Knew About Climate Impacts Even Earlier" *Common Dreams*, April 2, 2023, <https://www.commondreams.org/news/shell-fossil-fuels-climate-1970s>

<sup>330</sup> Franta, "What Big Oil Knew"; "On its 100<sup>th</sup> birthday in 1959, Edward Teller warned the oil industry about global warming," *The Guardian*, Jan 1, 2018, <https://www.theguardian.com/environment/climate-consensus-97-per-cent/2018/jan/01/on-its-hundredth-birthday-in-1959-edward-teller-warned-the-oil-industry-about-global-warming>

<sup>331</sup> Benjamin Franta, "Shell and Exxon's secret 1980s climate change warnings," *The Guardian*, September 19, 2018 <https://www.theguardian.com/environment/climate-consensus-97-per-cent/2018/sep/19/shell-and-exxons-secret-1980s-climate-change-warnings>; Dembicki, *Petroleum Papers*: 65

<sup>332</sup> Benjamin Franta, "Early oil industry knowledge of CO2 and global warming," *Nature Climate Change* 8, no. 12 (2018): 1024-1025, <https://doi.org/10.1038/s41558-018-0349-9>; A. McCarthy, "Exxon disputed climate findings for years. Its scientists knew better," *Harvard Gazette*, January, 12, 2023, <https://news.harvard.edu/gazette/story/2023/01/harvard-led-analysis-finds-exxonmobil-internal-research-accurately-predicted-climate-change/>; Oliver Milman, "Revealed: Exxon made 'breathhtakingly' accurate climate predictions in 1970s and 80s," *The Guardian*, Jan. 12, 2023, <https://www.theguardian.com/business/2023/jan/12/exxon-climate-change-global-warming-research>

<sup>333</sup> Scott Waldman, "Shell Grappled with Climate Change 20 Years Ago, Documents Show," *Scientific American*, April 5, 2018, <https://www.scientificamerican.com/article/shell-grappled-with-climate-change-20-years-ago-documents-show/>; "1979 Exxon Memo on Potential Impact of Fossil Fuel Combustion," Climate Files, <https://www.climatefiles.com/exxonmobil/1979-exxon-memo-on-potential-impact-of-fossil-fuel-combustion/>

<sup>334</sup> Franta, "What Big Oil Knew"; Dembicki, *Petroleum Papers*.

<sup>335</sup> Geoffrey Supran and Naomi Oreskes. "'Assessing ExxonMobil's climate change communications (1977 – 2014)," *Environmental research letters* 12, no. 8 (2017), 084019 DOI 10.1088/1748-9326/aa815f; "Examining the Oil Industry's Efforts to Suppress the Truth about Climate Change," Hearing before the Subcommittee on Civil Rights and Civil Liberties of the Committee on Oversight and Reform. House of Representatives, 116th Congress, First Session. October 23, 2019. Serial No. 116 – 67, <https://www.congress.gov/event/116th-congress/house-event/LC64569/text>; Naomi Oreskes and Erik M. Conway. *Merchants of Doubt: How a handful of scientists obscured the truth on issues from tobacco smoke to global warming*, (Bloomsbury Publishing USA, 2011.)

<sup>336</sup> IPCC, "History" [https://archive.ipcc.ch/organization/organization\\_history.shtml](https://archive.ipcc.ch/organization/organization_history.shtml)

headlines.<sup>337</sup> Concerned about growing public awareness and government interest in taking action, Exxon, Chevron, other fossil fuel corporations, and related industry groups formed the Global Climate Coalition with the goal of opposing emission reduction policies and sowing doubt about climate science.<sup>338</sup> As international efforts to limit emissions continued to move forward with the development of the Framework Convention on Climate Change in 1992 and then the adoption of the Kyoto Protocol in 1997, the Coalition drafted a “Global Climate Science Communications Action Plan” in 1998.<sup>339</sup> The stated goal of the plan was to convince “a majority of the American public” that “significant uncertainties exist in climate science,” for the purpose of undermining support for government action.<sup>340</sup> As they stated, “victory” would be achieved “when average citizens ‘understand’ (recognize) uncertainties in climate science; recognition of uncertainties becomes part of ‘conventional wisdom.’”<sup>341</sup>

The strategies outlined in the draft included recruiting and training contrarian scientists to contest climate science and then targeting legislators, industry leaders, the media, and, significantly, the education system with misinformation.<sup>342</sup> In the case of education, it was proposed that a “Global Science Education Task Group” be established under a Global Climate Science Data Center “as the point of outreach to the National Science Teachers’ Association and other influential science education organizations.” This group would also develop “educational materials” to be distributed directly to schools and also “through grassroots organizations of climate science partners,” with the goal of informing “teachers/students about uncertainties in climate science.”<sup>343</sup> The long-term goal of this strategy, as the authors of the plan made clear, was to “begin to erect a barrier against further efforts to impose Kyoto-like measures in the future.”<sup>344</sup>

Although the Coalition denies that these plans were officially implemented, most of them were executed in various forms over the following years.<sup>345</sup> While the industry publicly promoted doubt, privately they acknowledged that the predictions of climate science about the impacts of continued fossil fuel use were well-founded.<sup>346</sup>

