

Building Forward Better: A Clean and Just Recovery from the COVID-19 Pandemic

White Paper



The Office of The Honourable Rosa Galvez
November 2020

Table of Contents

Executive Summary	4
Key Recommendations	6
Background.....	8
The COVID-19 Pandemic	8
Unequal Impacts of COVID-19 in a Broader Context of Inequality.....	9
The Government Emergency Response	12
Strategic Emergency Management.....	12
Emergency Response Measures So Far	13
Continuation of Democracy	14
Emergency Response Legislation.....	15
Financial Aid and Stimulus	16
The Link Between the Environment and Pandemics.....	17
Climate Change	19
Responses to Economic Crises	21
Downfalls of Traditional Stimulus.....	21
Carbon Lock-In	21
Stranded Assets and Environmental Liabilities	22
Financial Risk	23
Increased Inequality	24
Advantages of Clean and Just Stimulus.....	25
What is Clean and Just Stimulus?.....	25
High Overall Performance	26
Environmental Benefits and Health co-benefits	27
Social Justice and Tackling Inequality.....	28
Support for Clean and Just Recovery.....	30
Public Approval.....	30
Clean Stimulus Around the World	31
Implementing a Clean and Just Recovery	32
Accountability through Transparency and Conditionality	32
Key Policies Tool Box	35
Transportation Sector	35
Built Environment.....	36
Nature-Based Solutions.....	36
Energy and Electricity.....	37

Industry	37
Social Wellbeing	38
Paying for the Recovery	39
Conditionality and Transparency	40
Research and Data.....	40
Budgeting for a Clean and Just Recovery.....	41
Paying for the Recovery.....	43
Conclusions	44
References	45
About Senator Rosa Galvez.....	52

Direction

Senator Rosa Galvez, Ph.D., P. Eng., FEC, FCSCE

Lead Author

Nick Zrinyi, B.Eng., MSc.

Contributing Authors

Karine Péloffy, MSc., B.C.L., L.L.B.

Stéphane Laviolette, B.Soc.Sc.

With thanks for the insightful feedback and comments

Senator Diane Bellemare

Senator Yvonne Boyer

Senator Donna Dasko

Senator Frances Lankin

Senator Marie-Francoise Mégie

Senator Mary Jane McCallum

Senator Kim Pate

Executive Summary

A crisis is sweeping the globe and unless we heed the advice of scientists and take action, millions of people will die and billions more are at risk. Sound familiar? COVID-19, like climate change, threatens our economic, social, and physical well-being. The advent of this deadly virus, however, should be understood as a symptom or co-hazard of environmental degradation and climate change rather than an extraneous event. Human-caused environmental degradation is increasing the likelihood and severity of pandemics.

Along with the tragic impact the pandemic has had on our health, it has exposed the vulnerabilities of a broken system. The lockdown conditions have taken a disproportionate toll on lower income individuals, the elderly, and groups who already bear a degree of structural oppression: women, Indigenous Peoples, and racialized individuals. Further, the pandemic has revealed a system wherein we exploit the finite natural resources of our planet with the illogical expectation of infinite growth and governments subsidize environmentally destructive behaviour through support to polluting industries and corporation. Unbridled economic growth is the root cause of ecological destabilization and flatlining living standards for many.

As stimulus begins to flow, we must reflect on the ultimate goal and the most efficient way to achieve it. A clean and just recovery is one that puts people before profit and focuses on furthering and eventually achieving human and ecosystem wellbeing. Such a goal implies the development of principles and tools that will not only ensure that the costs and benefits of the recovery will be distributed equitably, but also help shift our concept of growth to be centered around sustainable prosperity – after all, the economy must serve society, not the other way around.

The purpose of this white paper is to document the government's emergency response to the pandemic to date and the work of experts advocating for a holistic approach to rebuilding Canadian society to achieve greater overall collective well-being. The paper describes how we got to this point of multiple crises and why a clean and just recovery will be critical in addressing them synergistically. It draws inspiration from other groups advocating for similar policies to explore how much should be invested, where and how the funds can be recouped, and finally a set of core policy recommendations that integrate the principles and implementation tools for such a recovery.

