



HOUSE OF COMMONS  
CHAMBRE DES COMMUNES  
CANADA

# **POST-COVID-19 ECONOMIC RECOVERY: HOW CAN WE REBUILD BETTER?**

**Report of the Standing Committee on Industry and  
Technology**

**Joël Lightbound, Chair**

**NOVEMBER 2022  
44th PARLIAMENT, 1st SESSION**

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### **Reports from committees presented to the House of Commons**

Presenting a report to the House is the way a committee makes public its findings and recommendations on a particular topic. Substantive reports on a subject-matter study usually contain a synopsis of the testimony heard, the recommendations made by the committee, as well as the reasons for those recommendations.

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# **THE STANDING COMMITTEE ON INDUSTRY AND TECHNOLOGY**

has the honour to present its

## **EIGHTH REPORT**

Pursuant to its mandate under Standing Order 108(2), the committee has studied Economic Recovery from COVID-19, and has agreed to report the following:



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# LIST OF RECOMMENDATIONS

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*As a result of their deliberations committees may make recommendations which they include in their reports for the consideration of the House of Commons or the Government. Recommendations related to this study are listed below.*

## **Recommendation 1**

**That, when implementing post-COVID-19 economic recovery initiatives while seeking to reduce Canada’s greenhouse gas emissions, the Government of Canada ensure that the initiatives support innovation at Canadian companies, especially small and medium-sized enterprises..... 39**

## **Recommendation 2**

**That, when implementing post-COVID-19 economic recovery initiatives while seeking to reduce Canada’s greenhouse gas emissions, the Government of Canada consider the impact of the initiatives on vulnerable populations, including, but not limited to, Indigenous Canadians, racialized Canadians, people with disabilities, low-income families, rural and remote communities and farmers, who may be particularly hard hit by energy prices. In addition, that, when developing and implementing these initiatives, the Government of Canada ensure that these vulnerable populations are consulted and fully included in the economic recovery. .... 39**

## **Recommendation 3**

**That, in consultation with affected groups, the Government of Canada take steps to increase the participation and general role of Indigenous Canadians in the various industries connected with the energy transition, including oil and gas, mining, hydrogen and forestry. For example, that it take concrete steps to meet the 5% Indigenous procurement target as quickly as possible. .... 39**

## **Recommendation 4**

**That the Government of Canada ensure that Canadian workers have access to retraining programs so they have the ability to work in sectors going through radical transformation. Where applicable, that it ensure that companies have the resources to create their own retraining programs and to encourage their employees to enrol. .... 39**

**Recommendation 5**

**That, in collaboration with the provinces and territories, the Government of Canada implement a comprehensive strategy for assessing the production cycle of various products, in order to determine their actual environmental cost so the government can make more informed decisions. This includes, but is not limited to, mineral extraction and production, the place and manner in which goods are produced and assembled and management of the resulting waste, while ensuring timely approval of projects in order to remain globally competitive and advance projects that are critical to building the low-carbon economy. .... 40**

**Recommendation 6**

**That, in collaboration with the provinces and territories, the Government of Canada implement a comprehensive strategy for a circular economy for recycling, similar to other provinces. .... 40**

**Recommendation 7**

**That the Government of Canada draw on examples of regulations to prohibit the practice of planned obsolescence and all associated techniques that deliberately aim to reduce product lifespans in favour of high replacement rates, and encourage environmental durability solutions amongst manufacturers..... 40**

**Recommendation 8**

**That the Government of Canada strengthen its approach in specific key sectors to fight climate change, including with strategies in the following sectors:**

- Strategic and critical minerals, to streamline rules to bring critical minerals to market;**
- Digital transformation;**
- Aeronautics, automobile and space industries;**
- Innovation research and investment. .... 40**

**Recommendation 9**

**That the Government of Canada immediately table a bill to strengthen the *Canadian Environmental Protection Act*..... 41**

**Recommendation 10**

**That the Government of Canada develop programs to support and develop the network of electric and intelligent transportation, that it increases the amounts devoted to transportation research and innovation in Canada, and that it immediately invests in organizations that are transition ready..... 41**

**Recommendation 11**

**That the Government of Canada lead the way in the energy transition, incorporating this transition into all its practices, particularly with regards to federal properties and vehicle fleets:**

- that it expedites the energy efficient transformation of federal properties, and that the subsidies received by companies are dependent upon the energy efficiency of their buildings;**
  
- that it finances a program of electric charging stations at Canada Post offices and for those municipalities that request them, and that it offer incentives for those purchasing hybrid or zero-emission vehicles to accelerate this transition. .... 41**







# POST-COVID-19 ECONOMIC RECOVERY: HOW CAN WE REBUILD BETTER?

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## INTRODUCTION

On 23 February 2021, the Standing Committee on Industry, Science and Technology (the Committee) adopted the following motion:

That the committee conduct the following studies in the following order:

...

A minimum of six meetings to examine how the government of Canada, as it shifts its focus to recovery, can support industries in their transition to greener and more sustainable practices, with support for territorial development and innovation initiatives, in order to ensure that Canada builds back better and stronger with a continued focus on industry competitiveness and expanded sustainable trade opportunities.<sup>1</sup>

As part of this study, the Committee heard from 50 witnesses and received four briefs in April and May 2021. The Committee would like to congratulate and thank the many witnesses – manufacturers as well as representatives of civil society, labour groups, and other organizations – who appeared before the Committee or submitted briefs. Their thoughtful comments highlighted the key challenges their sectors are facing, and their ideas will help the government develop its policies and budgets, as well as long-term measures and other initiatives that affect them.

## OVERVIEW OF THE SITUATION

### Canada's climate objectives

As demonstrated in its 2021 and 2022 budgets, as well as in recent announcements, the federal government is working to implement a more diversified economy while staying on track to achieve net-zero emissions by 2050.

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1 House of Commons, 2<sup>nd</sup> Session, 43<sup>rd</sup> Parliament, Standing Committee on Industry and Technology [INDU], [\*Minutes of Proceedings\*](#), 23 February 2021.



- 2021 plan – reduce emissions by 36% below 2005 levels by 2030.<sup>2</sup>
- 2022 plan – reduce emissions by 40% below 2005 levels by 2030.<sup>3</sup>

Canada’s new objective is now to reduce emissions by 40% to 45% below 2005 levels by 2030.<sup>4</sup>

Some witnesses presented measures that they thought the Government of Canada should implement to help Canada achieve its GHG reduction targets:

- Laure Waridel, of Mothers Step In, said that “real climate legislation must be passed” by the federal government, which in her opinion means that subsidies for fossil fuels must end and regulations must be passed that take into account how decisions affect the climate. She also said that “focus should be placed on the green tax system” to help internalize the environmental and social costs of products and services, for example by applying the polluter-pays principle.<sup>5</sup>
- Céline Bak, of Analytica Advisors, proposed a policy similar to the American CLEAN Future Act, where each federal agency would be given a decentralized mandate so it can plan how it will contribute to Canada’s achieving its climate objectives by 2030.<sup>6</sup>
- According to Mark Carney, of Brookfield Asset Management Inc., it is imperative to build a new financial system in order to achieve climate objectives in an inclusive and prosperous manner. In his opinion, the upcoming Conference of the Parties of the United Nations Framework Convention on Climate Change (COP) 26 in the fall of 2021 would put in place the tools required to ensure that every financial decision take environmental implications into account.<sup>7</sup>

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2 Government of Canada, [Budget 2021](#), p. 21.

3 Government of Canada, [Budget 2022](#), p. 89.

4 INDU, [Evidence](#), 27 April 2021, 1135 (Daniel Breton, Electric Mobility Canada). See also: Environment and Climate Change Canada, [Greenhouse Gas Emissions: Canadian Environmental Sustainability Indicators](#), 2021.

5 INDU, [Evidence](#), 11 May 2021, 1125 (Laure Waridel, Mothers Step In).

6 INDU, [Evidence](#), 29 April 2021, 1110 (Céline Bak, Analytica Advisors).

7 INDU, [Evidence](#), 27 May 2021, 1115 (Mark Carney, Brookfield Asset Management Inc.).

- A number of witnesses highlighted the importance of investing in Canadian enterprises focussed on the electrification of transportation and of developing a clean energy grid.<sup>8</sup> Francis Bradley, of the Canadian Electricity Association, added that the government could also support the industry by ensuring that it has the resources it needs to adopt innovative technologies.<sup>9</sup>

Some witnesses believed that Canada should take a radical approach if it wants to achieve its climate objectives. Danial Hadizadeh, of Mitrex: Integrated Solar Technology, pointed out that, since it is a “huge goal,” everyone needs to pitch in.<sup>10</sup>

Caroline Brouillette, of Climate Action Network Canada, argued that the federal government should scale up its investments to achieve its objectives. She explained that experts estimate that each nation should be spending 1% to 2% of its gross domestic product (GDP) every year to decarbonize its economy, while the amounts committed to climate spending by the federal government in Budget 2021 are closer to 0.25% of GDP. She added that the government must offer more than voluntary programs and incentives, because Canada’s GHG emissions have increased since 1990.<sup>11</sup> In her opinion, the magnitude of the challenge requires a revolutionary “moonshot” approach, much like the one used during the space race.<sup>12</sup>

Michel Chornet, of Enerkem, gave examples of regulations in place internationally to achieve GHG reduction targets. For example, he said that the Renewable Energy Directive, which governs all of Europe, is a “very interesting” model. He also explained that, in California, there is no requirement for companies to reduce their GHG emissions by 2% or 3% a year, but if they do not, they must pay a penalty of \$200 per ton.<sup>13</sup> This means that, while companies are not required to adopt low-carbon technologies, it is cheaper for them to do so. He added that the California model has spurred innovation, as it ensures transparency for the life cycle analyses of various technologies. Mr. Chornet

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8 INDU, [Evidence](#), 27 May 2021, 1115 (Carney); INDU, [Evidence](#), 27 April 2021, 1135 (Daniel Breton, Electric Mobility Canada); and INDU, [Evidence](#), 27 May 2021, 1120 (Francis Bradley, Canadian Electricity Association).

9 INDU, [Evidence](#), 27 May 2021, 1120 (Bradley).

10 INDU, [Evidence](#), 27 May 2021, 1130 (Danial Hadizadeh, Mitrex: Integrated Solar Technology).

11 See also: Government of Canada, [Greenhouse gas emissions](#).

12 INDU, [Evidence](#), 6 May 2021, 1120 (Caroline Brouillette, Climate Action Network Canada).

13 See also: California Air Resources Board, [Low Carbon Fuel Standard](#).



said that Canada should also ensure that any measures put in place support innovation.<sup>14</sup>

Other witnesses put forward concrete solutions for detecting and reducing GHG emissions:

- Sarah Sajedi, of ERA Environmental Management Solutions, explained that her company develops software and works closely with manufacturers to create solutions for their environmental sustainability problems. For example, many original equipment manufacturers (OEMs) in the automotive industry use ERA’s software to track their environmental impacts.<sup>15</sup>
- Eric Choi, director at GHGSat Inc., told the Committee about the work his company does using satellites to detect GHG emissions. He noted that, in 2021, GHGSat Inc. was “the only private sector or government entity in the world that has satellites capable of high-resolution greenhouse gas measurement down to a resolution of only 25 metres.” He added that its satellites were able to measure GHG emissions from sources as small as individual gas wells.<sup>16</sup> Mr. Choi explained that having actionable data is valuable for various stakeholders, in both the commercial and the financial sectors. Various regulatory bodies would also find the data useful.<sup>17</sup>

MDA, a Canadian space technology company, emphasized that space provides critical infrastructure in a number of sectors, including “monitoring climate change.”<sup>18</sup>

Some witnesses held the view that current circumstances make it unrealistic for Canada to achieve its climate objectives within 10 years. Mark P. Mills, of the Manhattan Institute, said that low-GHG technologies use significant quantities of metals and minerals. However, countries are not currently investing enough to produce these materials in great enough quantities to reach these objectives. He noted that it takes 16 years on average from when an ore body is discovered to when a mine is opened, and the process will take at least 10 years in Canada. In order to achieve emissions targets,

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14 INDU, [Evidence](#), 4 May 2021, 1200, 1210 (Michel Chornet, Enerkem).

15 INDU, [Evidence](#), 29 April 2021, 1115 (Sarah Sajedi, ERA Environmental Management Solutions).

16 INDU, [Evidence](#), 27 May 2021, 1125 (Eric Choi, GHGSat Inc.).

17 INDU, [Evidence](#), 27 May 2021, 1225 (Eric Choi, GHGSat Inc.).

18 MDA, [Brief](#).

production of these materials needs to be ramped up in the next 10 years, but it will take at least 10 years to open a new mine.<sup>19</sup> Mr. Mills said setting goals 10 and 15 years ahead was “silly”:

Energy transitions of the kind we’re talking about do not happen, and have never happened, at that velocity globally. They in fact won’t happen. I just have to say, in all candour, it’s just not possible.<sup>20</sup>

In his brief to the Committee, Robert Lyman, of ENTRANS Policy Research Group, confirmed that the cost of complete electrification in Canada would be several trillion dollars and would involve developing numerous technologies, which shows that it is not feasible within a few decades.<sup>21</sup>

Some witnesses provided data they believe shows that Canada has not made enough progress in its energy transition to realistically achieve its objective by 2030. Mr. Lyman pointed out that in 2021, 84% of the world’s primary energy consumption came from fossil fuels, and only 5% from renewables, showing that it will take time to diversify our energy sources.<sup>22</sup> Dan McTeague, of Canadians for Affordable Energy, noted that, when Canada went into lockdown, GHG emissions dropped by less than 10%. He asked whether Canadians would be on board with a sevenfold, seven-year lockdown to achieve climate objectives.<sup>23</sup> Mr. Lyman pointed out that, with the exception of a few countries in Europe, no country has ever met its emissions reduction target.<sup>24</sup>

To ensure that the measures put in place to achieve climate targets do not have unintended consequences, some witnesses pointed out the need to conduct a full analysis of the production chain. Mr. Mills noted that increasing the use of low-emission technologies, which are made from various minerals, will significantly increase mineral extraction, which is inherently energy-intensive. Canada and the United States are net importers of these technologies, and most of the mineral extraction is done abroad, making it difficult to assess the environmental impacts of producing these technologies. He pointed out that China accounts for a major share of mineral extraction, and that its electricity grid is primarily coal-powered.<sup>25</sup> Mr. McTeague warned that some of the

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19 INDU, [Evidence](#), 13 May 2021, 1130 (Mark P. Mills, Manhattan Institute).