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<sup>337</sup> Elizabeth Kolbert, “Listening to James Hansen on Climate Change, Thirty Years Ago and Now.” *The New Yorker*, June 20, 2018, <https://www.newyorker.com/news/daily-comment/listening-to-james-hansen-on-climate-change-thirty-years-ago-and-now?>

<sup>338</sup> Hall, “Exxon knew about climate change”; Robert J. Brulle, “Advocating inaction: a historical analysis of the Global Climate Coalition” *Environmental Politics*, 32(2), 2022: 185-206, <https://doi.org/10.1080/09644016.2022.2058815>

<sup>339</sup> American Petroleum Institute, “Global Science Communications Plan,” Deception Dossier #2: American Petroleum Institute’s “Roadmap” Memo”, April 1998, Union of Concerned Scientists, *The Climate Deception Dossiers*, 2015, <https://www.ucsusa.org/resources/climate-deception-dossiers>.

<sup>340</sup> Graham Readfearn, “What happened to the lobbyists who tried to reshape the US view of climate change,” *The Guardian*, 27 February, 2015, <https://www.theguardian.com/environment/2015/feb/27/what-happened-to-lobbyists-who-tried-reshape-us-view-climate-change>

<sup>341</sup> American Petroleum Institute, “Global Science Communications Plan.”

<sup>342</sup> Amy Westervelt, “How the Fossil Fuel Industry Got the Media to Think Climate Change Was Debatable.” *The Washington Post*, January 10, 2019. [www.washingtonpost.com/outlook/2019/01/10/how-fossil-fuel-industry-got-media-think-climate-change-was-debatable/](http://www.washingtonpost.com/outlook/2019/01/10/how-fossil-fuel-industry-got-media-think-climate-change-was-debatable/).

<sup>343</sup> American Petroleum Institute, “Global Science Communications Plan.”

<sup>344</sup> Ben Jervey, “Fossil Fuel Industry’s Global Climate Science Communications Plan in Action: Polluting the Classroom,” *DeSmog*, February 27, 2015, <https://doi.org/10.0336103.jpg.webp%20640w>.

<sup>345</sup> Readfearn, “What happened to the lobbyists”; Peter J. Jacques, Riley E. Dunlap, and Mark Freeman, “The Organisation of Denial: Conservative Think Tanks and Environmental Scepticism,” *Environmental Politics* 17, no. 3 (May 20, 2008): 349–85. <https://doi.org/10.1080/09644010802055576>. See also Katie Worth, *Miseducation: How climate change is taught in America*, Columbia Global Reports, 2021.

<sup>346</sup> Union of Concerned Scientists, “Introduction,” *The Climate Deception Dossiers*, Union of Concerned Scientists, 2015, <https://www.ucsusa.org/resources/climate-deception-dossiers>.

Many of the major oil companies who were active in the Global Climate Coalition were also active in Canada, particularly in the development of extraction projects in the Alberta oil sands. As opposition to these projects mounted, including from Indigenous communities, oil industry executives looked to promote scepticism about climate science in Canada too. To advance these efforts, they provided support and funding to Canadian organizations and think tanks including the Fraser Institute, the Friends of Science, the National Resource Stewardship Project, the CD Howe Institute and the Energy Probe Research Foundation.<sup>347</sup> These organizations pursued similar strategies as their US counterparts: publishing and promoting climate denialist books and papers, establishing lists of anti-climate science speakers, targeting media outlets to “provide balance,” running advertising campaigns, and again, supporting the development of educational materials for distribution in schools—all with the goal of confusing the public about the scientific consensus on climate change, promoting continued fossil fuel use, and stymying action to reduce emissions and limit oil sands expansion.<sup>348</sup>

In the last decade, the oil and gas industry’s messaging on climate has undergone a shift, even if their business plans have not.<sup>349</sup> Following the Paris Agreement in 2015, the publication of the 2018 IPCC report, the rise of the global youth climate strike movement, and the mounting evidence that climate change is now occurring, the industry and its associated think tanks have moved away from denying or questioning climate science to acknowledging that climate change is occurring and even presenting themselves as part of the solution.<sup>350</sup>

In Canada, the chief promoter of this new communications strategy has been the Pathways Alliance, a coalition of six of the largest fossil fuel companies operating in the oil sands: Canadian Natural, Cenovus, ConocoPhillips, Imperial Oil, MEG Energy, and Suncor. Established in 2021, the Pathways Alliance has a stated goal of achieving “net zero greenhouse gas (GHG) emissions from oil sands operations by 2050.”<sup>351</sup> But, as several studies have shown, their public messaging about net-zero climate commitments does not align with their actions, which remain focused on developing fossil fuel projects and opposing emission-reduction policies.<sup>352</sup> Their net-zero