Traditional stimulus measures have a poor governance and transparency track record. Looking forward, we must worry about reinforcing a *status quo* of over investment into soon-to-be stranded assets, unnecessary exposure to financial risk, and increasing inequality. Meanwhile, a mix of policies that prioritize human and ecosystem wellbeing in an attempt to build *forward* better does exactly the opposite through the synergistic production of co-benefits. All policies must be scrutinized through gender, social justice, and climate lenses which must be rapidly developed and implemented as well as carry strict measures for accountability, transparency, and conditionality.

Canadians have demonstrated, with the wave of environmental protests of the last few years through the country culminating in September 2019, that they want the transition to a low-carbon economy to accelerate and be completed. In fact, due to inaction, which has hampered this transition for the past three decades, we now need a rapid and far-reaching *transformation*. Recent polls show most Canadians view the COVID-19 pandemic as an opportunity to address more than one crisis with the same recovery. There is strong support for taxing extreme wealth, investment in sustainable industries, and reinforcing our commitment to fight climate change through both mitigation and adaptation.

The clean and just recovery that Canadians are demanding should be seen as an investment, with a high potential for returns, in our collective future well-being rather than simply an outflow of public funds.

“This crisis, its impact, and the government response is an historical moment. We parliamentarians have an important duty to fulfil. We are accountable for the success or failure of the response and must use every opportunity to build a more resilient society. Through this report, we hope to invite a constructive and inclusive conversation on possible ways to move forward together.”

- The Honourable Rosa Galvez

Its not a question of having the economy here and the environment there and worrying about trade-offs, the economy is a subsystem of the biosphere. It lives within it. Everything we do in the economy – everything we produce and everything we consume comes from nature.

– Dr. Peter Victor

The climate emergency is like the COVID-19 emergency, just in slow motion and much graver. Both involve market failures, externalities, international cooperation, complex science, questions of system resilience, political leadership, and action that hinges on public support.





– Dr. Cameron Hepburn

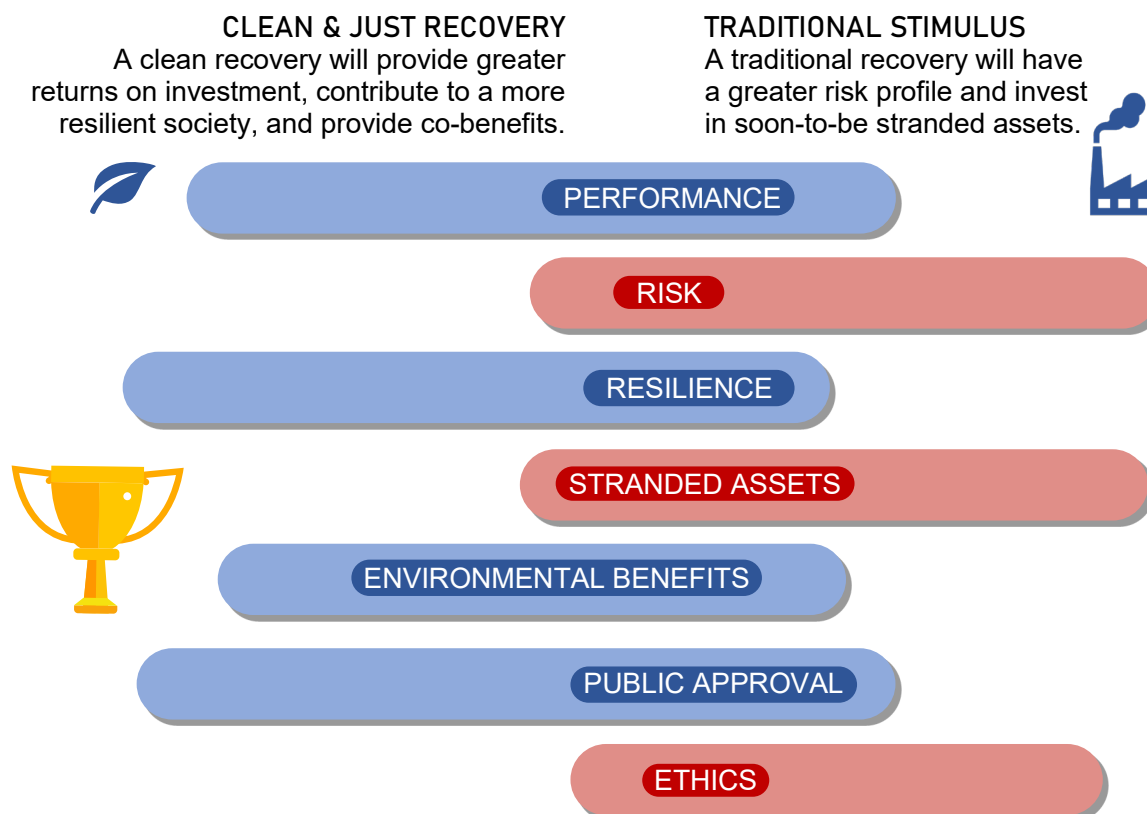
Now that government spending is being unleashed on a massive scale, the public has a right to demand that companies receiving help contribute to social and racial justice, improved health and the shift to a greener, more knowledge-based economy.