20 INDU, [Evidence](#), 13 May 2021, 1140 (Mark P. Mills, Manhattan Institute).

21 Lyman, Robert, [Brief](#). The organization Our World in Data published [data](#) supporting these views.

22 INDU, [Evidence](#), 11 May 2021, 1205 (Robert Lyman, ENTRANS Policy Research Group).

23 INDU, [Evidence](#), 6 May 2021, 1225 (Dan McTeague, Canadians for Affordable Energy).

24 Lyman, Robert, [Brief](#).

25 INDU, [Evidence](#), 13 May 2021, 1125 (Mills).



measures put in place to reach climate targets could harm the Canadian economy. For example, he explained that under the Paris Agreement, which Canada ratified, Canada does not get any credit for natural gas that it could sell to prevent China or India from building more coal plants.<sup>26</sup>

Some witnesses replied to comments about whether climate targets were realistic. Daniel Breton, of Electric Mobility Canada, pointed out that some countries have more ambitious targets than Canada does.<sup>27</sup> Hugo Charette, of the Canadian Union of Postal Workers, said that he was “a little startled” by Mr. McTeague’s comments about the importance of waiting and moving incrementally, given the urgency of the situation.<sup>28</sup> According to Dr. Waridel, the unrealistic part is not setting GHG reduction targets so much as failing to tackle GHG emissions seriously. In her view, it is not a matter of asking whether it is possible; rather, it is about finding the means to achieve the objective as soon as possible.<sup>29</sup> From another angle, Mr. Lyman held the view that a climate catastrophe was not imminent. In his opinion, the greater risk is in how the federal government implements, or fails to implement, effective policies where the benefits outweigh the costs.<sup>30</sup>

## Post-COVID-19 economic recovery

### Economy and climate targets

Some witnesses held the view that the post-COVID-19 economic recovery could be an economic and environmental opportunity for Canada.<sup>31</sup> Several believed that a recovery built on climate targets could lead to higher short-term economic gains and drive long-term prosperity.<sup>32</sup> Brian O’Callaghan, of the University of Oxford, said that a group of renowned researchers had surveyed more than 230 leading economists and found that the fiscal responses to the pandemic that had the highest potential to boost the economy were those focussed on support for clean energy, natural capital, green

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26 INDU, [Evidence](#), 6 May 2021, 1205 (McTeague).

27 INDU, [Evidence](#), 27 April 2021, 1310 (Breton); and INDU, [Evidence](#), 27 May 2021, 1115 (Dave Carey, Canadian Canola Growers Association).

28 INDU, [Evidence](#), 6 May 2021, 1245 (Hugo Charette, Canadian Union of Postal Workers).

29 INDU, [Evidence](#), 11 May 2021, 1140 (Waridel).

30 Lyman, Robert, [Brief](#).

31 INDU, [Evidence](#), 27 April 2021, 1120 (Brian O’Callaghan, As an Individual); INDU, [Evidence](#), 27 April 2021, 1125 (Christina Franc, Canadian Association of Fairs and Exhibitions); INDU, [Evidence](#), 27 May 2021, 1105 (Dany Bonapace, As an Individual); and INDU, [Evidence](#), 13 May 2021, 1115 (Denis Leclerc, Écotech Québec).

32 INDU, [Evidence](#), 27 April 2021, 1120 (O’Callaghan); and INDU, [Evidence](#), 13 May 2021, 1115 (Leclerc).



building efficiency retrofits and green worker retraining initiatives.<sup>33</sup> Denis Leclerc, of Écotech Québec, noted that the World Bank had come to a similar conclusion.<sup>34</sup> Lastly, according to Christina Franc, of the Canadian Association of Fairs and Exhibitions, integrating green initiatives into event planning will help rebuild the public's confidence in mass gatherings following the COVID-19 pandemic.<sup>35</sup>

Multiple witnesses said that Canada is in a good position to prosper in a world seeking to reduce GHG emissions. They explained that more than 80% of electricity produced in Canada comes from sources that do not harm air quality, making Canada's electricity grid one of the cleanest in the world.<sup>36</sup> As a result, Canada can produce and export more lower-carbon products than other countries.<sup>37</sup> For instance, Canada produces lower-carbon aluminum and steel, and its pulp and paper industry emits the lowest GHGs per tonne. Mark Zacharias, of Clean Energy Canada, noted that many of Canada's largest trading partners are seeking to reduce their GHG emissions, which creates a huge economic opportunity for Canada, potentially triggering a massive increase in demand for many Canadian goods.<sup>38</sup> However, Mr. Zacharias noted that, if Canada wants to remain competitive, it must plan its economic transition and take steps to encourage industry and job growth, as the United Kingdom and the United States are already doing.<sup>39</sup>

Some witnesses presented data showing that intensive GHG emissions have direct negative effects on the Canadian economy. Mr. Breton pointed out that, according to Health Canada data, the socio-economic cost of air pollution on health has risen to \$120 billion a year.<sup>40</sup> Janet Sumner, of Wildlands League, noted that the World Economic Forum identified environmental problems as a top-tier concern for the economy.<sup>41</sup> Dr. Waridel said that, according to a number of scientific studies, it is "clear that our

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33 INDU, [Evidence](#), 27 April 2021, 1120 (O'Callaghan).

34 INDU, [Evidence](#), 13 May 2021, 1115 (Leclerc).

35 INDU, [Evidence](#), 27 April 2021, 1125 (Franc).

36 See also: Government of Canada, [Sources of pollution: electricity](#).

37 INDU, [Evidence](#), 4 May 2021, 1110 (Mark Zacharias, Clean Energy Canada); and INDU, [Evidence](#), 27 May 2021, 1120 (Bradley).

38 INDU, [Evidence](#), 4 May 2021, 1110 (Zacharias).

39 INDU, [Evidence](#), 4 May 2021, 1110, 1140 (Zacharias).

40 INDU, [Evidence](#), 27 April 2021, 1135 (Breton). See also: Government of Canada, [Outdoor air pollution and health: Overview](#).

41 INDU, [Evidence](#), 4 May 2021, 1125 (Janet Sumner, Wildlands League).



inaction will cost human lives and clearly damage the economy.”<sup>42</sup> In her view, economic transformation will also help prevent future health crises.<sup>43</sup>

Several witnesses spoke about projects showing a clear link between the economy and preserving biodiversity. For example:

- Ms. Sumner explained that the city of Windsor, Ontario, has been dealing with serious flooding issues in recent years. By rebuilding natural spaces in the surrounding area, the city of Windsor could mitigate flooding risks, protect endangered ecosystems and develop economic opportunities for local residents.<sup>44</sup>
- In 2021, the city of Scarborough had plans to restore wetlands in Rouge National Urban Park. According to Ms. Sumner, this project will create 25 direct jobs per year, and involve nine First Nations communities, as well as experts from a number of fields.<sup>45</sup>
- Geneviève Aubry, of Collectif Territoire, explained that the Osisko Lake rehabilitation project in Quebec has brought together engineers, scientists, artists and stakeholders from local universities and CEGEPs in an effort to address the damage caused by human activities. She added that this project is a technological showcase for industrial and mining companies that are active in the region.<sup>46</sup>

Ms. Sumner noted that, according to Green Infrastructure Ontario, tens of thousands of jobs could be created by investing in the building of natural infrastructure.<sup>47</sup> In her view, to ensure a healthy economic recovery, Canada must invest in rebuilding the natural world.<sup>48</sup>

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42 INDU, [Evidence](#), 11 May 2021, 1245 (Waridel).

43 INDU, [Evidence](#), 11 May 2021, 1125 (Waridel).

44 INDU, [Evidence](#), 4 May 2021, 1125 (Sumner).

45 INDU, [Evidence](#), 4 May 2021, 1125 (Sumner).

46 INDU, [Evidence](#), 13 May 2021, 1110 (Geneviève Aubry, Collectif Territoire).

47 See also: Green Infrastructure Ontario Coalition, [GIO Resources](#).

48 INDU, [Evidence](#), 4 May 2021, 1125 (Sumner).

Given the economic changes to come, a number of witnesses pointed out the need for government initiatives that promote skills upgrading.<sup>49</sup> According to Mr. O’Callaghan, there are not enough worker retraining initiatives in the recovery plans of most developed economies. In his view, these initiatives are very important in developing a workforce that is ready for new jobs not only in low-carbon sectors, but also in all economic sectors.<sup>50</sup> D.T. Cochrane, of Canadians for Tax Fairness, and Dr. Waridel both argued that the government must offer support to workers in carbon-intensive industries to help them make the transition.<sup>51</sup>

Some witnesses did not believe that focusing on building a low-GHG economy would necessarily lead to job creation.<sup>52</sup> For example, Mr. Lyman said that, while the Government of Ontario had estimated that it would gain 50,000 jobs by using more low-emission energy sources, the Fraser Institute estimates that Ontario’s electricity pricing policies led to the loss of 75,000 jobs in the manufacturing sector.<sup>53</sup> He added that wind and solar industry stakeholders often claim to offer “significant local employment benefits, notwithstanding the fact that almost all the major manufacturers of solar energy equipment are based in China and almost all the manufacturers [of] wind energy equipment are based in Europe and China.”<sup>54</sup>

### Private-sector support

According to some witnesses, encouraging the development of small and medium-sized enterprises (SMEs) in Canada also benefits the Canadian economy as a whole. According to Veso Sobot, of the Coalition of Concerned Manufacturers and Businesses of Canada, encouraging entrepreneurs to develop their companies, especially those who export, will help reduce government debt.<sup>55</sup> Dr. Cochrane said that it is important to support

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49 INDU, [Evidence](#), 27 April 2021, 1205 (Breton); and INDU, [Evidence](#), 6 May 2021, 1145 (Lauren Latour, Climate Action Network Canada).

50 INDU, [Evidence](#), 27 April 2021, 1200 (O’Callaghan).

51 INDU, [Evidence](#), 4 May 2021, 1105 (D.T. Cochrane, Canadians for Tax Fairness); and INDU, [Evidence](#), 11 May 2021, 1125 (Waridel).

52 INDU, [Evidence](#), 6 May 2021, 1200 (McTeague); and INDU, [Evidence](#), 11 May 2021, 1255 (Lyman).

53 INDU, [Evidence](#), 11 May 2021, 1255 (Lyman). See also: Fraser Institute, [Rising electricity costs kill 75,000 manufacturing jobs in Ontario](#).

54 Lyman, Robert, [Brief](#).

55 INDU, [Evidence](#), 11 May 2021, 1120 (Veso Sobot, Coalition of Concerned Manufacturers and Businesses of Canada).



small, local businesses, since they are what will keep communities thriving.<sup>56</sup> According to Priyanka Lloyd, of Green Economy Canada:

The support [provided] to small businesses now will determine not just Canada's ability to meet our international commitment [to reduce GHG emissions], but if we are successful in setting businesses on a path to a stronger and more resilient future.<sup>57</sup>

To support SMEs, Ms. Bak proposed measures similar to those implemented in the EU. She explained that the EU has a concerted strategy to enable SMEs to play a more significant role in its economy, requiring large project proponents to include SMEs in their project proposals.<sup>58</sup>

Some witnesses noted that SMEs can gain substantial benefits from greening their operations. For example, one credit union saved 30% off its annual electricity bill by installing a building automation system. According to Ms. Lloyd, reducing their GHG emissions helps SMEs stay competitive.<sup>59</sup> Some witnesses suggested supporting green innovation projects for SMEs, particularly in rural areas.<sup>60</sup> For example, they proposed providing tax credits for SMEs to implement green initiatives.<sup>61</sup> Ms. Lloyd criticized the fact that the green recovery initiatives announced in Budget 2021, while important, did little to help Canadian SMEs. She believes the budget should include ways to support SMEs to seize the low-carbon advantage.<sup>62</sup>

Other witnesses proposed initiatives to help early-stage start-ups offering new clean technologies. Lynne Manuel, of GreenCentre Canada, and Mr. Chornet explained that these companies face high costs, because developing clean technologies requires considerable technical work.<sup>63</sup> Ms. Manuel added that the government should do more to bridge the gap between research and development (R&D) and commercialization.<sup>64</sup> According to Frank Cairo, of the Advanced Building Innovation Company, tax relief and

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56 INDU, [Evidence](#), 4 May 2021, 1240 (Cochrane).

57 INDU, [Evidence](#), 27 April 2021, 1145 (Priyanka Lloyd, Green Economy Canada).

58 INDU, [Evidence](#), 29 April 2021, 1140 (Bak).

59 INDU, [Evidence](#), 27 April 2021, 1140 (Lloyd).

60 INDU, [Evidence](#), 27 April 2021, 1125 (Franc); and INDU, [Evidence](#), 27 May 2021, 1120 (Bradley).

61 INDU, [Evidence](#), 27 April 2021, 1125 (Franc); and INDU, [Evidence](#), 27 April 2021, 1300 (Lloyd).

62 INDU, [Evidence](#), 27 April 2021, 1140 (Lloyd).

63 INDU, [Evidence](#), 29 April 2021, 1250 (Lynne Manuel, GreenCentre Canada); and INDU, [Evidence](#), 4 May 2021, 1115 (Chornet).