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<sup>347</sup> Dembicki, *Petroleum Papers*, 167 -169. Aldous Sperl, “Climate Change Denial in Canada : An Evaluation of the Fraser Institute and Friends of Science Positions,” Carleton University Institutional Repository, 2023: 30, <https://repository.library.carleton.ca/concern/etds/0p0967399>; Ruth E. McKie, “Canada and Petro-Nationalism” in *The Climate Change Counter Movement: how the fossil fuel industry sought to delay climate action*, (Palgrave MacMillan, 2023): 115- 138; “Natural Resources Stewardship Project,” DeSmog, January 6, 2024, <https://www.desmog.com/natural-resources-stewardship-project/>; Zoë Yunker, “C.D Howe Institute,” Corporate Mapping Project, June 20, 2019, <https://www.corporatemapping.ca/profiles/c-d-howe-institute/>; “Friends of Science - SourceWatch,” www.sourcewatch.org, n.d., [https://www.sourcewatch.org/index.php?title=Friends\\_of\\_Science](https://www.sourcewatch.org/index.php?title=Friends_of_Science); “Natural Resources Stewardship Project,” DeSmog, January 6, 2024, <https://www.desmog.com/natural-resources-stewardship-project/>.

<sup>348</sup> Riley E. Dunlap and Peter J. Jacques, “Climate Change Denial Books and Conservative Think Tanks,” *American Behavioral Scientist* 57, no. 6 (February 22, 2013): 699–731, <https://doi.org/10.1177/0002764213477096>; Friends of Science, “Climate for Kids! | Friends of Science Calgary,” Friends of Science Calgary, March 28, 2024, <https://blog.friendsofscience.org/2024/03/27/climate-for-kids/>.

<sup>349</sup> Urgewald, “The 2023 Global Oil & Gas Exit List: Building a Bridge to Climate Chaos,” Banktrack, 2023, [https://www.banktrack.org/article/the\\_2023\\_global\\_oil\\_gas\\_exit\\_list\\_building\\_a\\_bridge\\_to\\_climate\\_chaos](https://www.banktrack.org/article/the_2023_global_oil_gas_exit_list_building_a_bridge_to_climate_chaos).

<sup>350</sup> Henry Shue, “Unseen urgency: delay as the new denial.” *Wiley Interdisciplinary Reviews: Climate Change* 14, no. 1 (2023): e809. U.S. House Committee on Oversight and Accountability, [Denial, Disinformation, and Doublespeak: Big Oil’s Evolving Efforts to Avoid Accountability for Climate Change](#). Joint Staff Report. April 2024.

<sup>351</sup> InfluenceMap, *The Canadian Oil Sands Playbook: An Analysis of Pathways Alliance*, June 2024. <https://influencemap.org/briefing/Pathways-Alliance-28367>

<sup>352</sup> InfluenceMap, *The Canadian Oil Sands Playbook*; Influence Map, *Big Oil’s Real Agenda on Climate Change 2022*, September 2022, <https://influencemap.org/report/Big-Oil-s-Agenda-on-Climate-Change-2022-19585>; Corporate Accountability, Global Forest Coalition and

messaging fails to make it clear that their commitment to this target (primarily through the technology of carbon capture, sequestration and storage—which is unproven at scale) relates only to emissions from production and does not include emissions from the consumption/end-use of fossil fuels, which comprise the majority of harmful emissions.<sup>353</sup> Further, promoting net-zero as the target, rather than the Paris goal of limiting warming to 1.5°C above pre-industrial levels, has served to obfuscate that what is needed is to rapidly transition away from fossil fuels.

Their misleading statements have drawn legal and regulatory action. In 2023, following a complaint from Greenpeace Canada, the federal Competition Bureau opened an investigation into the Pathways Alliance for greenwashing.<sup>354</sup> Then, in June 2024, the federal government passed Bill C-59, making it a requirement for Canadian companies to support their environmental claims with evidence. In response, the Pathways Alliance deleted the content from its website and social media, and numerous other oil and gas companies added disclaimers to their websites.<sup>355</sup>

### *E. False Solutions and Techno-optimism*

The fossil fuel industry in Canada and around the world has been pushing for a prioritisation of technological solutions to the climate crisis, in particular ones that would allow the industry to continue to operate as usual.<sup>356</sup> In many cases this has the effect of minimizing or delaying climate action.<sup>357</sup> The fossil fuel industry has directed considerable funds to university research to advance research on these narrow technological fixes.<sup>358</sup> They are also being promoted through industry-funded environmental education organizations. The two most frequently cited technologies are carbon capture and storage, and hydrogen.

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Friends of the Earth, *The Big Con: How big polluters are advancing a “net zero” climate agenda to delay, deceive, and deny*. June 2021, [https://corporateaccountability.org/wp-content/uploads/2021/06/The-Big-Con\\_EN.pdf](https://corporateaccountability.org/wp-content/uploads/2021/06/The-Big-Con_EN.pdf)

<sup>353</sup> M. Aronczyk, P. McCurdy, and C. Russill, “Greenwashing, Net-Zero, and the Oil Sands in Canada: The case of Pathways Alliance,” *Energy Research & Social Science*, 112, 2024, 103502 <https://doi.org/10.1016/j.erss.2024.103502>

<sup>354</sup> Carl Meyer and Fatima Syed, “What Do ‘Clean’ and ‘Green’ Actually Mean? Canadian Watchdog Receives Complaints about Environmental Claims by Shell, RBC, Enbridge,” *The Narwhal*, February 9, 2024, <https://thenarwhal.ca/competition-bureau-greenwashing-investigations/>.