– Dr. Joseph Stiglitz

Key Recommendations

- 1 **In addition to the Gender-based Analysis Plus gender lens, all policies must be viewed through a climate lens that will consider impacts to future generations and a social justice lens which ensures benefits and costs of the recovery are distributed equitably**, including to structurally oppressed groups such as Indigenous Peoples and those who experience intersections of discrimination. 
- 2 **The recovery must focus on helping people rather than corporations.** This includes establishing a *guaranteed livable income* (GLI), ensuring all Canadians have reliable access to basic services, and investing in younger generations by providing opportunities for education and training in the clean industries of the future. 
- 3 **In the case that financial assistance is provided to large corporations, it should be done with accountability measures and enforceable, verifiable commitments to contribute to human and ecosystem wellbeing.** The Crown corporations and decision-makers who bear the responsibility of allocating resources must therefore also be held to greater standards of transparency and disclosure as well as strict adherence to conditionality. 
- 4 **The recovery must harness the potential of our natural ecosystems** by supporting indigenous guardians of traditional indigenous lands, incentivizing climate-smart agriculture, reimbursing farmers for the ecosystem services they provide, and funding restoration and conservation practices. 
- 5 **This investment in building *forward* better should coincide with practicable methods of recouping its cost** that also combat rising inequality such as a tax on the wealthiest Canadians, ensuring corporations are paying their fair share of taxes and not unduly profiting from these crises, as well as ending support to the fossil fuel industry. 
- 6 **Improve the built environment** by providing incentives for energy audits and energy efficient retrofits - these should be supported by stringent and well-enforced building codes. Governments must lead by example with a focus on procurement rules that rigorously apply all best practices for efficiency and climate change mitigation and adaptation. 
- 7 **The ways we produce, transport, and use energy need to be modernized** by using renewable sources of electricity, smart grids and improved connectivity, and doing less with more by improving the efficiency of end usages. 

- 8 **Industry must be transformed** with a focus on giving opportunity to innovative sectors and promoting principles of circularity such as digitalization, the right to repair, and legislations against planned obsolescence and wasteful packaging. 
- 9 **Upgrade the way we move** with transportation sector policies that focus on the provision of public transportation, promoting active transit, and zero-emission vehicle uptake and charging infrastructure. 
- 10 **Promote and support R&D for sectors at the intersection between social sciences, technology and engineering** in emerging areas including public health and pandemics; efficient and integrated use of construction materials; electricity production, storage and transmission; and communication and multimedia. 
- 11 **Data collection must be active, intense, timely and rigorous** with particular attention to race and gender-based disaggregated data gathering and monitoring how clean and just recovery efforts are performing among different groups. This will require collaboration between a variety of departments and organizations including Health Canada, Indigenous and Northern Affairs Canada, Statistics Canada, and other levels of government. 