64 INDU, [Evidence](#), 29 April 2021, 1120 (Manuel).

tax credits are the best ways to deal with R and D investment.<sup>65</sup> Mr. Choi noted that the federal government has an important role to play in supporting innovation, particularly for early-stage projects, because it lowers the risk these companies face. He also said that the government could support innovations beyond the initial R&D phase to help Canada build back better.<sup>66</sup>

Based on his experience with his company Enerkem, Mr. Chornet proposed creating a program that directly meets the needs of clean tech start-ups. In his opinion, this could drive economic recovery and reduce the long-term dependence of SMEs on federal funding. He pointed out that existing government policies do not meet the needs of clean energy start-ups, as the companies have difficulty accessing the talent and resources to be eligible. For example, in his experience, the administrative process for the Strategic Innovation Fund (SIF) was onerous, so Enerkem did not succeed in obtaining support. However, international players recognized Enerkem's expertise and agreed to invest.<sup>67</sup>

Some witnesses questioned the government support available to large companies. Mr. Breton commented that multinationals tend to get the most government support, though SMEs need it more.<sup>68</sup> Dr. Cochrane pointed out that many large companies had record profits during the pandemic, and therefore should not be getting government support.<sup>69</sup> Mr. Carney added that one way to help SMEs would be to ensure that larger businesses transition to net zero in a transparent fashion, because if they go beyond just taking into account emissions from their own activities, it will create an incentive for various SMEs that can promote GHG reductions.<sup>70</sup>

Other witnesses questioned whether companies need increased government support. According to Mr. Cairo, companies should not receive too much support, because they need to remain competitive and fend for themselves.<sup>71</sup> Mr. McTeague pointed out that a number of renewable-energy companies would not be able to survive without government subsidies.<sup>72</sup> Dr. Cochrane advised the government to stop trying to entice

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65 INDU, [Evidence](#), 6 May 2021, 1240 (Frank Cairo, Advanced Building Innovation Company).

66 INDU, [Evidence](#), 27 May 2021, 1125 (Choi).

67 INDU, [Evidence](#), 4 May 2021, 1200, 1150 (Chornet).

68 INDU, [Evidence](#), 27 April 2021, 1310 (Breton).

69 INDU, [Evidence](#), 4 May 2021, 1240 (Cochrane).

70 INDU, [Evidence](#), 27 May 2021, 1205 (Carney).

71 INDU, [Evidence](#), 6 May 2021, 1105, 1240 (Cairo).

72 INDU, [Evidence](#), 6 May 2021, 1115 (McTeague).



the private sector toward sustainability with tax incentives and low-interest loans. In his view, if the government spends what is needed to transform existing industries and develop new ones, the private sector will follow.<sup>73</sup>

## Inclusive recovery

A number of witnesses stated that the economic recovery should seek not only to meet Canada's climate targets, but also to be inclusive.<sup>74</sup> Dr. Cochrane said the pandemic demonstrated that government is a vital institution for equitable social protection and coordination. In his view, progressive tax measures reduce "inequality and the illegitimate power of the wealthy."<sup>75</sup> He added that, with regard to raising corporate tax rates, the United States and the United Kingdom are far more progressive than Canada.<sup>76</sup> According to Mr. O'Callaghan, it is also important for Canada's recovery to be inclusive beyond its borders; Canada should reclaim a leadership position in support of the world's most vulnerable nations.<sup>77</sup>

To promote an inclusive economic recovery, targeted government policies may be required. Rosemarie Powell, of the Toronto Community Benefits Network (TCBN), was disappointed that Budget 2021 was silent on infrastructure supports for racialized and Indigenous people, since it means that organizations applying for funding will not recognize the needs of these groups.<sup>78</sup> She highlighted the importance of using specific language for racialized people in employment programs, and including it in collective agreements.<sup>79</sup> She added that it is imperative for the federal government to ensure that large public infrastructure projects include community benefit agreements to provide jobs and business opportunities for various communities, particularly racialized people and persons with disabilities.<sup>80</sup> For instance, Kumsa Baker, also of TCBN, noted that TCBN

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73 INDU, [Evidence](#), 4 May 2021, 1105 (Cochrane).

74 INDU, [Evidence](#), 29 April 2021, 1240 (Heather Exner-Pirot, As an Individual); and INDU, [Evidence](#), 11 May 2021, 1125 (Waridel).

75 INDU, [Evidence](#), 4 May 2021, 1105 (Cochrane).

76 INDU, [Evidence](#), 4 May 2021, 1240 (Cochrane).

77 INDU, [Evidence](#), 27 April 2021, 1120 (O'Callaghan).

78 INDU, [Evidence](#), 27 April 2021, 1210 (Rosemarie Powell, Toronto Community Benefits Network).

79 INDU, [Evidence](#), 27 April 2021, 1215 (Powell).

80 INDU, [Evidence](#), 27 April 2021, 1145 (Powell).

was working with another group in Ottawa to ensure that governments are measuring the community benefits of the LeBreton Flats development project.<sup>81</sup>

Some witnesses highlighted the important role of Indigenous people in an inclusive economic recovery in Canada. Vincent Rousson, of the Université du Québec en Abitibi-Témiscamingue, mentioned the importance of recognizing the role of Indigenous people in the recovery. He said that “a key to the success of the Canadian economy is the integration of Indigenous people into that economy and the integration of their vision for the environment.”<sup>82</sup> Mr. Zacharias pointed out that the federal government could establish partnerships with Indigenous nations to use their land to develop technologies using renewable energy and promote their development.<sup>83</sup>

Heather Exner-Pirot, Macdonald-Laurier Institute, explained her view that some policies should not be imposed on Indigenous communities:

I can certainly appreciate the desire and the imperative to move toward a greener economy, but I want to caution the government against limiting through your policies what kinds of energy systems northern and indigenous communities can engage in and what kinds of resources they can invest in. I do have some concerns that our policy choices are limiting the opportunities that indigenous peoples have access to.<sup>84</sup>

Dr. Exner-Pirot criticized the fact that funding for initiatives in Indigenous communities is currently available only for low-carbon energy and green infrastructure. She said that the best opportunities for economic development for Indigenous communities are associated with the oil, gas and mining sectors. These sectors provide high-paying jobs in Indigenous communities. She explained that, when hydroelectricity is not a viable option, switching from diesel to natural gas produces fewer GHG emissions, but government programs preclude this transition because natural gas is a fossil fuel. In addition, due to the intermittent nature of wind and solar energy, they are not stand-alone solutions in Northern communities. She believes that the government is constraining the economic activities of Indigenous communities, when it should leave it up to them to choose what is best for their communities.<sup>85</sup> She further stated these communities are capable of doing their own environmental monitoring.<sup>86</sup>

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81 INDU, [Evidence](#), 27 April 2021, 1215 (Kumsa Baker, Toronto Community Benefits Network).

82 INDU, [Evidence](#), 13 May 2021, 1150 (Vincent Rousson, As an Individual).

83 INDU, [Evidence](#), 4 May 2021, 1230 (Zacharias).

84 INDU, [Evidence](#), 29 April 2021, 1125 (Exner-Pirot).

85 INDU, [Evidence](#), 29 April 2021, 1125, 1250 (Exner-Pirot).

86 INDU, [Evidence](#), 29 April 2021, 1125, 1250 (Exner-Pirot).





Dr. Exner-Pirot also pointed out that the resource development sector has gotten a lot better at procuring from Indigenous companies. However, she criticized the government for being slow in meeting its commitment to award 5% of federal procurement contracts to Indigenous companies.<sup>87</sup> In her opinion, as part of the economic recovery, Canada must “be much smarter on including Indigenous peoples meaningfully” and added that she did not think “we’ll get very far in developing any of these resources if we don’t do a better job.”<sup>88</sup>

### International comparison

A number of other countries have implemented economic recovery plans that incorporate their climate targets. Mr. Zacharias noted that 127 countries have adopted or are considering net-zero goals by 2050.<sup>89</sup> Some witnesses said that other countries have more ambitious targets than Canada or are further along in achieving their climate objectives.<sup>90</sup>

The Global Recovery Observatory provides data on COVID-19-related fiscal spending policies for the 50 leading economies to assess the potential environmental and socio-economic impacts. The data visualization is developed by the United Nations Development Programme (UNDP) and draws inspiration from a joint report by the University of Oxford and the United Nations Environment Programme.<sup>91</sup> Mr. O’Callaghan noted that, according to data from the Global Recovery Observatory, Canada had invested \$29 billion for “COVID-related green spending,” while France had invested \$60 billion, the United Kingdom \$40 billion, and the United States nearly \$1 trillion.<sup>92</sup> According to Mr. Zacharias, Canada can benefit from following their example.<sup>93</sup>

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87 See also: Government of Canada, *Mandate commitment: Creation of a 5% target in procurement-Indigenous business—Standing Committee on Indigenous and Northern Affairs—June 19, 2020*.

88 INDU, *Evidence*, 29 April 2021, 1240 (Exner-Pirot).

89 INDU, *Evidence*, 4 May 2021, 1110 (Zacharias).

90 INDU, *Evidence*, 27 April 2021, 1310 (Breton); INDU, *Evidence*, 4 May 2021, 1110 (Zacharias); and INDU, *Evidence*, 6 May 2021, 1230 (Brouillette).

91 Oxford University Economic Recovery Project, *Global Recovery Observatory*.

92 INDU, *Evidence*, 27 April 2021, 1120 (O’Callaghan).

93 INDU, *Evidence*, 4 May 2021, 1110 (Zacharias).

## ENERGY TRANSITION

### Developing low-emission technologies

Some witnesses discussed the scale of the changes required to usher in an energy transition that will reduce GHG emissions. Mr. Mills said that most of the world's energy comes from hydrocarbons (meaning oil, natural gas and coal) and that nearly all of the transportation kilometres around the world are made with internal combustion engines. Renewables account for a very low percentage of the world's energy. Furthermore, Canada and the United States are currently net importers of renewable energy devices and the components required to make them. Therefore, they will still be relying on hydrocarbons for decades to come.<sup>94</sup>

Witnesses spoke at length about the importance of supply chain management for a low-carbon energy transition.<sup>95</sup> Since low-carbon technologies are built with materials extracted from the earth, the energy transition may result in an increase in the physical quantities of materials mined per unit of energy service delivered.<sup>96</sup> Many countries define the materials necessary to develop these technologies as “critical minerals.”<sup>97</sup> A low-carbon economic recovery relies on these critical minerals. For example, the World Bank predicts that the production of critical minerals for clean technologies could increase by nearly 500% by 2050 (Figure 1).<sup>98</sup> The entire production cycle of these minerals will have a major effect on the environmental benefits, or lack thereof, of the energy transition, as well as the accompanying economic, political and social implications.<sup>99</sup>

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94 INDU, [Evidence](#), 13 May 2021, 1125 (Mills).

95 INDU, [Evidence](#), 4 May 2021, 1140 (Zacharias).

96 INDU, [Evidence](#), 13 May 2021, 1125 (Mills).

97 In March 2021, the Government of Canada published its [critical minerals list](#).

98 INDU, [Evidence](#), 4 May 2021, 1110 (Zacharias).

99 INDU, [Evidence](#), 13 May 2021, 1130 (Mills).



**Figure 1 – Forecasted Increase in Global Demand for the Minerals Needed for the Energy Transition (2018–2050)**



Source: Figure prepared by the Library of Parliament based on data obtained from the Government of Quebec, [Critical and Strategic Minerals – Québec Plan for the Development of Critical and Strategic Minerals 2020–2025](#), p. 2.

Most minerals needed to manufacture technologies for the energy transition are not mined in North America at this time.<sup>100</sup> For example, a battery has two components: the anode and the cathode. In 2021, 100% of anodes and 82% of cathodes were produced in China. Anodes are made of graphite, and 56% of graphite is from China; Europe and the United States do not produce any graphite at all.<sup>101</sup> Mr. Mills pointed out that small mines have left the United States and Canada. As well, due to excessive regulations in Canada that lead to delays, it is less risky for companies to open mines in countries with fewer regulations, which can exacerbate the negative consequences of mining minerals abroad.<sup>102</sup> Benoit La Salle, of SRG Graphite, pointed out that it will be even more

100 INDU, [Evidence](#), 13 May 2021, 1125 (Mills).

101 INDU, [Evidence](#), 29 April 2021, 1130 (Benoit La Salle, SRG Mining Inc.).

102 INDU, [Evidence](#), 13 May 2021, 1250 (Mills).

important for Canada to produce its own minerals and metals, because China has said that it no longer wants to export raw materials, and that it would prefer to export finished products such as cars or batteries instead.<sup>103</sup>

Canada has significant mining potential, but many witnesses mentioned the apparent lack of a strategy to tap into that potential.<sup>104</sup> Mr. Mills and Mr. La Salle both noted that Canada has the resources and the capacity to mine minerals and produce low-emission technologies, but it has fallen behind in this area.<sup>105</sup> Mr. La Salle criticized the fact that Chinese and European buyers have been acquiring lithium mines in Canada, while his Canadian company with international expertise has had difficulty buying a lithium mine.<sup>106</sup> The foreign companies that acquire these lithium mines will sell the minerals to buyers in their own countries.<sup>107</sup> Mr. La Salle noted that battery manufacturers need significant quantities of lithium, as well as other minerals. Therefore, it is important for Canada to have its own lithium supply if it wants to develop low-emission technologies within its borders.<sup>108</sup> Mr. La Salle added that it is important to manage critical minerals and the intellectual property attached to them in Canada very tightly and not openly.<sup>109</sup>

## Low-emission vehicles

Some witnesses discussed the transition to low-emission vehicles. Several said that the transportation sector was a major GHG emitter in Canada.<sup>110</sup> Mr. Breton explained that the transportation sector accounts for nearly one third of Canada's black carbon emissions.<sup>111</sup> To reduce GHG emissions in this sector, witnesses pointed to the importance of developing the electric vehicle industry. Mr. Breton explained that electric vehicles result in a savings of at least 20% in GHG emissions, but this number is likely to

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103 INDU, [Evidence](#), 29 April 2021, 1130 (La Salle).

104 After the Committee had heard from witnesses as part of this study, the federal government announced in [Budget 2022](#) that it would be investing in critical minerals, including a \$3.8-billion investment to implement Canada's first Critical Minerals Strategy.