<sup>355</sup> The Canadian Press, “Pathways Alliance Oilsands Group Removes All Website, Social Media Content,” *Financial Post*, June 20, 2024), <https://financialpost.com/commodities/energy/oil-gas/pathways-alliance-removes-content-anti-greenwashing-bill>.

<sup>356</sup> Naomi Oreskes, “The False Promise of Carbon Capture as a Climate Solution,” *Scientific American*, March 1, 2024, <https://www.scientificamerican.com/article/the-false-promise-of-carbon-capture-as-a-climate-solution/>

<sup>357</sup> Lamb et. al. “Discourses of Climate Delay”: 3-4.

<sup>358</sup> Emily Eaton and Jennie C Stephens, “How the Oil and Gas Industry Influences Higher Education,” *The Conversation*, September 8, 2024, <https://theconversation.com/how-the-oil-and-gas-industry-influences-higher-education-235168>.

## A. Carbon Capture and Storage

While CCS is being promoted by the oil and gas industry in Canada as a climate solution, critics point out that

- CCS has not been proven at scale, and in several cases CCS produced more emissions than it saved;
- CCS is used most often to pump more oil out of the ground through a process known as enhanced oil recovery, thereby actually increasing fossil fuel production;
- CCS only captures carbon at the site of production, not consumption, which is where the majority of emissions come from;
- CCS plants have also been found to harm local communities where they are established; and
- investments in CCS are taking funding away from the solutions needed to effect the transition off fossil fuels.<sup>359</sup>

In short, far from being a climate solution, CCS serves to greenwash the industry's operations and continue our reliance on fossil fuels, which are the primary driver of climate change.

## B. Hydrogen

Hydrogen is also being touted by the oil and gas industry as a clean fuel and a climate solution. Hydrogen can be used to produce high temperature heat that can power industrial processes while emitting no greenhouse gas emissions and it can be used to store energy and reduce emissions from vehicles.<sup>360</sup> However, the climate benefits of hydrogen depend on how it is produced and, most hydrogen is produced using fossil fuels through energy intensive processes that emit a lot of carbon pollution.<sup>361</sup> This kind of hydrogen is called grey hydrogen. If the emissions are stored, it is labelled blue hydrogen. Only so-called green hydrogen, which is produced using renewable energy, is actually a clean fossil fuel.<sup>362</sup> Globally, green hydrogen accounts for less than 0.7 percent of hydrogen production.<sup>363</sup>

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<sup>359</sup> Michael Buchsbaum and Edward Donnelly, "Fossil Fuel Companies Made Bold Promises to Capture Carbon. Here's What Actually Happened," *DeSmog*, September 26, 2023, <https://www.desmog.com/2023/09/25/fossil-fuel-companies-made-bold-promises-to-capture-carbon-heres-what-actually-happened/>; Alex Wilkins, "Most Schemes to Capture and Reuse Carbon Actually Increase Emissions," *New Scientist*, February 18, 2022, <https://www.newscientist.com/article/2308935-most-schemes-to-capture-and-reuse-carbon-actually-increase-emissions/>; Council of Canadians, "Carbon Capture Is Not a Climate Solution," *The Council of Canadians*, July 20, 2021, <https://canadians.org/media/carbon-capture-not-climate-solution/>; Charles Harvey and Kurt House, "Every Dollar Spent on This Climate Technology Is a Waste," *cee.mit.edu*, August 17, 2022, <https://cee.mit.edu/every-dollar-spent-on-this-climate-technology-is-a-waste/>.

<sup>360</sup> Daniel Vernick, "What Is Green Hydrogen, and How Can It Help Tackle the Climate Crisis?," *World Wildlife Fund*, 2024, <https://www.worldwildlife.org/stories/what-is-green-hydrogen-and-how-can-it-help-tackle-the-climate-crisis>;

<sup>361</sup> Robert W. Howarth and Mark Z. Jacobson, "How Green Is Blue Hydrogen?," *Energy Science & Engineering*, 9, (10), August 12, 2021, <https://doi.org/10.1002/ese3.956>.

<sup>362</sup> Hannes van der Watt, "What Is Hydrogen, and Can It Really Become a Climate Change Solution?" *The Conversation*, May 9, 2023, <https://theconversation.com/what-is-hydrogen-and-can-it-really-become-a-climate-change-solution-204513>.

<sup>363</sup> "Media Brief: Hydrogen as Part of Canada's Energy Transition," *Clean Energy Canada*, July 2, 2020, <https://cleanenergycanada.org/hydrogen-as-part-of-canadas-energy-transition/>.