The COVID-19 Pandemic

COVID-19 is the root disease of the global pandemic caused by the emergence and transmission of the *severe acute respiratory syndrome-related coronavirus 2*, SARS-CoV-2, virus. As the name implies, this novel coronavirus targets the respiratory system as well as the vital organs of its host, causing flu-like symptoms and a risk of death^{1,2} and is particularly deadly to those with pre-existing comorbidities³.

The virus originated in the Wuhan region of China and has since spread to 187 countries and territories⁴, and 26 cruise and naval ships⁵. The World Health Organization (WHO) designated the disease as a pandemic on March 11, 2020⁶.

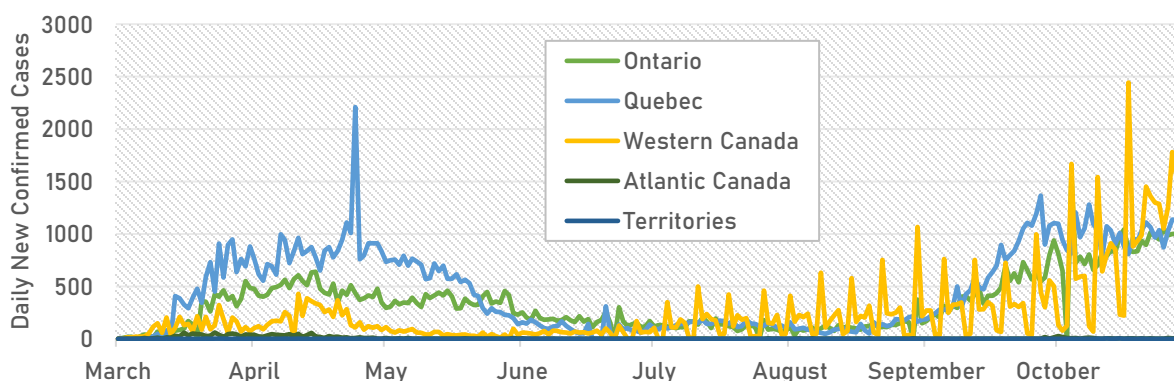


Figure 1: Distribution of daily new confirmed cases in different regions of Canada. Created by Nick Zrinyi using data from cbc.ca as of November 8, 2020⁷.

Canada has been hit hard by the COVID-19 pandemic. With more than 267,000 cases as of early November 2020, our cases per capita remains less than a quarter that of our neighbours to the south, the United States where more than one fifth of states each have more confirmed cases than *all* of Canada. Canada has, however, struggled to build testing capacity; as a result, we are below the G7 average in both absolute and per capita tests performed. Ontario and Quebec have borne the brunt of the crisis, accounting for around 75% of all Canadian confirmed cases. Long-term care homes have been linked to 77% of COVID-19 deaths in Canada⁸.

Mid-March marked the beginning of the first wave in Canada. For many, life ground to a halt; employment, economic activity, and socializing had either slowed down, ceased, or taken radical new forms. The second wave, which was anticipated by experts, has begun to strike certain regions and lockdowns are beginning to spread once more across the country.

The pandemic, along with the recovery, could be long, uncertain, and uneven.

267,000

Confirmed cases and 10,500 deaths in Canada as of the start of November 2020⁹.



7.2%

Drop in GDP between February and March 2020, the greatest one-month drop on record¹⁰.



13.7%

Unemployment in May 2020 up from 5.8% in January 2020¹¹.



Unequal Impacts of COVID-19 in a Broader Context of Inequality

The pandemic has impacted groups differently and several risk factors have emerged. Besides comorbidities, there are links between infection and death rates and age, gender, ethnicity, and socio-economic status.

“COVID-19 could reverse the limited progress that has been made on gender equality and women's rights”

- António Guterres, Secretary General of the United Nations¹²

Contrary to global trends^{13, 14}, women in Canada account for a larger proportion of confirmed cases and deaths, despite men having been hospitalized and admitted to the intensive care unit more often¹⁵. This is likely because women represent a greater portion of the health workforce and are therefore at greater risk of exposure.