105 INDU, [Evidence](#), 29 April 2021, 1130 (La Salle)., INDU, [Evidence](#), 13 May 2021, 1250 (Mills).

106 INDU, [Evidence](#), 29 April 2021, 1130 (La Salle).

107 INDU, [Evidence](#), 29 April 2021, 1210 (La Salle).

108 INDU, [Evidence](#), 29 April 2021, 1130 (La Salle).

109 INDU, [Evidence](#), 29 April 2021, 1130 (La Salle).

110 INDU, [Evidence](#), 27 April 2021, 1135 (Breton); and INDU, [Evidence](#), 6 May 2021, 1130 (Travis Allan, AddÉnergie Technologies Inc).

111 INDU, [Evidence](#), 27 April 2021, 1135 (Breton).



increase significantly in the years ahead.<sup>112</sup> He added that the environmental benefits of driving an electric car are seen after around 30,000 km.<sup>113</sup> In addition, 95% of the components in an electric vehicle's battery are recyclable.<sup>114</sup> Meanwhile, Mr. McTeague held the view that the environmental benefit of switching to electric vehicles would not be significant, because even if every vehicle with an internal combustion engine was taken off the road, the level of carbon emissions globally would not drop very much.<sup>115</sup>

Mr. Breton highlighted job opportunities resulting from the development of the zero-emission vehicle (ZEV) sector. He cited data from Clean Energy Canada that there could be nearly 560,000 jobs in the ZEV sector by 2030.<sup>116</sup> He added that Electric Mobility Canada is working on developing skills retraining programs. In his opinion, Canada needs to implement a plan as soon as possible:

We have a once-in-a-lifetime opportunity to create good quality jobs in the electric mobility sector in Quebec and Canada, an opportunity that won't come again. Things are really starting to ramp up all over the world, whether in China, Europe or the United States. If Canada does not adopt a plan to develop its own electric mobility industry, it will be left with scraps, both job- and vehicle-wise.<sup>117</sup>

While electric vehicles are ZEVs, it is important to consider the entire supply chain and the vehicle components (mineral mining, assembly, R&D, infrastructure, recycling, etc.) to determine the final environmental cost.<sup>118</sup> Mr. Mills pointed out that, since most batteries are produced in Asia, it increases the environmental cost of the car, since the primary form of energy used there is still coal. Since the supply chain is not transparent, there is no way to reliably assess the total environmental cost of an electric vehicle.<sup>119</sup> In his view, the fastest way to reduce GHG emissions would be to subsidize more efficient internal combustion engines.<sup>120</sup> Mr. Breton argued that the calculation of the

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112 INDU, [Evidence](#), 27 April 2021, 1155 (Breton).

113 INDU, [Evidence](#), 27 April 2021, 1205 (Breton).

114 INDU, [Evidence](#), 27 April 2021, 1250 (Breton).

115 INDU, [Evidence](#), 6 May 2021, 1200 (McTeague).

116 INDU, [Evidence](#), 27 April 2021, 1135 (Breton).

117 INDU, [Evidence](#), 27 April 2021, 1255 (Breton).

118 INDU, [Evidence](#), 27 April 2021, 1250 (Breton).

119 INDU, [Evidence](#), 13 May 2021, 1230 (Mills).

120 INDU, [Evidence](#), 13 May 2021, 1210 (Mills).

environmental cost of vehicles shows the importance of developing a production chain for electric vehicles in Canada and the United States.<sup>121</sup>

Witnesses spoke about the importance of establishing infrastructure to manufacture batteries in Canada. In 2021, 96% of electric vehicle batteries were manufactured in China, Japan and South Korea.<sup>122</sup> There were 240 battery manufacturing plants being built around the world, none of which were in Canada.<sup>123</sup> According to Mr. Breton and Mr. La Salle, this situation is not sustainable from an economic, environmental or geopolitical standpoint.<sup>124</sup> Mr. Breton added that Canada must avoid finding itself in a situation of dependence, such as that for oil with the Middle East where we “were mixed up in conflicts we wanted nothing to do with, all because we were heavily dependent on a single region for our oil.”<sup>125</sup> However, as Travis Allan, of AddÉnergie Technologies Inc., explained, Canada has both the natural resources and the expertise needed to build batteries.<sup>126</sup> Mr. Zacharias suggested that Canada should develop a self-sufficient battery and critical minerals supply chain in order to establish and grow domestic battery and clean-technology manufacturing.<sup>127</sup> According to Mr. Allan, Canada can and should become a leader in this field.<sup>128</sup>

Witnesses also stressed the importance of developing a production chain for electric vehicles in Canada and the United States. Mr. La Salle explained that batteries do not travel well, which means that it is important to build battery plants and auto assembly plants in close proximity to each other.<sup>129</sup> He also noted the environmental and economic repercussions of importing certain finished products. For instance, he explained that Lion Electric has facilities in Quebec to build electric school buses, but the

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121 INDU, [Evidence](#), 27 April 2021, 1250 (Breton).

122 INDU, [Evidence](#), 27 April 2021, 1210 (Breton).

123 INDU, [Evidence](#), 29 April 2021, 1130 (La Salle).

Please note that since these witnesses appeared before the Committee, some companies have announced plans to build battery plants for electric vehicles in Quebec and Ontario. See: BASF, [BASF acquires site for North American battery materials and recycling expansion in Canada](#), 4 March 2022; General Motors, [GM Expands its North America-focused EV Supply Chain with POSCO Chemical in Canada](#), 7 March 2022; and Government of Ontario, News release, [Ontario Secures Largest Auto Investment in Province’s History](#), 23 March 2022.

124 INDU, [Evidence](#), 27 April 2021, 1210 (Breton); and INDU, [Evidence](#), 29 April 2021, 1130 (La Salle).

125 INDU, [Evidence](#), 27 April 2021, 1210 (Breton).

126 INDU, [Evidence](#), 6 May 2021, 1130, 1135 (Allan.).

127 INDU, [Evidence](#), 4 May 2021, 1110 (Zacharias).

128 INDU, [Evidence](#), 6 May 2021, 1130, 1135 (Allan).

129 INDU, [Evidence](#), 27 April 2021, 1210 (Breton); and INDU, [Evidence](#), 29 April 2021, 1200 (La Salle).



ore travels 35,000 km from Quebec to China and then back, which is “not economical and it is certainly not environmentally friendly.”<sup>130</sup>

The federal government could implement any number of initiatives to accelerate the adoption of electric vehicles. Multiple witnesses recommended that Canada establish a transportation electrification strategy, including a supply chain strategy for ZEVs.<sup>131</sup> Mr. Breton proposed that Canada adopt a strategy similar to those announced in Quebec, British Columbia and California to promote the transition to these vehicles.<sup>132</sup> According to Ms. Brouillette, the strategy must also include requiring auto retailers to increase their sales of electric vehicles to 100% of all new vehicles by 2035.<sup>133</sup> Some witnesses also proposed providing incentives, such as rebates for the purchase of hybrid or zero-emission vehicles, to accelerate the transition.<sup>134</sup>

To increase the adoption of electric vehicles, it is important to ensure that enough charging stations are installed.<sup>135</sup> Mr. Allan noted that in 2021, the American government announced an investment in 500,000 charging stations. In his opinion, few Canadians will choose an electric vehicle if they do not have access to charging stations nearby.<sup>136</sup> Gary Vegh, of ERA Environmental Management Solutions, highlighted that adding charging stations would not be that expensive; his company is small and does not have as many resources as a large company such as Tesla, and it still installed 16 charging stations.<sup>137</sup> Mr. Allan pointed out that the Electric Vehicle and Alternative Fuel Infrastructure Deployment Initiative (EVAFADI) and the Zero Emission Vehicle Infrastructure Program are critical government initiatives to build out public charging stations and ensure that all Canadians have access to cheaper electric transportation.<sup>138</sup>

Josipa Gordana Petronic, of the Canadian Urban Transit Research and Innovation Consortium, spoke about the development of electric buses in Canada. She explained that it would cost \$12 billion to produce 15,000 electric buses, and that Budget 2021 had

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130 INDU, [Evidence](#), 29 April 2021, 1215 (La Salle).

131 INDU, [Evidence](#), 27 April 2021, 1205 (Breton), 6 May 2021; INDU, [Evidence](#), 6 May 2021, 1120 (Brouillette); and INDU, [Evidence](#), 6 May 2021, 1220 (Allan).

132 INDU, [Evidence](#), 27 April 2021, 1135 (Breton).

133 INDU, [Evidence](#), 6 May 2021, 1120 (Brouillette).

134 INDU, [Evidence](#), 27 April 2021, 1205 (Breton); and INDU, [Evidence](#), 6 May 2021, 1130 (Allan).

135 INDU, [Evidence](#), 27 April 2021, 1205 (Breton); and INDU, [Evidence](#), 6 May 2021, 1130, 1255 (Allan).

136 INDU, [Evidence](#), 6 May 2021, 1130, 1255 (Allan).

137 INDU, [Evidence](#), 29 April 2021, 1250 (Gary Vegh, ERA Environmental Management Solutions).

138 INDU, [Evidence](#), 6 May 2021, 1300 (Allan).



already earmarked \$2.75 billion for zero-emission bus (ZEB) technologies and \$15 billion in permanent public transit funding. In her view, the government should also spend some \$10 million on feasibility studies to help identify the best options.<sup>139</sup> Dr. Petrunic confirmed that “low-carbon smart mobility is a critical area for Canadians.” She believes the federal government should partner with municipalities in this area.<sup>140</sup> She added that it is important for the federal government to invest in transit agencies that have already taken steps to transition to ZEBs.<sup>141</sup> Lastly, she said that producing low-carbon buses would create hundreds of thousands of jobs in Canada.<sup>142</sup>

To speed up reductions in GHG emissions in the transportation sector, some witnesses suggested that the federal government procure electric vehicles for its many fleets.<sup>143</sup> Jean-Philippe Grenier, of the Canadian Union of Postal Workers, proposed electrifying Canada Post’s fleet of vehicles. He explained that Canada Post is a significant emitter of GHGs and has the largest fleet of vehicles in Canada. It could replace traditional vehicles at the end of their useful life with electric models. Mr. Grenier explained that one option would be to install charging stations at the 6,100 post offices in Canada. This would mean that rural communities would have recharge locations available, bridging the existing gap.<sup>144</sup> He said that Canada should develop expertise in electric vehicles in very cold climates, since Canada Post needs vehicles that can hold up in a Canadian winter.<sup>145</sup> In his opinion, it would be a good way for Canada to show leadership in vehicle electrification.<sup>146</sup>

Some witnesses criticized Canada Post’s current approach, which focuses on hybrid technologies instead of vehicle electrification.<sup>147</sup> Mr. Charette did not understand why Canada Post is focusing on hybrid technologies, when it is old technology. He was disappointed with Canada Post’s announcement of a new pilot project for electric vehicles, when it had already completed one previously.<sup>148</sup> Mr. Grenier was critical of the

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139 INDU, [Evidence](#), 11 May 2021, 1200 (Josipa Gordana Petrunic, Canadian Urban Transit Research and Innovation Consortium).

140 INDU, [Evidence](#), 11 May 2021, 1115, 1210 (Petrunic).

141 INDU, [Evidence](#), 11 May 2021, 1210 (Petrunic).

142 INDU, [Evidence](#), 11 May 2021, 1115 (Petrunic).

143 INDU, [Evidence](#), 27 April 2021, 1205 (Breton); and INDU, [Evidence](#), 6 May 2021, 1150 (Allan).

144 INDU, [Evidence](#), 6 May 2021, 1115 (Jean-Philippe Grenier, Canadian Union of Postal Workers).

145 INDU, [Evidence](#), 6 May 2021, 1220 (Grenier).

146 INDU, [Evidence](#), 6 May 2021, 1120 (Charette).

147 INDU, [Evidence](#), 6 May 2021, 1115 (Grenier).

148 INDU, [Evidence](#), 6 May 2021, 1155 (Charette).



fact that Canada Post was planning to install only a small number of recharging stations across Canada when it has more than 6,000 locations available, and that Canada Post decided to work with an American company to install these charging stations, when it could have collaborated with a Canadian company such as AddÉnergie.<sup>149</sup> Mr. Charette pointed out that, in early 2021, the American government called for the full electrification of the United States Postal Service.<sup>150</sup>

## Cost of energy

The various measures associated with the energy transition are affecting the cost of energy across the country. Given this fact, some witnesses spoke about the importance of affordable energy. Mr. McTeague explained that he was in favour of the energy transition, but in his opinion it should not be the top priority: he said it should take a back seat to cost when Canadians are experiencing financial difficulty.<sup>151</sup> For instance, some witnesses pointed out that the cost of electricity went up for Ontarians in 2009 when the Ontario government passed the *Green Energy Act*.<sup>152</sup> Mr. Lyman added that the Auditor General of Ontario's 2015 report found that the cost of electricity went up 80% between 2004 and 2014.<sup>153</sup>

Witnesses held differing views on the carbon tax. Mr. McTeague believed that the carbon tax was very expensive for Canadian families and was hurting farmers.<sup>154</sup> In contrast, Dr. Cochrane thought that the federal government's carbon tax did not go far enough: he proposed modifying the tax to ensure that foreign emitters do not get preferential treatment and that households and communities moving away from fossil fuels get support.<sup>155</sup> Dr. Waridel, meanwhile, said that this tax is only a first step, and that the polluter-pays principle should be applied along the entire supply chain, to ensure that each person takes responsibility for their environmental footprint.<sup>156</sup>

Witnesses also spoke about the Clean Fuel Standard, which was scheduled to come into force in late 2022. This standard will require liquid fuel (gasoline, diesel and natural gas)

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149 INDU, [Evidence](#), 6 May 2021, 1115 (Grenier).