When promoting hydrogen to the public as a clean fuel, the oil and gas industry usually fails to note these important distinctions between the ways in which hydrogen is produced, or fails to point out how little of the hydrogen that is produced is actually clean. Further, there are concerns about hydrogen itself as an “indirect greenhouse gas” with short-term but significant warming impacts, making leaks from hydrogen facilities a problem.<sup>364</sup> And, as with CCS, investments in hydrogen are taking funding away from the investments in clean energy and energy efficiency that are necessary for transitioning away from fossil fuels.<sup>365</sup>

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<sup>364</sup> Ilissa B. Ocko and Steven P. Hamburg. "Climate consequences of hydrogen emissions," *Atmospheric Chemistry and Physics* 22, no. 14, (2022) 9349-9368: <https://doi.org/10.5194/acp-22-9349-2022>

<sup>365</sup> Sonja Van Renssen, "The hydrogen solution?" *Nature Climate Change* 10, no. 9 (2020): 799-801. <https://doi.org/10.1038/s41558-020-0891-0>

## Appendix Two: The Uneven State of Climate Change Education in Canada

### Quickview

- Youth in Canada are asking for an education that empowers and equips them with the knowledge and skills to address the climate crisis and take action.
- Education and policy experts have identified climate change education as essential to enabling the transition off fossil fuels, advancing social equity, and developing more sustainable ways of living.
- As a signatory to the 2015 Paris Agreement, Canada is required to support the development of climate change education.
- Surveys have shown that climate change education in Canada is uneven and public climate literacy rates are low.
- The lack of government leadership and insufficient funding has created an opportunity for the fossil fuel industry to insert itself and exert its influence in this field.

### *A. Young people are asking for climate change education.*

In their 2022 national survey of youth climate anxiety, Lindsay Galway and Ellen Field found that of the 1,000 youth surveyed, “approximately 65% believe[d] that the education system in Canada should be doing more or a lot more to educate young people about climate change.” And “60% believe[d] that the formal education system should focus more on the social and emotional dimensions of climate change.” In response to the invitation to share their perspectives on what the education system could be doing, youth called for increased climate content in their courses, the teaching of solutions, mental health supports, and honesty about the risks and the urgency for action. Their responses included calls for “simply telling the truth about climate change” and being “honest and not giv[ing] students false hope.”<sup>366</sup>

These calls for improved climate change education are echoed by Canadian youth climate activists in Canada. The mass mobilization of young people in the 2018/2019 climate strikes inspired by the Swedish climate activist Greta Thunberg ignited discussions about the need for action across all sectors, including education, to support and advance systemic change.<sup>367</sup> Some youth activists have taken matters into their own hands and, in doing so, are bringing climate

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<sup>366</sup> Galway and Field, “Climate emotions and anxiety among young people in Canada”: 5.

<sup>367</sup> Benjamin Bowman, “‘They don't quite understand the importance of what we're doing today': the young people's climate strikes as subaltern activism,” *Sustainable Earth* 3, no. 1 (2020): 1-13. doi: 10.1186/s42055-020-00038-x; Sally Neas, Ann Ward, and Benjamin Bowman, “Young People's Climate Activism: A Review of the Literature,” *Frontiers in Political Science*, 4, (August 4, 2022), <https://doi.org/10.3389/fpos.2022.940876>; Kim Fry, “The Power and Promise of the Youth-Led Global Climate Movement” *ETFO Voice*, Spring 2020, <https://etfovoice.ca/feature/power-and-promise-youth-led-global-climate-movement>.

activism and education together in new ways.<sup>368</sup> Youth involved with Teach the Teacher have held presentations for teachers and make the point that they want climate change education to address how the climate crisis intersects with other issues of social justice as well.<sup>369</sup> And in BC, the youth-led group Climate Education Reform B.C. is calling for “the revision of the K–12 curriculum to implement education on a variety of topics, including climate justice,” as part of a comprehensive list of demands.<sup>370</sup>

In speaking to this issue, youth activists in Canada are joining a growing international youth movement for climate justice education. At the Mock Cop 2023, youth representatives from around the world issued a Youth Statement on Quality Climate Education that highlighted the need for education on the historic responsibility of the Global North for the impacts of climate change and the importance of education for the work of decarbonizing economies and societies. They also called for educational “materials and resources that are proven to be free from fossil fuel industry influence.”<sup>371</sup>

Many youth across Canada—and around the world—need and want climate change education that is evidence-based and addresses the need for an energy transition, empowers them to take action, supports the development of the emotional and social skills that nurture resilience, and addresses climate injustice.<sup>372</sup>

### ***B. Experts have identified climate change education as necessary to addressing the climate crisis.***

Education researchers and climate policy experts also recognize climate change education as an important lever to achieve a low-carbon future.<sup>373</sup> Summarizing recent studies, a 2024 report commissioned by the United Nations Educational, Scientific and Cultural Organization (UNESCO) and Monitoring and Evaluating Climate Change Education (MECCE), outlines how climate change education can empower youth to be agents of change by enhancing their understanding of the intersections between the systemic causes of climate change and its impacts; giving them the skills to advocate for policy change at all levels of government; and providing them with the training to accelerate the transition away from an extractive fossil fuel economy to a “green,

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<sup>368</sup> Ian McGimpsey, David Rousell, and Frances Howard, “A Double Bind: Youth Activism, Climate Change, and Education,” *Educational Review* 75, no. 1 (January 2, 2023): 1–8, <https://doi.org/10.1080/00131911.2022.2119021>.