In addition to being more at risk of infection, it seems that women have also been more affected. Women have borne the brunt of the secondary, largely social and economic, impacts of the disease: rates of domestic violence have increased¹⁶, burdens of care-taking and child-care have increased, and employment rates among women have been slower to recover¹⁷. Also, a greater ratio of unpaid work means a lower capacity to absorb economic shocks.

Gender Differences in COVID-19 Statistics

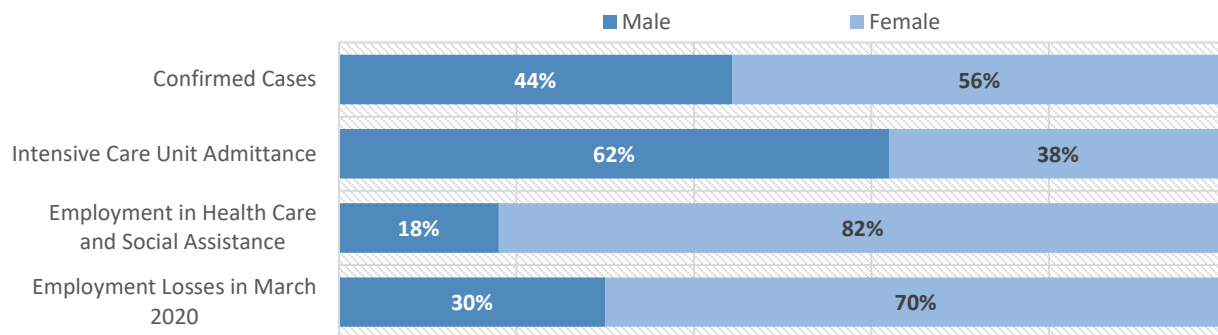


Figure 2: Gender differences among COVID-19 outcomes, COVID-19-related employment¹⁸, and employment losses due to COVID-19¹⁹.



Spotlight: COVID-19 in the Broader Context of Systemic Racism

The COVID-19 pandemic has shed light on the pre-existing systemic inequities plaguing Canadian society that have manifested from the intersection of predatory capitalism, extractivism and colonisation. Early 2020 saw solidarity blockades paralyzing the country in protest of the RCMP arrest of Wet'suwet'en land defenders.

The death of George Floyd in the U.S. and several Black, Indigenous, and People of Colour (BIPOC) community members in Canada due to police brutality in early 2020 sparked protests and a general awakening to systemic racism in both countries. Of course, those who experience racism have long been awakened to its existence and toxicity. Nonetheless, the movement has brought attention to the differential impacts the COVID-19 crisis – and recovery – are having and will have on different groups.

Since Canada does not collect race-based data, the pervasiveness of systemic discrimination remains unknown.

Income and Wealth Inequality



The top 1% in Canada own 25.6% of total wealth²⁰ and the income mobility of those in the lowest income quintile is decreasing²¹.

Social Inequality



Despite accounting for only 5% of total adult population, Canada's Indigenous Peoples represent 30% of all adult incarcerations²².

Environmental Racism



Heavily polluting industries tend to be located very close to Indigenous communities, communities of colour, and low-income communities²³.

Structurally oppressed populations in Canada, particularly Indigenous and Black Canadians, are disproportionately vulnerable to both worse negative health outcomes as well as secondary social and economic impacts²⁴. COVID-19 has exposed and reinforced these pre-existing inequalities caused by intergenerational trauma and colonization.

Fortunately, both the infection and death rates of First Nations and Inuit are less than a third those of the general Canadian population, as of October 2020^{i, 25}. Though Indigenous populations have seemingly flattened the curve, they lack the same access to health services as the general population and the long-term and secondary impacts have yet to be observed. Additionally, some remote communities are simultaneously dealing with an influx of out-of-region workers for nearby megaprojects. For example, all four First Nations partners of the Keeyask hydro dam project erected blockades in May due to concerns about the possible spread of COVID-19 in their communities²⁶.