150 INDU, [Evidence](#), 6 May 2021, 1155 (Charette).

151 INDU, [Evidence](#), 6 May 2021, 1145 (McTeague).

152 INDU, [Evidence](#), 11 May 2021, 1105 (Lyman); and INDU, [Evidence](#), 11 May 2021, 1235 (Sobot).

153 INDU, [Evidence](#), 11 May 2021, 1105 (Lyman).

154 INDU, [Evidence](#), 6 May 2021, 1115, 1210 (McTeague).

155 INDU, [Evidence](#), 4 May 2021, 1105 (Cochrane).

156 INDU, [Evidence](#), 11 May 2021, 1125 (Waridel).

suppliers to gradually reduce the carbon intensity of the fuels they produce and sell for use in Canada.<sup>157</sup> According to Mr. Chornet, the way the standard is implemented must support Canadian innovation.<sup>158</sup> In his view, it must include an analysis of the entire lifecycle of a product, by offering, for example, credits for diverting waste from landfill sites, or for the percentage of recycled components.<sup>159</sup> Mr. McTeague viewed the Clean Fuel Standard as a second carbon tax that would drive up the cost of energy in Canada.<sup>160</sup> He said that, when the government puts measures in place, it needs to take into account the associated costs. He explained that the government had never done a cost-benefit analysis of the Clean Fuel Standard: according to his calculations, for every dollar of environmental benefit of a clean fuel standard, it costs the public six dollars.<sup>161</sup>

## Hydrogen

Over the course of its study, the Committee heard differing points of view on the use of hydrogen as a low-emission energy source. On the one hand, François Giroux, a consultant in the development of innovative transport solutions, explained the benefits of developing the hydrogen sector in the transportation industry. He explained that the weight and size of the batteries used for electric vehicles limit the carrying capacity of a vehicle and the distance it can travel, particularly when it comes to transport trucks and buses. In his opinion, even if battery capacity improves, hydrogen batteries are still one of the best solutions available. He pointed out that hydrogen batteries were being manufactured in British Columbia in 2021. A vehicle with a hydrogen battery can transport very heavy loads. In his view, hydrogen batteries are the best option for the electrification of the transport industry.<sup>162</sup>

On the other hand, some witnesses were skeptical of the environmental benefits of using hydrogen. Mr. Breton emphasized that the environmental footprint of hydrogen can vary considerably. He thought that hydrogen batteries should be reserved for heavy-duty vehicles, such as boats or planes.<sup>163</sup> Mr. Mills noted that producing hydrogen is energy-intensive, and that it would take a very long time to see a significant

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157 Government of Canada, [What is the clean fuel standard?](#). Please note that it is now called the [Clean Fuel Regulations](#).

158 INDU, [Evidence](#), 4 May 2021, 1115 (Chornet).

159 INDU, [Evidence](#), 4 May 2021, 1145 (Chornet).

160 INDU, [Evidence](#), 6 May 2021, 1115 (McTeague).

161 INDU, [Evidence](#), 6 May 2021, 1205 (McTeague).

162 INDU, [Evidence](#), 27 May 2021, 1110 (François Giroux, As an Individual).

163 INDU, [Evidence](#), 27 April 2021, 1210 (Breton).



environmental effect with hydrogen, given the resources necessary and the high cost of producing it. He added that another challenge is that hydrogen is difficult to store.<sup>164</sup>

Mr. Giroux addressed many of the concerns raised by other witnesses. For example, he explained that hydrogen could be stored more easily if containers more suitable to its physical properties were developed. He also said that Quebec can produce clean hydrogen using hydroelectricity. Furthermore, hydrogen development is well under way in Europe already: France and Spain are working on deploying 300 hydrogen refuelling stations by 2030. He suggested that the Government of Canada could establish incentives to promote hydrogen refuelling infrastructure along highways, for transportation and car travel, so that this type of fuel is available to the industry, from production to distribution. In his view, accessibility is key to its success.<sup>165</sup>

## Waste management

Witnesses spoke about the various waste-management practices and technologies.

Ms. Sajedi criticized the fact that waste management does not have the same sort of rules as water treatment.<sup>166</sup> According to several witnesses, incentives must be put in place for reusing products and materials and for adopting a circular economy perspective.<sup>167</sup> According to Ms. Sajedi, the federal government should establish rules and methods, even if municipalities are ultimately responsible for implementing them.<sup>168</sup> Meanwhile, the Canadian Canola Growers Association (CCGA) explained that Canadian canola is used as a biodiesel feedstock in Canada, the United States and the European Union. It said that the Clean Fuel Standard has the potential to increase domestic demand for Canadian canola. It recommended that the federal government enable a growing biofuel industry in Canada by incentivizing the use of Canadian feedstock through a streamlined compliance process as part of this new standard.<sup>169</sup>

According to Mr. Chornet, Canada has a unique opportunity to develop an advanced recycling model, which would keep the chemical and petrochemical industries

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164 INDU, [Evidence](#), 13 May 2021, 1215 (Mills).

165 INDU, [Evidence](#), 27 May 2021, 1215 (Giroux).

166 INDU, [Evidence](#), 29 April 2021, 1145 (Sajedi).

167 INDU, [Evidence](#), 11 May 2021, 1215 (Émilie Robert, Mothers Step In); INDU, [Evidence](#), 29 April 2021, 1145 (Sajedi); and INDU, [Evidence](#), 11 May 2021, 1150 (Waridel).

168 INDU, [Evidence](#), 29 April 2021, 1145 (Sajedi).

169 Canadian Canola Growers Association (CCGA), [Brief](#).

competitive by significantly reducing GHGs and creating good jobs. He explained that the Canadian model of advanced chemical recycling would be based on infrastructure already in place, such as low-carbon electricity, and on non-recyclable waste, which is a major source of carbon. In his view, in order for Canada to achieve its climate goals, the government must create favourable market conditions for rolling out innovative solutions. For instance, it could establish an investment tax credit to make it easier for bioenergy companies to finance projects.<sup>170</sup>

Mr. Chornet spoke about what his company, Enerkem, had accomplished in the area of waste management. He explained that Enerkem had implemented advanced recycling technology, which produces advanced biofuels and renewable chemicals from biomass and non-recyclable waste. He noted that developing new technologies requires a lot of R&D, which in turn requires securing private and public capital. He highlighted that even though a technology has reached commercial maturity, additional investments in innovation are required in order to remain competitive.<sup>171</sup> He added that it is beneficial for Canadian companies to work together to find innovative solutions. For example, Enerkem has established a partnership with Suncor, an oil company, to find solutions that reduce GHG emissions and create good jobs.<sup>172</sup>

It is also worth considering strategies being used internationally to encourage the development of innovative waste-management solutions. Mr. Chornet explained that Europe and the United States have passed regulations encouraging the use of second-generation, low-carbon fuels, or the products of green chemistry. That means that Enerkem is better off selling its products in California or Europe, because their regulations encourage companies to choose green chemistry. In his view, Canada will have to create market conditions favourable to launching projects and using biofuels in order to benefit from the GHG reductions associated with green chemistry.<sup>173</sup>

## Fossil fuels

Over the course of its study, the Committee heard a wide range of perspectives on managing oil and gas. While some witnesses believe they still have a key role to play in the Canadian economy, others think it is time to transform the industry.

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170 INDU, [Evidence](#), 4 May 2021, 1115 (Chornet).

171 INDU, [Evidence](#), 4 May 2021, 1115 (Chornet).

172 INDU, [Evidence](#), 4 May 2021, 1235 (Chornet).

173 INDU, [Evidence](#), 4 May 2021, 1145 (Chornet).



Some witnesses shared the view that the oil and gas industry still has an important role to play in the Canadian economy. Grant Fagerheim, of Whitecap Resources Inc., explained that everyone relies on oil and natural gas, because most of the products in everyday society and in the medical field rely on oil and gas.<sup>174</sup> Multiple witnesses argued that the energy transition cannot happen without fossil fuels.<sup>175</sup> All forms of energy must be considered as part of the economic recovery.<sup>176</sup> Dr. Exner-Pirot added that, if Canada can attract more investment, the years ahead can be prosperous ones for oil and gas and mining projects, which will be critical for the post-pandemic economic recovery, especially in rural and remote regions.<sup>177</sup> Mr. Fagerheim expressed frustration that the Canadian oil and gas industry is recognized internationally for its carbon sequestration and storage capacity, but not domestically. He added that products in the Canadian oil and gas sector are developed responsibly, and the industry deserves recognition within Canada.<sup>178</sup>

Witnesses discussed developments in carbon capture and storage technology that would limit GHG emissions in the fossil fuel sector. Some witnesses said these technologies are very important and can have positive impacts for Canada, particularly for business investment, the environment, job creation and economic growth in general.<sup>179</sup> Mr. Zacharias said that Canada has a significant amount of basaltic geological formations, as well as used oil and gas reservoirs where CO<sub>2</sub> could be stored.<sup>180</sup> Mr. Fagerheim explained that his company acquires CO<sub>2</sub>, recycles about one third, and sequesters and stores the rest, all without any government credits.<sup>181</sup> In his opinion, the Canadian government should expand federal tax credits for capturing and storing carbon to include all carbon capture, utilization and storage (CCUS) projects in the tax credit structure, as is already the case in the United States.<sup>182</sup>

From another angle, some witnesses thought these industries had already received significant amounts of funding. For instance, Ms. Brouillette said that fossil fuel subsidies

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174 INDU, [Evidence](#), 4 May 2021, 1135 (Grant Fagerheim, Whitecap Resources Inc.).

175 INDU, [Evidence](#), 6 May 2021, 1230 (McTeague); INDU, [Evidence](#), 29 April 2021, 1125 (Exner-Pirot); and INDU, [Evidence](#), 4 May 2021, 1120 (Fagerheim).

176 INDU, [Evidence](#), 29 April 2021, 1125 (Exner-Pirot); and INDU, [Evidence](#), 4 May 2021, 1120 (Fagerheim).

177 INDU, [Evidence](#), 29 April 2021, 1125 (Exner-Pirot).

178 INDU, [Evidence](#), 4 May 2021, 1135 (Fagerheim).

179 INDU, [Evidence](#), 4 May 2021, 1120 (Fagerheim); and INDU, [Evidence](#), 27 May 2021, 1225 (Carney).

180 INDU, [Evidence](#), 4 May 2021, 1235 (Zacharias).

181 INDU, [Evidence](#), 4 May 2021, 1210 (Fagerheim).

182 INDU, [Evidence](#), 4 May 2021, 1120 (Fagerheim).

increased during the pandemic, which she believes is contributing to slowing down the energy transition.<sup>183</sup> According to Dr. Cochrane, a number of large oil and gas companies have enjoyed record profits thanks to decades of carbon subsidies from the government. He said that it is “disconcerting to hear people complain that the fossil fuel industry is not getting the credit it deserves when the fossil fuel industry has been incredibly overdeveloped because we had the carbon subsidy in place.”<sup>184</sup> Dr. Waridel said that tens of billions of dollars have been funnelled into the oil and gas sector since the beginning of the pandemic.<sup>185</sup> In her opinion, the federal government should stop subsidizing fossil fuels, because investing in infrastructure means that it needs to remain profitable for decades to come, which puts Canada at a disadvantage in the “race for carbon neutrality.”<sup>186</sup>

Witnesses discussed the negative economic repercussions of the energy transition on jobs in the oil and gas sector. Mr. Breton cited data from a report released by TD Economics, which estimates that between 312,000 and 450,000 of Canada’s current 600,000 direct and indirect jobs in the oil and gas sector could disappear by 2050 due to the falling demand for fossil fuels.<sup>187</sup> Lauren Latour, of Climate Action Network Canada, said that the government must support affected workers and communities as certain jobs and industries are phased out: they should not have to shoulder the burden of this transition.<sup>188</sup>

Lastly, Ms. Bak talked about ways to manage the decline in the oil and gas sector. She proposed, as part of an economic recovery plan to “build back better,” that the government invest \$40 billion to take Canada’s oil resources into a new era, one where bitumen is used for something other than combustion. For instance, it could be used to create high-value materials that are extremely light and important to the electric vehicle production chain.<sup>189</sup> She added that some regions had already put policies in place to establish a managed decline of the fossil fuel industry. For example, Denmark will stop

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183 INDU, [Evidence](#), 6 May 2021, 1235 (Brouillette).

184 INDU, [Evidence](#), 4 May 2021, 1105, 1240 (Cochrane).

185 INDU, [Evidence](#), 11 May 2021, 1145 (Waridel).

186 INDU, [Evidence](#), 11 May 2021, 1140 (Waridel).

187 INDU, [Evidence](#), 27 April 2021, 1135 (Breton). See also: Caranci, Beata, and Fong, Francis, [Don’t Let History Repeat: Canada’s Energy Sector Transition and the Potential Impact on Workers](#), TD, 6 April 2021.

188 INDU, [Evidence](#), 6 May 2021, 1125 (Latour).

189 INDU, [Evidence](#), 29 April 2021, 1205 (Bak).



issuing new licences for oil and gas exploration and will phase out fossil fuel extraction by 2050. California is also taking action to phase out fossil fuel extraction.<sup>190</sup>

## EXAMPLES OF BUSINESS SECTORS

### Plastics manufacturing industry

Witnesses discussed waste related to plastics consumption. Alexander Kung, of Tavo Industries Inc., noted that Canadians throw away millions of tonnes of plastic waste every year, but only a small percentage is recycled, which means the vast majority ends up in landfills.<sup>191</sup> Ms. Sajedi added that Canada pays to ship part of its plastic waste to Southeast Asia. She also pointed out that Oceana Canada estimates that the cost of cleaning up plastic in the Great Lakes is more than \$468 million. She added that the Government of Canada has done studies which estimates the cost of cleaning up of plastics and everything that goes with them at more than \$7.8 billion. Ms. Sajedi suggested taking preventive measures that promote green packaging, since some 60% to 70% of the waste that is created comes from packaging. She stated that corrective measures are needed to develop ways to handle the end use.<sup>192</sup>

Some witnesses described the work that their companies are doing to reduce the use of plastic. Mr. Kung explained that his company is trying to facilitate the transition away from single-use plastics and develop alternative bamboo-based packaging, because bamboo grows much faster than trees.<sup>193</sup> To help the company's efforts, he recommended that the government offer more funding to young companies and focus on made-in-Canada solutions. He criticized the fact that some companies are receiving bids and tenders even though they are importing products from India or China at a fraction of the cost, when made-in-Canada solutions exist.<sup>194</sup> Cynthia Shanks, of Keurig Dr Pepper Canada, explained that her company decided to convert all of its pods to a recyclable format in 2018. The company was able to save money on materials by using

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190 INDU, [Evidence](#), 6 May 2021, 1125 (Latour).