<sup>369</sup> CBC News, “These Students Are Taking Action to Improve Climate Change Education in Schools,” CBC, September 24, 2021, <https://www.cbc.ca/news/science/what-on-earth-climate-change-classroom-1.6187138>.

<sup>370</sup> Climate Education Reform B.C., “Reform to Transform: Our Needs,” Reform To Transform, 2016, <https://www.climateeducationreformbc.ca/our-needs>.

<sup>371</sup> Mock Cop, “Youth Statement on Quality Climate Education,” 2023, <https://www.mockcop.org/site/uploads/2023/08/Mock-EMS-unified-youth-statement.pdf>.

<sup>372</sup> Carrie Karsgaard and Lynette Shultz. “Youth movements and climate change education for justice.” In *Oxford research Encyclopedia of Education*, 2022. <https://doi.org/10.1093/acrefore/9780190264093.013.1808>

<sup>373</sup> Deborah Nusche, Marc Fuster Rabella, and Simeon Lauterbach. “Rethinking education in the context of climate change: Leverage points for transformative change.” OECD Education Working Paper No 37 (2024) [https://one.oecd.org/document/EDU/WKP\(2024\)02/en/pdf](https://one.oecd.org/document/EDU/WKP(2024)02/en/pdf); Eugene C. Cordero, Diana Centeno, and Anne Marie Todd, “The Role of Climate Change Education on Individual Lifetime Carbon Emissions,” *PloS one* 15, no. 2 (2020): e0206266, <https://doi.org/10.1371/journal.pone.0206266>.

circular and regenerative” economy.<sup>374</sup>

These calls for action by researchers are mirrored and supported by international bodies, including the Organization for Economic Cooperation and Development (OECD) and the UN. In the face of the accelerating climate crisis, the OECD has called for education that will “provide the foundational knowledge and skills to identify and resolve environmental challenges, and shape attitudes and behaviors that lead to both individual and collective action.”<sup>375</sup>

The UN has similarly identified climate change education as essential to building societal “understanding of what it takes to shape a low-emissions and equitable future,” and has included education as a key plank in its Action for Climate Empowerment program—the program dedicated to work under Article 6 of the United Nations Framework Convention on Climate Change (UNFCCC) and Article 12 of the Paris Agreement.<sup>376</sup> UNESCO, which has been providing leadership through its Education for Sustainable Development Program, is now working with the UNFCCC to make education a “more central element of the international response to climate change.” UNESCO describes education as “crucial to addressing climate change, as it enables people to acquire the knowledge, skills, values and attitudes needed to mitigate the impact of global warming and contribute to sustainable development.”<sup>377</sup> They are calling for environmental education to be mandatory in all schools from 2025 onwards.<sup>378</sup>

### ***C. Canada's Commitments to Climate Change and Environmental Education Under International Agreements***

As a signatory to several international agreements and declarations, Canada has a responsibility to advance climate change education. These agreements include:

- The 1994 United Nations Framework Convention on Climate Change (UNFCCC), which requires, under Article 6, that all parties “promote and facilitate at the national and, as appropriate, subregional and regional levels, and in accordance with the national laws and regulations, and within their respective capacities: the development

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<sup>374</sup> Global Education Monitoring Report Team, *Education and Climate Change: learning to act for people and planet*, Paris: UNESCO 2024; Saskatoon, MECCE, 2024. <https://doi.org/10.54676/GVXA4765>

<sup>375</sup> OECD “Think Green: Education and climate change”, *Trends Shaping Education Spotlights*, No. 24, OECD Publishing, Paris, 2021: 1 <https://doi.org/10.1787/2a9a1edd-en>.

<sup>376</sup> United Nations, The United Nations Framework Convention on Climate Change, 1992. [https://unfccc.int/sites/default/files/convention\\_text\\_with\\_annexes\\_english\\_for\\_posting.pdf](https://unfccc.int/sites/default/files/convention_text_with_annexes_english_for_posting.pdf). United Nations, “Education and Training under Article 6 | UNFCCC,” Unfccc.int, 2019, <https://unfccc.int/topics/education-and-outreach/workstreams/education-and-training>; United Nations, “Paris Agreement” (United Nations, 2015), [https://unfccc.int/sites/default/files/english\\_paris\\_agreement.pdf](https://unfccc.int/sites/default/files/english_paris_agreement.pdf).

<sup>377</sup> UNESCO “UNFCCC & UNESCO Launching Action for Climate Empowerment Dialogue,” Unesco.org, 2023, <https://www.unesco.org/en/articles/unfccc-unesco-launching-action-climate-empowerment-dialogue>.