There are indirect impacts of the virus such as feelings of isolation and increased reports of domestic violence since the lockdown began²⁷. These indirect impacts are anticipated to disproportionately impact Indigenous communities because they already experience higher rates of unemployment²⁸, incarceration²⁹, mental health issues³⁰, and overcrowding of dwellings³¹ than other Canadians.

ⁱ Data is collected for the on-reserve population only.

Racialized Canadians have higher rates of job loss or reduction in hours, a greater impact of COVID-19 on their ability to meet essential needs, and more applications for federal income support³². This is troubling considering they are overrepresented among frontline workers - nurse aides, orderlies, and patient services associates³³, for example. The problem was exacerbated in the case of predominantly-Haitian asylum seekers in Montreal's long-term care sector who were not only more exposed to contracting the disease at work and in overcrowded housing but also did not themselves qualify for health care assistance. The pandemic has exposed how many hard and low-paying jobs mostly occupied by BIPOC actually constitute essential work.



10.1%

Unemployment among the Aboriginal population in Canada in 2019 – nearly twice the rate of the non-Aboriginal population³⁴.

24%

Of Indigenous peoples living in urban areas reported incomes below the poverty line, compared to 13% of the non-Indigenous population³⁵.

27.2%

Of Canadians identify as a visible minority of which Indigenous, South Asian, Chinese, and Blacks represent the largest groups^{36, 37}.

"I was disappointed to learn that no socio-economic mapping has been done of the proximity of such sources of exposure to toxics with [I]ndigenous peoples [in Canada], or others at elevated risk, such as low income or minority communities, for that matter."

*- **Baskut Tuncak**, Former U.N. Special Rapporteur on human rights and toxics³⁸*

The disproportionate exposure of low-income, black and Indigenous communities to health hazards through policies and regulations is termed *environmental racism* and these areas have been ominously termed *sacrifice zones*. There is evidence that environmental racism exists in Canada^{39, 40, 41} but there is no comprehensive view of the issue since an environmental justice lens does not exist in Canada's legal framework as it does in Europe, the U.S and South Africa, despite multiple calls by parliamentary committees and experts⁴².

The Government Emergency Response

Strategic Emergency Management

Just over a decade has elapsed since the H1N1 pandemic, an experience which should be in living memory for most policy-makers. However, we appear to have not made appreciable progress on managing pandemics as a nation.

An efficient emergency plan consists of a virtuous cycle of measures

1. **Prevention** – in order to reduce the risk of emergencies to occur
2. **Preparedness** – to operationalize readiness and coordination to minimize consequences
3. **Response** – in accordance to strategic priorities
4. **Recovery** – to redress, restore and improve past practices

Prevention is the most effective and efficient approach to emergency management. An investigation into our emergency procedure would unfortunately reveal that prevention was poor; we were not prepared; and we don't yet have a plan for recovery. There was a lack of preparedness in the public health sector and overall lack of emergency planning by business and large corporations. Time is running out; we should be planning recovery and working on prevention of future pandemics.

According to the World Health Organization, the cost of fighting the disease, estimated to be in the tens of trillions of dollars, could end up being **500 times** more than the cost of investing in limiting the transmission of new diseases from tropical rainforests^{43, 44}.

The diagram below, adapted from Public Safety Canada's *Emergency Management Planning Guide 2010–2011*, illustrates the relationship between recovery from an emergency and prevention and mitigation of future emergencies. According to this framework, Canadians should expect a recovery that contributes to reducing the risk of future pandemics.