191 INDU, [Evidence](#), 29 April 2021, 1115 (Sajedi); and INDU, [Evidence](#), 11 May 2021, 1135 (Alexander Kung, Tavo Industries Inc.).

192 INDU, [Evidence](#), 29 April 2021, 1115 (Sajedi).

193 INDU, [Evidence](#), 11 May 2021, 1135 (Kung).

194 INDU, [Evidence](#), 11 May 2021, 1240 (Kung).



recycled materials in all of its products. In addition, its Montreal facility no longer sends any waste to landfill.<sup>195</sup>

Some witnesses called for certain plastics be banned. Dr. Waridel stated that scientific studies show the toxic effects of certain types of plastic and pointed out that some are already banned in Europe. She argued that the types of plastic that are the most harmful to health should be banned. She stated that the issue is not just litter and that plastic producers must be made responsible for the environmental impact of all their products.<sup>196</sup> Mr. Kung recommended that the government not delay in banning single-use plastics. He would like to see a complete halt to the use of single-use plastics by 2025.<sup>197</sup>

Other witnesses stated that the debate over the use of plastics is not clear cut, because the industry is economically important to Canada. According to Mr. Sobot, it is an overreach for the Canadian government to declare certain plastics toxic. He explained that this would eliminate many jobs and drive even more investment out of Canada. John Galt, of Husky Injection Molding Systems Ltd., noted that a large proportion of all medical consumables used in the world are made from plastic. The plastics industry employs about 370,000 people and represents roughly \$35 billion in GDP.<sup>198</sup> He argued that Canada has an opportunity to establish itself as a global leader in plastics processing.<sup>199</sup> He also noted that there were three recycling plants planned for Canada, but they were put on hold when the government designated certain plastic products as toxic.<sup>200</sup>

Some witnesses stated that the important thing is to have a coordinated strategy for managing plastic waste.<sup>201</sup> Mr. Galt noted that responsibly managed plastics have a lower environmental footprint than any of the alternatives: for instance, plastic has the lowest energy use to recycle and can be infinitely recycled.<sup>202</sup> Mr. Galt and Mr. Sobot both argued that the government should mandate certain standards for recycled content and work with the provinces to standardize recycling programs for all plastics, because

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195 INDU, [Evidence](#), 6 May 2021, 1125 (Cynthia Shanks, Keurig Dr Pepper Canada).

196 INDU, [Evidence](#), 11 May 2021, 1300 (Waridel).

197 INDU, [Evidence](#), 11 May 2021, 1135 (Kung).

198 INDU, [Evidence](#), 13 May 2021, 1120 (John Galt, Husky Injection Molding Systems Ltd.).

199 INDU, [Evidence](#), 13 May 2021, 1240, 1245 (Galt).

200 INDU, [Evidence](#), 13 May 2021, 1140 (Galt).

201 INDU, [Evidence](#), 11 May 2021, 1120, 1235 (Sobot).

202 INDU, [Evidence](#), 11 May 2021, 1120, 1140, 1245 (Sobot).



standards currently vary from region to region.<sup>203</sup> The government could contribute to the development of a circular economy when it comes to plastic.<sup>204</sup> Mr. Galt added that Canada could look to Norway and Germany, which have already implemented solutions.<sup>205</sup>

## Agriculture

The CCGA discussed issues related to Canada's canola sector. Representative Dave Carey stated that taking certain steps to support the industry could help further canola's ability to sustainably grow Canadian prosperity. He suggested the following:

- Modernizing the Canada Grain Act, which has not been updated in 40 years, to align with the modern grain-trading environment;
- modernizing plant breeding regulations, because, he argued, current regulations are causing Canadian farmers to lag behind the United States, Japan, Australia and Latin America.<sup>206</sup> Plant breeding innovations will enable farmers to achieve higher yields;<sup>207</sup>
- establishing a rules-based, predictable framework to increase canola farmers' exports;<sup>208</sup>
- championing reliable free trade, particularly for Asian markets, and ensuring that Global Affairs Canada has adequate resources to fully implement and capitalize on trade agreements for Canadian farmers;<sup>209</sup> and

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203 INDU, [Evidence](#), 11 May 2021, 1255 (Sobot); and INDU, [Evidence](#), 13 May 2021, 1140 (Galt).

204 INDU, [Evidence](#), 13 May 2021, 1120 (Galt).

205 INDU, [Evidence](#), 13 May 2021, 1140 (Galt).

206 INDU, [Evidence](#), 27 April 2021, 1130 (Carey); and CCGA, [Brief](#).

207 INDU, [Evidence](#), 27 April 2021, 1240 (Carey); and CCGA, [Brief](#).

208 INDU, [Evidence](#), 27 April 2021, 1130 (Carey); and CCGA, [Brief](#).

209 CCGA, [Brief](#).

- ensuring that the Pest Management Regulatory Agency has adequate resources to collect consistent, reliable, robust, impartial data in order to implement a pan-Canadian water monitoring program.<sup>210</sup>

Some witnesses discussed other critical issues for the agriculture sector. The CCGA highlighted the importance of expediting efforts to provide accessible, high-quality, affordable telecommunications services in rural and remote communities, because farmers depend on them to use the latest agriculture technologies, maintain farm equipment and manage transportation logistics. The CCGA also recommended that the federal government make long-term commitments to infrastructure improvements through western transportation corridors in order to facilitate exports to Asian markets, which are expected to grow in the coming years.<sup>211</sup> Vincent Rousson, of the Université du Québec en Abitibi-Témiscamingue, also stressed the importance of collaboration between universities and the agriculture sector. He stated that the closer relationship between them is opening up major R&D opportunities and will “guarantee success in this greener economy.”<sup>212</sup> Lastly, Mr. Carney stated that pea protein is a crucial opportunity for Canadian farmers.<sup>213</sup>

## Forestry industry

Witnesses stated that, with government support in place, Canada is in a unique position to leverage its forest resources while lowering GHG emissions.<sup>214</sup> Derek Nighbor, of the Forest Products Association of Canada, explained that the forestry sector has more than 140 shovel-ready projects worth more than \$1.5 billion that can improve Canadian competitiveness, save jobs and lower Canada’s carbon footprint. He also highlighted the importance of harmonization among the federal and provincial governments on forest policy.<sup>215</sup> Mr. Nighbor advised the federal government to emulate Sweden and Finland, which have adopted robust, sector-wide and deep value-chain approaches in the forestry sector.<sup>216</sup> Jean-François Samray, of the Québec Forest Industry Council, explained that government support for this industry pays for itself; according to a study

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210 INDU, [Evidence](#), 27 April 2021, 1245 (Carey); and CCGA, [Brief](#).

211 CCGA, [Brief](#).

212 INDU, [Evidence](#), 13 May 2021, 1105 (Vincent Rousson, As an Individual).

213 INDU, [Evidence](#), 27 May 2021, 1245 (Carney).

214 INDU, [Evidence](#), 29 April 2021, 1110 (Derek Nighbor, Forest Products Association of Canada); and INDU, [Evidence](#), 11 May 2021, 1130 (Jean-François Samray, Québec Forest Industry Council).

215 INDU, [Evidence](#), 29 April 2021, 1110 (Nighbor).

216 INDU, [Evidence](#), 29 April 2021, 1110 (Nighbor).



conducted by PricewaterhouseCoopers, every dollar invested in the forestry industry is a win-win-win initiative: it is a win for the economy, for communities and for the environment.<sup>217</sup>

Witnesses also discussed the forestry industry's contribution to Canada's climate targets. Mr. Samray noted that, when wood is used as a building material, its CO<sub>2</sub> retention period is extended. He stated that materials like steel and concrete consume more energy and emit more GHGs than does wood.<sup>218</sup> Mr. Nighbor added that the forestry sector can also support a circular economy, because every part of the tree that is harvested, even waste from processing, can be used.<sup>219</sup> Mr. Samray explained that forest biomass can be made from industry waste, but government investment is critical in creating a receptive market for those products. For instance, the government could increase the amount of biofuels used by the armed forces and use that leverage to create an economy, as the Americans are already doing.<sup>220</sup>

Mr. Nighbor discussed the trade relationship with the United States with regard to wood. He stated that the government needs to stand with the industry, particularly as it deals with some anti-forestry bills coming out of the United States that are fuelled by anti-Canadian resource sentiment.<sup>221</sup> He explained that the United States needs Canadian lumber, because it is better than American lumber and the United States can satisfy only about 75% of its domestic demand for lumber. Mr. Nighbor noted that the U.S. lobby continues to be the biggest barrier to trade with Canada and that the United States seems to be turning to Europe to fill its lumber shortfall.<sup>222</sup> In a brief submitted to the Committee, the Forest Products Association of Canada recommended that Canada's elected and non-elected officials:

continue their regular advocacy efforts to remind Americans how:

- Vital open access to Canadian exports is to their own economic prosperity [and]

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217 INDU, [Evidence](#), 11 May 2021, 1130 (Samray).

218 INDU, [Evidence](#), 11 May 2021, 1130 (Samray).

219 INDU, [Evidence](#), 29 April 2021, 1155 (Nighbor).

220 INDU, [Evidence](#), 11 May 2021, 1155 (Samray).

221 INDU, [Evidence](#), 29 April 2021, 1110 (Nighbor).

222 INDU, [Evidence](#), 29 April 2021, 1155 (Nighbor).

- Canada/U.S. supply chains are deeply integrated, including networks of workers and businesses that are not just selling to each other, but innovating and building together.<sup>223</sup>

## Infrastructure

Some witnesses discussed the role of infrastructure and the construction sector in achieving Canada's climate targets. Dany Bonapace, a real estate developer, pointed out that Canada's housing stock is energy inefficient and criticized the slow pace of its transformation. He stated that, in order to speed up the transformation of the housing stock, the federal government should use a combination of penalties and subsidies.<sup>224</sup> According to Mr. Hadizadeh, although buildings are responsible for less than 20% of Canada's GHG emissions, that is a significant number, and Canada will need to retrofit existing buildings and build sustainable new buildings to meet its 2050 climate targets.<sup>225</sup> Ms. Franc noted that not-for-profit organizations will need grants to retrofit their infrastructure to meet sustainable development standards.<sup>226</sup>

Other witnesses had a more nuanced view of development and infrastructure upgrades to support Canada's climate targets. Mr. Zacharias pointed out that buildings produce less than 20% of Canada's total emissions and noted that although that is still material, it is much less than emissions from oil and natural gas or transportation. Mr. Zacharias stated that the consequences of building retrofits are uncertain, because the cost is high and the GHG benefits are lower and unpredictable.<sup>227</sup> Mr. Cairo added that it is not the role of the government to set environmental standards, because industry can decide on its own methods for improving its energy efficiency.<sup>228</sup> Mr. McTeague noted that building code changes will make housing even more unaffordable, which will amount to a hidden third carbon tax.<sup>229</sup>

Some witnesses presented solutions that their companies are proposing for reducing building GHG emissions:

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223 Forest Products Association of Canada, [Brief](#).

224 INDU, [Evidence](#), 27 May 2021, 1145 (Dany Bonapace, As an Individual).

225 INDU, [Evidence](#), 27 May 2021, 1130 (Hadizadeh).

226 INDU, [Evidence](#), 27 April 2021, 1125 (Franc).

227 INDU, [Evidence](#), 4 May 2021, 1250 (Zacharias).

228 INDU, [Evidence](#), 6 May 2021, 1240 (Cairo).

229 INDU, [Evidence](#), 6 May 2021, 1115 (McTeague).



- Mr. Hadizadeh presented his company’s plan to integrate solar panels into buildings, turning every new or retrofitted building into a micro-power plant. He explained that, after significant R&D, the company developed panels that eliminate the trade-off between aesthetics and sustainability and create positive financial impacts. He noted that the material costs are in line with those of other materials. He explained that this solution can also be used to retrofit older buildings so that they can, for instance, accommodate electric vehicles. He stated that this technology is going to create economic opportunities for Canada, including job creation.<sup>230</sup>
- Mr. Cairo also talked about his company’s infrastructure plans. He explained that the Advanced Building Innovation Company is currently building one of the largest advanced manufacturing centres in Canada, located in Ottawa. His company is working to simplify the logistics around supply chains, materials and material waste that comes from new home construction. He explained that his company’s software innovations dramatically change the amount of the materials that are required for a new home, and this will also improve the affordability of products.<sup>231</sup>

Mr. Sobot discussed trade opportunities with the United States in this sector. He pointed out that, despite the new Canada–United States–Mexico Agreement, Canadian companies continue to be blocked on U.S. infrastructure projects due to the “Buy America” clause, while American firms have unfettered access to Canada.<sup>232</sup> He argued that Canada has leverage in negotiations because Americans buy a lot of Canadian products. Mr. Sobot noted that the Right Honourable Stephen Harper used that leverage in 2010 in successfully secure an exemption to the clause. He added that it would be in America’s best interests to use Canadian products rather than Chinese because “Canada

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230 INDU, [Evidence](#), 27 May 2021, 1130, 1140, 1145 (Hadizadeh).