<sup>378</sup> UNESCO, “UNESCO Declares Environmental Education Must Be a Core Curriculum Component by 2025,” Unesco.org, 2022, <https://www.unesco.org/en/articles/unesco-declares-environmental-education-must-be-core-curriculum-component-2025>.

and implementation of educational and public awareness programmes on climate change and its effects.”<sup>379</sup>

- The 2015 Paris Agreement, which requires, under Article 12, that all parties take measures “as appropriate, to enhance climate change education, training, public awareness, public participation and public access to information, recognizing the importance of these steps with respect to enhancing actions under this Agreement.”<sup>380</sup>
- The 2022 Kunming-Montreal Global Biodiversity Framework, which recognizes that implementation of the framework “requires transformative, innovative and transdisciplinary education, formal and informal, at all levels, including science-policy interface studies and lifelong learning processes, recognizing diverse world views, values and knowledge systems of indigenous (*s/c*) peoples and local communities”; and calls for “Integrating transformative education on biodiversity into formal, non-formal and informal educational programmes, promoting curriculum on biodiversity conservation and sustainable use in educational institutions, and promoting knowledge, attitudes, values, behaviours and lifestyles that are consistent with living in harmony with nature.”<sup>381</sup>

In addition, Canada ratified the 1989 Convention on the Rights of the Child and, in so doing, affirmed a commitment to direct the education of the child to “the development of respect for human rights and fundamental freedoms, and for the principles enshrined in the Charter of the United Nations,” as well as to the “development of respect for the natural environment.” As climate change is a threat to both human rights and the natural environment, it could be argued that educating children about climate change and its solutions to address this threat is now required for Canada to fulfil its commitments under the Convention.<sup>382</sup>

#### ***D. The State of Climate Education in Canada***

As a signatory to international agreements, Canada is required to support climate change education. As well, there is a need for comprehensive climate change education to empower youth, counter fossil fuel misinformation, and accelerate mitigation and adaptation efforts.

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<sup>379</sup> United Nations, “United Nations Framework Convention on Climate Change” (United Nations, 1992), <https://unfccc.int/resource/docs/convkp/conveng.pdf>.

<sup>380</sup> United Nations, “Paris Agreement” (United Nations, 2015), [https://unfccc.int/sites/default/files/english\\_paris\\_agreement.pdf](https://unfccc.int/sites/default/files/english_paris_agreement.pdf)

<sup>381</sup> Convention on Biological Diversity, “Agenda Item 9A DECISION ADOPTED by the CONFERENCE of the PARTIES to the CONVENTION on BIOLOGICAL DIVERSITY 15/4. Kunming-Montreal Global Biodiversity Framework,” 2022, <https://www.cbd.int/doc/decisions/cop-15/cop-15-dec-04-en.pdf>.

<sup>382</sup> United Nations, “Convention on the Rights of the Child,” OHCHR (United Nations, November 20, 1989), <https://www.ohchr.org/en/instruments-mechanisms/instruments/convention-rights-child>. The issue of children’s rights and climate change education is briefly discussed in Ellen Field et al., “Climate Change Education within Canada’s Regional Curricula: A Systematic Review of Gaps and Opportunities,” *Canadian Journal of Educational Administration and Policy*, no. 202 (May 8, 2023): 159 - 60. <https://journalhosting.ucalgary.ca/index.php/cjeap/article/view/74980>.

However, studies of the state of climate change education have shown that while some steps have been taken, climate change education across the country remains uneven and climate literacy rates remain low.<sup>383</sup>

## **I. Climate Change Education in Canada is Uneven and Limited**

Under Canada's federated system, education is the responsibility of each province or territory. As a result, there is considerable variation in how climate change is covered. A 2021 study found that only six of 13 provinces and territories have curricular documents or education policy with a specific focus on climate change and sustainability.<sup>384</sup> Most concerning, according to Ellen Field's 2023 study of Canadian climate change education in Canada, is that curriculum expectations related to climate change occur most commonly in elective, rather than mandatory, high school courses, and across all jurisdictions there is a lack of "mandatory climate change expectations within curriculum documents."<sup>385</sup>

The amount of class time spent on climate change in classrooms is limited. A 2022 cross-Canada climate change education survey from Learning for A Sustainable Future found that 35 percent of educators did not cover climate change education at all in their classrooms, while of those who did teach climate change, 17 percent of educators spent only 3–5 hours of the year on climate change topics. Only 13 percent of educators spent 11 or more hours teaching climate change.<sup>386</sup>

These results are similar to those from a benchmark report from 2019, which found that educators who were teaching climate change spent 1–10 hours of instruction time on the subject per year or semester. Nevertheless, the number of educators not addressing climate change has gone down, from 57 percent in 2019 to 35 percent in 2022, indicating that a growing number of teachers feel the need to provide instruction on this topic.<sup>387</sup>

Even when climate change is included in the course curriculum, its inclusion is shallow. As climate change education researcher Ellen Field and others have noted, while lessons often cover the science of climate change, the causes and impacts, as well as the solutions, are insufficiently addressed. In relation to causes, she and her colleagues make the point that "very few expectations in Canada acknowledged fossil fuels as primary drivers." And in relation to action, they note that there is a "predominant focus on individual behaviour change," rather than

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<sup>383</sup> C. Hatch & M. Granados, *What Do Canadians Really Think About Climate Change?* Re.Climate: 2023. <https://reclimate.ca/wp-content/uploads/2023/05/2023-public-opinion-summary.pdf>

<sup>384</sup> Kathleen Aikens and Marcia McKenzie, "A Comparative Analysis of Environment and Sustainability in Policy across Subnational Education Systems," *The Journal of Environmental Education*, 52, no. 2 (February 28, 2021): 69; <https://doi.org/10.1080/00958964.2021.1887685>; Marcia MacKenzie and Nicola Chopin, [Tracking Sustainability in Canadian Primary and Secondary Education: Key Findings from a National Comparative Study](#), Sustainability and Education Policy Network, University of Saskatchewan, Saskatoon, Canada, 2023.