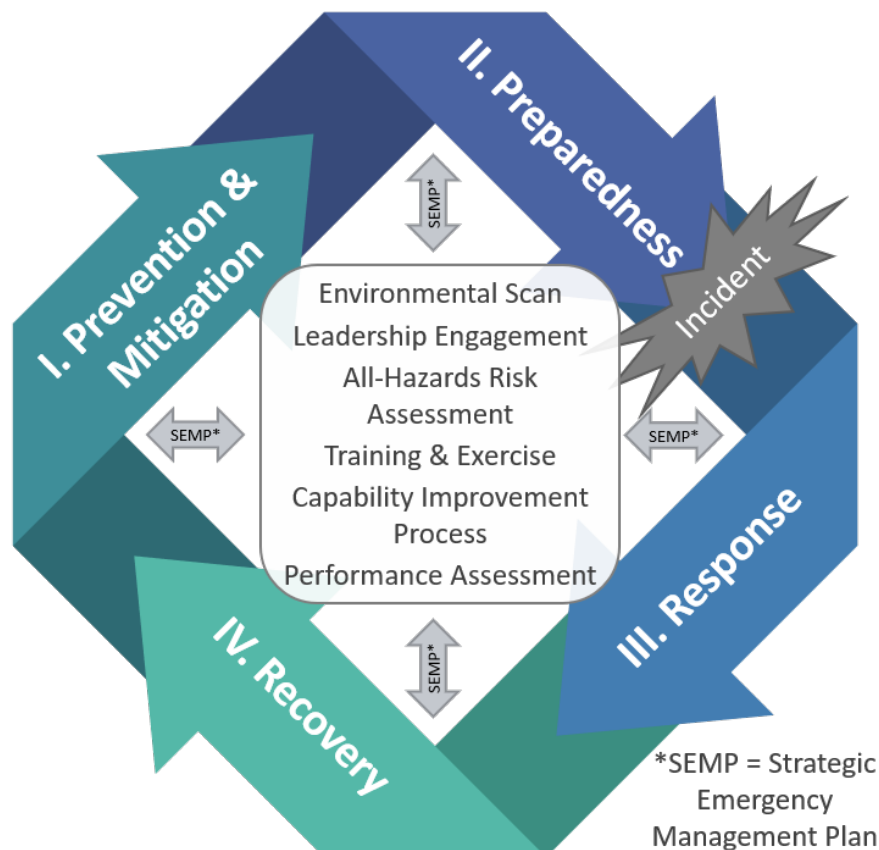


Figure 3: Emergency Management Continuum, adapted from Public Safety Canada's Emergency Management Planning Guide 2010-2011⁴⁵.

Emergency Response Measures So Far

The government began advising Canadians to avoid all non-essential travel, including cruise ships, outside of Canada in March 2020. The border with the United States has been closed since March 21st, in an agreement that was renewed a seventh time in October to extend the closure until, at the earliest, November 21, 2020⁴⁶. In some instances, inter-provincial travel was prohibited or regulated in order to reduce spread of the virus. Travellers are screened and must undergo mandatory self-isolation for 14 days upon returning to the country⁴⁷.

Lockdown measures were introduced at the discretion of the provincial and territorial governments throughout the month of March and several jurisdictions have presented plans for the resumption of daily life and economic activity. However, provinces are selectively reapplying lockdowns to hot spot areas as the second wave strikes.

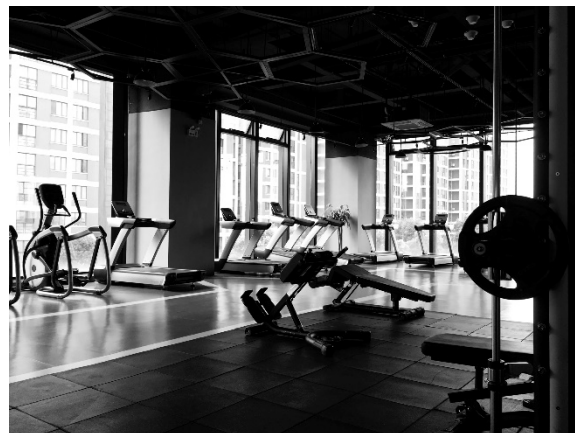
First Confirmed Case

January 27, 2020



Non-Essential Travel Advisory

Since March 14, 2020



US Border Closure

Since March 21, 2020



Continuation of Democracy

The pandemic has shown how Canada's Parliament was not prepared for pandemics and had to improvise. Some countries were able to respond to the upheaval by instituting timely and effective provisions so that their primary and secondary chambers could continue the study of legislation. The Senates of Chile, France, Italy, and the Netherlands, for example, were early adopters of either virtual meetings or mandating social distancing practices for physical sessions, unlike the Senate of Canada which consistently lagged behind the House of Commons in adapting its processes⁴⁸.