231 INDU, [Evidence](#), 6 May 2021, 1105, 1240 (Cairo).

232 As explained in the Library of Parliament Working Paper [Public Procurement in the United States: Selected Agreements, Obligations and Policies](#), prepared by Simon Richards, “The term ‘Buy America’ refers to several U.S. statutes and regulations that apply to federal funds allocated to other levels of government for projects involving highways, public transportation, aviation and intercity passenger rail. With some exceptions, these statutes and regulations require the use of U.S. iron and steel, as well as the domestic production and assembly of other manufactured goods, including rolling stock in the case of public transportation projects.”

shares best practices and has some of the best environmental credentials in the world.”<sup>233</sup>

## RECOMMENDATIONS

In light of the testimony it heard during this study, the Committee proposes the following eleven recommendations:

### Recommendation 1

**That, when implementing post-COVID-19 economic recovery initiatives while seeking to reduce Canada’s greenhouse gas emissions, the Government of Canada ensure that the initiatives support innovation at Canadian companies, especially small and medium-sized enterprises.**

### Recommendation 2

**That, when implementing post-COVID-19 economic recovery initiatives while seeking to reduce Canada’s greenhouse gas emissions, the Government of Canada consider the impact of the initiatives on vulnerable populations, including, but not limited to, Indigenous Canadians, racialized Canadians, people with disabilities, low-income families, rural and remote communities and farmers, who may be particularly hard hit by energy prices. In addition, that, when developing and implementing these initiatives, the Government of Canada ensure that these vulnerable populations are consulted and fully included in the economic recovery.**

### Recommendation 3

**That, in consultation with affected groups, the Government of Canada take steps to increase the participation and general role of Indigenous Canadians in the various industries connected with the energy transition, including oil and gas, mining, hydrogen and forestry. For example, that it take concrete steps to meet the 5% Indigenous procurement target as quickly as possible.**

### Recommendation 4

**That the Government of Canada ensure that Canadian workers have access to retraining programs so they have the ability to work in sectors going through radical**

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233 INDU, *Evidence*, 11 May 2021, 1120 (Sobot).



**transformation. Where applicable, that it ensure that companies have the resources to create their own retraining programs and to encourage their employees to enrol.**

#### **Recommendation 5**

**That, in collaboration with the provinces and territories, the Government of Canada implement a comprehensive strategy for assessing the production cycle of various products, in order to determine their actual environmental cost so the government can make more informed decisions. This includes, but is not limited to, mineral extraction and production, the place and manner in which goods are produced and assembled and management of the resulting waste, while ensuring timely approval of projects in order to remain globally competitive and advance projects that are critical to building the low-carbon economy.**

#### **Recommendation 6**

**That, in collaboration with the provinces and territories, the Government of Canada implement a comprehensive strategy for a circular economy for recycling, similar to other provinces.**

#### **Recommendation 7**

**That the Government of Canada draw on examples of regulations to prohibit the practice of planned obsolescence and all associated techniques that deliberately aim to reduce product lifespans in favour of high replacement rates, and encourage environmental durability solutions amongst manufacturers.**

#### **Recommendation 8**

**That the Government of Canada strengthen its approach in specific key sectors to fight climate change, including with strategies in the following sectors:**

- **Strategic and critical minerals, to streamline rules to bring critical minerals to market;**
- **Digital transformation;**
- **Aeronautics, automobile and space industries;**
- **Innovation research and investment.**



**Recommendation 9**

**That the Government of Canada immediately table a bill to strengthen the *Canadian Environmental Protection Act*.**

**Recommendation 10**

**That the Government of Canada develop programs to support and develop the network of electric and intelligent transportation, that it increases the amounts devoted to transportation research and innovation in Canada, and that it immediately invests in organizations that are transition ready.**

**Recommendation 11**

**That the Government of Canada lead the way in the energy transition, incorporating this transition into all its practices, particularly with regards to federal properties and vehicle fleets:**

- **that it expedites the energy efficient transformation of federal properties, and that the subsidies received by companies are dependent upon the energy efficiency of their buildings;**
- **that it finances a program of electric charging stations at Canada Post offices and for those municipalities that request them, and that it offer incentives for those purchasing hybrid or zero-emission vehicles to accelerate this transition.**



## APPENDIX A LIST OF WITNESSES

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The following table lists the witnesses who appeared before the committee at its meetings related to this report. Transcripts of all public meetings related to this report are available on the committee's [webpage for this study](#).

### 43rd Parliament – 2nd Session

Organizations and Individuals	Date	Meeting
<b>As an individual</b> Brian O'Callaghan, Lead of the Economic Recovery Project Smith School of Enterprise and the Environment, University of Oxford	2021/04/27	34
<b>Canadian Association of Fairs and Exhibitions</b> Christina Franc, Executive Director	2021/04/27	34
<b>Canadian Canola Growers Association</b> Dave Carey, Vice-President, Government and Industry Relations	2021/04/27	34
<b>Electric Mobility Canada</b> Daniel Breton, President and Chief Executive Officer	2021/04/27	34
<b>Green Economy Canada</b> Priyanka Lloyd, Executive Director	2021/04/27	34
<b>Toronto Community Benefits Network</b> Kumsa Baker, Campaigns Director Rosemarie Powell, Executive Director	2021/04/27	34
<b>As an individual</b> Dr. Heather Exner-Pirot, Fellow, Macdonald Laurier Institute	2021/04/29	35
<b>Analytica Advisors</b> Céline Bak, President	2021/04/29	35

<b>Organizations and Individuals</b>	<b>Date</b>	<b>Meeting</b>
<b>ERA Environmental Management Solutions</b> Sarah Sajedi, Chief Technology Officer and Co-Chief Executive Officer Gary Vegh, Senior Environmental Toxicologist and Co-Chief Executive Officer	2021/04/29	35
<b>Forest Products Association of Canada</b> Derek Nighbor, President and Chief Executive Officer	2021/04/29	35
<b>GreenCentre Canada</b> Lynne Manuel, Executive Director Mr. Andrew Pasternak, Director, Marketing and Business Development	2021/04/29	35
<b>SRG Mining Inc.</b> Benoit La Salle, Executive Chairman of the Board	2021/04/29	35
<b>Canadians for Tax Fairness</b> Dr. D.T. Cochrane, Economist	2021/05/04	36
<b>Clean Energy Canada</b> Felix Whitton, Senior Policy Advisor Dr. Mark Zacharias, Special Advisor	2021/05/04	36
<b>Enerkem</b> Michel Chornet, Executive Vice-President, Engineering, Innovation and Operations	2021/05/04	36
<b>Whitecap Resources Inc.</b> Grant Fagerheim, President and Chief Executive Officer	2021/05/04	36
<b>Wildlands League</b> Janet Sumner, Executive Director	2021/05/04	36
<b>AddÉnergie Technologies Inc.</b> Travis Allan, Vice-President, Public Affairs and General Counsel	2021/05/06	37
<b>Advanced Building Innovation Company</b> Frank Cairo, Chief Executive Officer and Co-Founder	2021/05/06	37
<b>Canadians for Affordable Energy</b> Hon. Dan McTeague, President	2021/05/06	37

<b>Organizations and Individuals</b>	<b>Date</b>	<b>Meeting</b>
<b>Canadian Union of Postal Workers</b> Hugo Charette, Campaign Coordinator, Metropolitan Montreal Region Jean-Philippe Grenier, 3rd National Vice-President	2021/05/06	37
<b>Climate Action Network Canada</b> Caroline Brouillette, Policy Analyst Lauren Latour, Coordinator, Climate Ambition	2021/05/06	37
<b>Keurig Dr Pepper Canada</b> Marie-Anne Champoux-Guimond, Manager, Sustainability Cynthia Shanks, Director Sustainability and Communications	2021/05/06	37
<b>As an individual</b> Robert Lyman, Principal ENTRANS Policy Research Group	2021/05/11	38
<b>Canadian Urban Transit Research and Innovation Consortium</b> Dr. Josipa Petrunic, President and Chief Executive Officer	2021/05/11	38
<b>Coalition of Concerned Manufacturers and Businesses of Canada</b> Veso Sobot, Board Member	2021/05/11	38
<b>Mothers Step In</b> Émilie Robert, Biology Teacher, Rouyn-Noranda Dr. Laure Waridel, Co-Instigator	2021/05/11	38
<b>Quebec Forest Industry Council</b> Jean-François Samray, President and Chief Executive Officer Michel Vincent, Director, Economics and Trade	2021/05/11	38
<b>Tavos Industries Inc.</b> Alexander Kung, Director of Sales and Business Development	2021/05/11	38
<b>As an individual</b> Dr. Vincent Rousson, Rector Université du Québec en Abitibi-Témiscamingue	2021/05/13	39

<b>Organizations and Individuals</b>	<b>Date</b>	<b>Meeting</b>
<b>Collectif Territoire</b> Geneviève Aubry, Director	2021/05/13	39
<b>Écotech Québec</b> Denis Leclerc, President and Chief Executive Officer	2021/05/13	39
<b>Husky Injection Molding Systems Ltd.</b> John Galt, President and Chief Executive Officer	2021/05/13	39
<b>Manhattan Institute</b> Mark P. Mills, Senior Fellow	2021/05/13	39
<b>As an individual</b> Dany Bonapace François Giroux, Consultant Development of Innovative Transport Solutions	2021/05/27	41
<b>Brookfield Asset Management Inc.</b> Mark Carney, Vice-Chair	2021/05/27	41
<b>Electricity Canada</b> Francis Bradley, President and Chief Executive Officer	2021/05/27	41
<b>GHGSat Inc.</b> Eric Choi, Director, Business Development	2021/05/27	41
<b>Mitrex: Integrated Solar Technology</b> Danial Hadizadeh, President and Chief Executive Officer Hesam Shahrivar, Head of Planning and Development	2021/05/27	41

## **APPENDIX B LIST OF BRIEFS**

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The following is an alphabetical list of organizations and individuals who submitted briefs to the committee related to this report. For more information, please consult the committee's [webpage for this study](#).

### **43rd Parliament – 2nd Session**

**Canadian Canola Growers Association**

**Forest Products Association of Canada**

**MDA**

**Lyman, Robert**





## REQUEST FOR GOVERNMENT RESPONSE

Pursuant to Standing Order 109, the committee requests that the government table a comprehensive response to this Report.

A copy of the relevant *Minutes of Proceedings* ([Meetings Nos. 34, 35, 36, 37, 38, 39, 41](#)) from the 43rd Parliament, 2nd Session and ([Meetings Nos. 40, 41](#)) from the 44th Parliament, 1st Session is tabled.

Respectfully submitted,

Joël Lightbound  
Chair



## **Dissenting Opinion of the Conservative Party of Canada**

### **Remove government restrictions to foster a growing and innovative economy**

As Canadians are currently being forced to choose between heating and eating, between visiting family or going to work, this report and its recommendations are tone deaf and fail to address the current economic plight faced by Canadian families. It is critical to note that our economy is not merely in an “economic recovery” mode from COVID but is also in the grip of a structural inflationary period that has resulted in record costs for goods and services. In our view, the recommendations in this report fail to acknowledge this reality, will not foster economic recovery or growth, but instead serve to outline this Government’s intention to drive an “economic transition” of our economy to one focused entirely on green initiatives. Such an approach seeks only to further the government’s political objectives and fails to outline the negative impacts of such an approach Canadian families and taxpayers.

Recommendation 1 sets out a false premise that the best way to achieve economic growth rests exclusively on the development of green initiatives. Recommendation 2 acknowledges that this report, if followed, could result in higher energy costs for Canadians which will disproportionately impact low-income Canadians, people with disabilities, rural and remote communities, and farmers. Despite this acknowledgement, the recommendations outlined offer no solutions as to how best to reduce these inflationary costs on these communities.

This report also fails to consider or acknowledge the damaging impacts to Canada’s economy caused by this government’s inflationary spending. It is important to note that much of the government’s spending during the pandemic was entirely unrelated to the impacts of COVID-19. As has been widely noted, the government spend more than \$200 billion on non-COVID initiatives during the pandemic and significantly increased long-term spending commitments as a result. Furthermore, of the COVID related spending the Government did pursue, it wasted taxpayer resources on COVID failures such as the ArriveCan App and sent COVID benefits to prisoners and fully employed public servants. Such an approach has clearly fueled record inflation, has placed upward pressure on interest rates and has reduced paychecks in turn. Unfortunately, the recommendations contained in this report emulate the pitfalls of this government’s inflationary fiscal policy by outlining no costs associated with the various green initiatives proposed.

Conservatives recognize the need to reduce Canada’s carbon footprint. We note that the Government’s current approach to emission reduction via the carbon tax has failed to meet their carbon reduction targets in every single year since they took office. Continuing with this approach will not only fail to reduce emissions but will inevitably impose additional cost of living pressures on Canadian families. As noted by one witness, Mr. McTeague, the carbon tax is very expensive for Canadian families, is hurting farmers, and he went on to note that the government’s decision to move forward with a Clean Fuel Standard would “drive up the cost of energy in Canada”. In contrast with the government’s approach to emission reduction, which

has failed to reduce emissions and continues to punish Canadian families. Conservatives support a cleaner environment and emission reduction through technology, not taxes.

Recommendations 5 and 6 are more examples of Ottawa-knows-best thinking. Provinces and Municipalities manage waste and recycling streams. While the current government allows hundreds of municipalities to pump raw sewage into the St. Lawrence River, and makes no attempts to stop it, under these recommendations, it will be the government of Canada's responsibility to develop a circular economy for waste recycling. This is unnecessary and does not adequately address severe challenges facing waste management in Canada.

Recommendation 7 assumes a practice that is not convincingly supported by the evidence and testimony outlined in this report. In addition, the committee did not hear any effective testimony that indicates how the government could regulate, enforce, and apply a prohibition of this sort.

Conservatives note that government is not and should not be the primary driving force behind economic growth. In nearly all cases, government intervention wastes taxpayer money, distorts the market, and creates as many problems as it seeks to address. In contrast with the approach outlined in this report, Conservative members of the committee believe that small government makes big citizens and recognize that Government gatekeeping restricts innovation and erodes productivity. Therefore, Conservative members believe only one recommendation should result from this study:

- That, in view of the impacts of record inflation and record energy costs, the Government of Canada should not dictate a singular "green transition" focus on economic recovery and growth, and should instead remove government restrictions and gatekeepers to foster a growing and innovative economy.