<sup>385</sup> Field et al., "Climate Change Education within Canada's Regional Curricula": 165.

<sup>386</sup> Learning for a Sustainable Future, *Canadian Perspectives on Climate Change and Education*, 2022: 8 <https://lsf-ist.ca/wp-content/uploads/2023/03/Canadians-Perspectives-on-Climate-Change-and-Education-2022-s.pdf>

<sup>387</sup> Ellen Field, Pam Schwartzberg, & Paul Berger, *Canada, Climate Change and Education: Opportunities for Public and Formal Education*, Learning for a Sustainable Future, 2019. [https://static1.squarespace.com/static/60cbc4fbc9e3e860799dd814/t/60dfc9bdc78f10f24ee198343/1625279457280/National\\_Climate\\_Change\\_Education\\_FINAL+%281%29.pdf](https://static1.squarespace.com/static/60cbc4fbc9e3e860799dd814/t/60dfc9bdc78f10f24ee198343/1625279457280/National_Climate_Change_Education_FINAL+%281%29.pdf)

on the “civic-oriented change making processes that shift how state or corporate actors behaved.”<sup>388</sup> In short, even in the limited time that climate change is taught in Canadian classrooms, the topic is often addressed in narrow terms that fail to engage students in understanding the scope of the problem or the actions required to address it.

## **II. Climate change education is not equipping students to evaluate misinformation, and climate literacy rates are low.**

The uneven and limited state of climate change education in Canadian schools means that students— and their teachers—are not being equipped with the skills to evaluate misinformation from the fossil fuel industry. When the issue of climate change is not given sufficient time and attention in the classroom, students and teachers remain vulnerable to industry misinformation that questions the scientific consensus on human-caused climate change, muddies understanding about the primary drivers of climate change, in particular the burning of fossil fuels, and obfuscates the urgent need to address climate change by transitioning away from fossil fuels.

The combined result of industry misinformation and limited climate change education in classrooms in Canada is that climate literacy is relatively low. This is evident in the following key findings from the 2022 Learning for a Sustainable Future (LSF) survey report, *Canadian Perspectives on Climate Change*.

- Only 21 percent of respondents could correctly answer eight or more general knowledge questions about climate change.
- 55 percent of respondents could correctly answer that carbon dioxide and other greenhouse gasses are the primary cause of climate change.
- 57 percent of respondents could correctly answer that oil and gas or transportation sectors are the largest emitters of greenhouse gasses.<sup>389</sup>

These findings show that many people in Canada (45 percent) still do not understand that the burning of fossil fuels is the primary driver of climate change. Nor, by implication, are they able to identify the transition away from fossil fuels as necessary to addressing climate change.

However, the LSF survey does not explicitly present the transition away from fossil fuels as a key solution. The only climate solutions that are explicitly mentioned are new technologies and individual behaviour change; the one instance in which the transition away from fossil fuels to renewable energy is mentioned is in a direct quote from a student.

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<sup>388</sup>Field et al., “Climate Change Education within Canada’s Regional Curricula”: 158, 169.

<sup>389</sup> Learning for a Sustainable Future, *Canadian Perspectives on Climate Change*: 7.

### **III. Teachers in Canada want more training and resources to provide effective climate change education.**

The poor state of climate change education and the limited climate knowledge of people in Canada is not the fault of teachers. Fully 71 percent of educators feel strongly that the education system should be doing “a lot more” to teach students about climate change, but currently many feel that they lack the training and resources to deliver good climate education effectively. Only one third of teachers feel confident enough to teach about climate change. When asked, 64 percent of Canadian teachers agreed with the statement: “I would like to include climate change education within my class but need professional development to feel better able to do so.”<sup>390</sup>

Teachers want more support. When asked, teachers said the top three items they needed were:

- climate change resources (lesson plans, videos, books) (56 percent);
- professional development opportunities on teaching climate change (52 percent); and for
- the Ministry to include more climate change topics in curriculum documents (49 percent).<sup>391</sup>

A majority of teachers feel that the responsibility for good climate change education should fall not on individual educators, who are already overloaded, but on governments and educational institutions, who have the resources to direct, fund, and develop comprehensive climate change education.<sup>392</sup> Governments, however, have yet to respond at the scale required to meet the educational needs of teachers and students.

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<sup>390</sup> Learning for a Sustainable Future, *Canadian Perspectives on Climate Change*: 11, 47.

<sup>391</sup> Learning for a Sustainable Future, *Canadian Perspectives on Climate Change*: 118.

<sup>392</sup> Karen S. Acton, “Teachers Need Bolder Action from Our School Boards to Educate in and for a Climate Emergency,” *The Conversation*, March 7, 2023, <https://theconversation.com/teachers-need-bolder-action-from-our-school-boards-to-educate-in-and-for-a-climate-emergency-199972>

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