**SUPPLEMENTARY REPORT ISSUED BY THE BLOC QUÉBÉCOIS**

**GREEN RECOVERY: LEADING THE TRANSITION TO GREEN ENERGY AND THE CHALLENGES OF  
DECARBONIZATION BY 2030.**

**INTRODUCTION**

The Bloc Québécois commends the members of the committee and the staff of the Library of Parliament for their work during this study. The same thanks go to all the witnesses, citizens and organizations called before the committee and the experts who contributed to the public debate on the subject by submitting their observations in the form of letters and briefs. There is no doubt that these contents will be relevant to revisit in the near future. Canadian environmental governance raises important issues that have significant impacts for future generations. We wish to highlight, in order to give them the consideration they deserve, the relevant remarks that have been expressed by both citizens and experts, but which could not find their place in this report. We offer an overview of some elements that deserve more attention.

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Let us recall the Committee's mandate for this study by quoting the motion of September 26, 2022:

Pursuant to Standing Order 108(2) and the motion adopted by the Committee on September 26, 2022, the Committee resumed its study of the economic recovery from COVID-19.

**A POLICY FRAMEWORK ON ELECTRIFICATION, LOW-CARBON ENERGY, RENEWABLE ENERGY  
AND THE FIGHT AGAINST CLIMATE CHANGE**

The Bloc Québécois will support the transition to green energy by proposing massive investments in green innovation, transportation electrification, digital revolution, and research and development in all regions of Quebec in order to advance a green recovery that results in prosperity supported by Quebec entrepreneurship.

The following recommendation was not supported by a majority of Members when it was debated.

### **Recommendation 1**

**That the Government of Canada, when implementing initiatives to restart the economy in the wake of the COVID-19 pandemic while seeking to reduce its greenhouse gas emissions, ensure that it defines a framework policy on transportation electrification, low-carbon energy, renewable energy and the fight against climate change, in order to:**

- 1. Promote R&D and commercialization opportunities in emerging technologies;**
- 2. Support businesses by ensuring they have the resources to adopt innovative technologies;**
- 3. Use the polluter pays principle, so that mitigation, reparation or compensation costs are borne by the person who caused the environmental damage requiring such measures;**
- 4. Ensure that all financial decisions consider environmental impacts, that they are documented in the strategic considerations, and that there is transparent reporting on each federal organization's website how each financial decision contributes to improving environmental performance; and**
- 5. Increase its spending level to between 1 and 2% of its gross domestic product (GDP) to decarbonize its economy.**

### **ESTABLISHING A CONTROLLED DECLINE OF THE HYDROCARBON INDUSTRY**

The Bloc Québécois is once again demanding an end to fossil fuel subsidies (as Canada has repeatedly committed to since 2009). The Bloc Québécois proposes to redirect Quebec's share of the money invested in fossil fuels to investments in Quebec's clean energy and in our research centres, while maintaining the necessary funding for a transition away from fossil fuels in Western Canada.

### **Recommendation 2**

**That the Government of Canada cease to impede the attainment of net-zero emissions objectives and examine a range of options aimed at transforming the fossil fuel industry, by requiring that the Canada Energy Regulator model and reduce petroleum production, in order to establish policies for a controlled and gradual decline of the fossil fuel industry.**

### **Recommendation 3**

**That the Government of Canada allow its citizens to direct their savings to climate-friendly investments and provide incentives to do so.**

### **SUPPORT FOR A NATIONAL ZEV STANDARD AND CHARGING STATIONS**

A crucial part of the transition from fossil fuels to greener energy involves supporting and investing in the zero-emission vehicle (ZEV) industry. The Bloc Québécois supports standards in this area not only to help reduce greenhouse gas emissions, but also because of the employment and health benefits that follow.

Currently in Canada, transportation accounts for 24% of all carbon emissions (<https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/greenhouse-gas-emissions.html#transport>), and is therefore a sector that requires urgent attention. Canada currently lags behind the world when it comes to electric vehicles, with sales accounting for only 7.7% of all vehicle sales in the first quarter of 2022 compared to the global 15%. For its part, Quebec leads the way with 12.7% of sales.

Creating standards and regulations to encourage the investment, sale, and adoption of electric vehicles is an important step in addressing this issue. This means that electric vehicles built in Canada, using taxpayers' money, will remain here rather than being sold abroad. It also means that Canada would attract innovative businesses, motivate SMEs and companies already established here, and create well-paying, high-value jobs that support a sustainable and diversified future.

In addition, if we want to encourage the energy transition with ZEVs, Canada must make a serious commitment to build and maintain the infrastructure necessary for their use. It is essential to eliminate the main barrier to the adoption of electric vehicles: the lack of electric terminals.

Fundamentally, more electrical charging stations are needed along routes. The highway charging infrastructure is clearly inadequate and when there are charging stations, too many are defective or do not have a high-speed charging configuration (level 2). This reality overshadows the potential for efficiency in long-distance travel and is a concern during the winter months. In fact, in 2021, the Department of Natural Resources undertook a study in partnership with e-Camion to demonstrate the effectiveness of fast charging along the Trans-Canada Highway between Ontario and Manitoba in order to demystify the "dilemma" of winter and rural charging. This study, funded at more than 11M dollars, was conclusive.

Future investments in this area must take into account the needs of rural communities and the importance of charging station maintenance. In this context, one option is the implementation of a program supporting the creation of electrical terminals in municipalities across the country.

The Government of Canada can play a role in this transition by ensuring that its fleet transitions to hybrid and zero-emission vehicles. Canada Post is currently the Crown corporation with the largest fleet of vehicles, and there is a need to accelerate their transition to all-electric, which is currently estimated to be completed by 2040 (<https://www.canadapost-postescanada.ca/blogs/personal/perspectives/canada-post-environment-sustainability-2022/>). The result of this investment will provide electric charging stations near every Canada Post office.

The Bloc Québécois believes that the electric vehicle industry will be a key element of a post-pandemic green recovery if a standard is set and significant investments in infrastructure are made.

#### **Recommendation 4**

**That the Government of Canada support the transition to electric transportation by adopting a standard and defining the regulatory mandate for zero-emission vehicles; investing in infrastructure that will support this effort, including funding a program to install electric**

**charging stations in municipalities that request them and nearby all Canada Post offices, all while maintaining its purchase incentives for hybrid and zero-emission vehicles.**

#### **Recommendation 5**

**That the Government of Canada initiate discussions with the main commercial banners of the hydrocarbon industry present in Canada in order to develop agreements that, on a cost-shared basis, would allow the hydrocarbon industry to make a concrete contribution to the adoption of hybrid and zero-emission vehicles through the installation of fast-charging infrastructure in all points of sale across Canada.**

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#### **ENCOURAGING THE TRANSITION OF ITS BUILDING STOCK: ENERGY-EFFICIENT BUILDINGS**

To make properties more energetically efficient and to promote the energy efficiency of all buildings, the government must demand action from property owners: effective, affordable and innovative solutions exist. For example, artificial intelligence can be used to reduce energy consumption in a building, and the recovery of heat produced by certain industrial equipment can also be used to the heat the building itself, or it could be redistributed to nearby residential areas. Buildings can also store energy and participate in energy sharing infrastructure networks. Combined with other technologies, such as wind and solar energy, not to mention geothermal energy (horizontal and vertical), results are truly within reach.

For companies that do not proactively transition to greener buildings, the government must put in place sanctions that will lead them to do so. These could include a reduction in the subsidies companies receive if their buildings do not meet efficiency standards.

Moreover, the government must set an example by accelerating the transformation of its real estate. As the owner of more than 39,000 buildings across the country, the government has a large role in this transition: it has the responsibility, in its publicly expressed desire to be "green", to lead the way. The entire manufacturing and industrial production chain would be stimulated, not to mention the countless positive impacts for the workforce and the economy as a whole. Moreover, the issue of investments is pertinent: it has been amply demonstrated and repeated by several organizations that investments occur in environments where there is predictability and structure within projects. The Government of Canada must seize this opportunity, amplify its projects within its own ranks, in all sectors.

#### **Recommendation 6**

**That the Government of Canada act in an exemplary manner in the energy transition and that it embody this transition in every action, particularly in its real estate, by accelerating an energy efficient transformation, and that it impose penalties on subsidies received to companies whose buildings are not energy efficient.**

#### **Recommendation 7**

**That the Government of Canada encourage industries that are actively engaged in reducing the use of fossil fuels in the construction and operation of buildings and accelerate the development of a dynamic market that renovates private buildings.**



## **ENVIRONMENTAL SOVEREIGNTY**

The Intergovernmental Panel on Climate Change, IPCC, sounded the alarm in its latest report: we have very little time to avoid catastrophe, and the next few years will be crucial. Québec must therefore have the autonomy to implement solutions that will help it fight climate change effectively. Québec is a leader in environmental protection and its commitment to renewable energy, conservation efforts and rigorous environmental regulations is exemplary.

In Quebec, the Charter of Human Rights and Freedoms already establishes that a person may apply for an injunction to enforce his or her right to environmental quality.

Quebec has repeatedly stated that it opposes any intervention by the federal government in environmental matters in Quebec and that it is important to recognize Quebec's jurisdiction in environmental matters. It is with this in mind that the Bloc Québécois has introduced a bill to amend seven federal statutes to make the environment an exclusively provincial jurisdiction.

### **Recommendation 8**

**That the Government of Canada affirm that, when it comes to the environment, Quebec must be the only one to decide what happens on its territory.**

## **PLASTICS ELIMINATION STRATEGY**

On June 22, 2022, the Government of Canada published the *Prohibition of Single-Use Plastics Regulations*. The Regulations prohibit the manufacture, import and sale of six categories of single-use plastic articles, with a temporary exemption for export:

- Shopping bags
- Utensils
- Food containers that contain expanded or extruded polystyrene, polyvinyl chloride, oxo-degradable plastic or black plastic made of carbon black
- Rings for beverage packaging
- Mixing sticks
- Straws

The regulations aim to prevent plastic pollution by eliminating or restricting the six categories of UPUs that pose a threat to the environment.

The main obstacle to the goal of zero plastic waste is the ever-increasing amount of plastic produced and sold, which generates 4.4 million tons of plastic waste annually in Canada. This barrier is coupled with an over-reliance on plastic products and a strategy of investing in recycling them to eliminate them.

Today, despite efforts to improve plastic recycling rates, 92% of Canada's plastic waste still ends up in landfills, incinerators and the natural environment (rivers, lakes, oceans).

Unfortunately, there is no market for these plastics, especially those containing additives that are toxic to the environment and ecosystems, including food packaging that almost always contains forever chemicals, making it very difficult to recycle them.

Government action is required not only to limit the use of plastics, but also to put in place regulations to reduce and reuse our plastics. For example, policies can and should be put in place to reduce the amount of plastic packaging used by the retail, food, and other commercial industries. There are sustainable alternatives and Canada must encourage industries to abandon plastic, too often made from virgin resins, directly from the petrochemical industry. Packaging standards can become more stringent in the same way that fuel efficiency and energy standards have become more stringent.

While reducing our use of plastics and other materials, Canada must support reuse and refill systems. Refill and reuse have many benefits for the environment. They contribute to extending the life of products and reduce the ecological footprint of an activity or community. For example, if the food industry were to embrace refill and reuse, an estimated 20,000 new jobs would be created in areas such as supply chain, sanitation and delivery.

Refill and reuse save natural resources and limit greenhouse gas or pollutant emissions generated by the disposal of a product at the end of its life while contributing to the circular economy and the reduction of waste production.

Currently, there are more reuse and reuse stores in Montreal per capita than anywhere else in Canada.

### **Recommendation 9**

**That the Government of Canada adopt more effective strategies to manage plastic waste and reduce the amount of non-recoverable plastic waste, particularly because it is largely made from non-renewable fossil materials that produce GHGs,**

- 1. adding bottle caps and lids and laminated plastic products to the list of single-use plastic item categories;**
- 2. intensifying local refill and reuse systems;**
- 3. by extending the deposit on a greater number of products to enhance and improve recovery.**

### **FORESTRY**

The most recent IPCC report outlines the crucial importance of forest ecosystems in carbon capture and storage. Our boreal forest alone stores twice as much carbon as the world's oil reserves. We need to value the role of these carbon sinks at all levels and ensure that Ottawa recognizes the ecological and economic potential of forests.

The forest is of great importance from an economic, tourist and cultural point of view. It is essential to support existing regional opportunities for vertical integration. Currently, the forest supply chain is defined by wasted potential, with inefficient border crossings and associated

taxation. It is therefore essential to adopt a robust, sectoral and in-depth approach to relaunching the entire value chain in the forest sector.

In order to achieve this added value, a circular economy must also be supported. All harvested parts of the trees, even waste from processing, can be used. For example, it is possible to create forest biomass with industrial waste.

In this way, we can not only add value, but also ensure that we develop a resilient industry that can meet environmental objectives.

Québec has a bioindustrial infrastructure and a high-performance capacity for fundamental and applied scientific research. The forest sector is innovative and develops promising new biosource products. It is exciting to see the innovations of this industry and the growth prospects for value-added wood products.

#### **Recommendation 10**

**That the Government of Canada recognize the ecological and economic potential of forests to meet greenhouse gas reduction targets set by international agreements and invest in the forest bioeconomy - the transformation of forest resources into value-added products and services that contribute to the greening of the planet and the economic diversification of resource regions.**

#### **AGRICULTURE:**

Food security should be a fundamental right of every citizen. The pandemic has demonstrated the vulnerabilities that exist within the global supply chain and, therefore, the dangers that come with over-reliance on other countries. The support of our local farmers and producers has therefore become a key element of the post-pandemic green transition. The development of a program that enhances and supports production, processing and local supply chains is becoming a necessity in order to increase the resilience of our economy and the development of short supply chains. This is all the more true given Quebec's immense agricultural potential, as a lot of abandoned and fallow ground could be developed in this way.

In the context of the green recovery, the environmental costs associated with the global supply chain can no longer be dissociated from its fragility. The carbon footprint of food production must be visible through a pricing system that will reveal the real environmental cost. By doing so, the conscious consumer would be able to make an intelligent choice.

#### **Recommendation 11**

**That the Government of Canada establish a regional fund to support innovation to enable the development of sustainable and local agriculture and a fund dedicated to the recultivation of fallow land.**

#### **Recommendation 12**

**That the Government of Canada consider implementing carbon footprint pricing for food products.**