HOUSE OF COMMONS

During the first wave of the pandemic and beginning April 28, 2020, the House of Commons met regularly, as the Special Committee on the COVID-19 Pandemic (COVI). Typically, the committee met for in-person sessions once a week and using video-conferencing software for two additional sessions where members of Parliament had an opportunity to ask questions to the government.

The Standing Committees on both Finance and Health were mandated to oversee the emergency response, while most other committees were able to resume virtually by mid-June.

To enhance the ability of parliamentarians to participate in virtual proceedings the Committee on Procedure and House Affairs has recommended the implementation of a voting application⁴⁹.



SENATE OF CANADA

The Senate did not meet regularly during the pandemic and only convened when recalled, briefly, to address systemic racism and to discuss and vote on emergency response measures proposed by the government.

Senators did however grant permission for two oversight committees, the Standing Senate Committees on National Finance (NFFN) and Social Affairs, Science and Technology (SOCT) to meet virtually, hear testimony, and produce reports with respect to the emergency response measures.

Despite having been urged by certain Senators to develop a plan for virtual or hybrid sittings, a clear plan has only been introduced in October 2020. The prevention of many Senators from effectively participating in legislative oversight of the response is weakening public trust in our democratic institutions

During the pandemic, democracy was respected to different degrees in different parts of the world – It is time for Canada to step up and show its agility and strength by being a leader and role model in improving and maintaining its democratic institutions.



Emergency Response Legislation

The ordinary legislative process was upended in order to ensure the speedy adoption of emergency legislation. Instead of being delegated to specialized committees where Senators can call upon expert witnesses and government representatives to analyse the changes, the study of emergency response bills has been limited to brief periods of questioning the responsible Minister followed by a vote.

For the little amount of time that has been spent in chamber, there has been many bills that have been extremely consequential to the lives of Canadians. For example, Important crown corporations have had changes to their mandates with little parliamentary oversight – an important topic that is examined further in our discussion on [Accountability through Transparency and Conditionality](#).

C-13

March 25, 2020

Sweeping legislation which, among its 18 parts, served to enact the Canada Emergency Response Benefit (CERB); enabled various income tax credits and rebates; vastly expanded the powers of Export Development Canada; and provided financial relief to students.



C-14

April 11, 2020

Introduced the Canada Emergency Wage Subsidy (CEWS).



C-16

May 15, 2020

Approved a \$500 million loan to the Canadian Dairy Commission.



C-15

May 1, 2020

Introduced the Canada Emergency Student Benefit (CESB).



C-18 and C-19

June 26, 2020

Approved an additional \$6 billion for the government's COVID-19 response.



C-20

July 27, 2020

Modified and extended the CEWS and enabled a one-time payment for persons with disabilities.



C-4

October 2, 2020

Introduced the Canada Recovery, Canada Recovery Sickness, and Canada Recovery Caregiving Benefits.



Financial Aid and Stimulus

The Government has offered targeted support for individuals including those who have been laid off (\$2000 per month), students (\$1250 per month), seniors (\$3 billion), Indigenous peoples (\$305 million), and other vulnerable populations. In order to encourage companies to retain their workforce, a 75% wage subsidy is offered to employees of organizations who experienced a loss of revenue after the lockdown was enforced. To address liquidity, small and medium enterprises have access to a loan of up to \$40,000, with up to 25% forgivable upon successful repayment before the end of 2022.

Total direct support now approaches \$200 billion, while \$471.5 billion was made available as credit, and another \$300 billion in the form of stability buffer for financial institutions. These programs are designed to provide short-term economic stabilization and do not constitute the recovery.

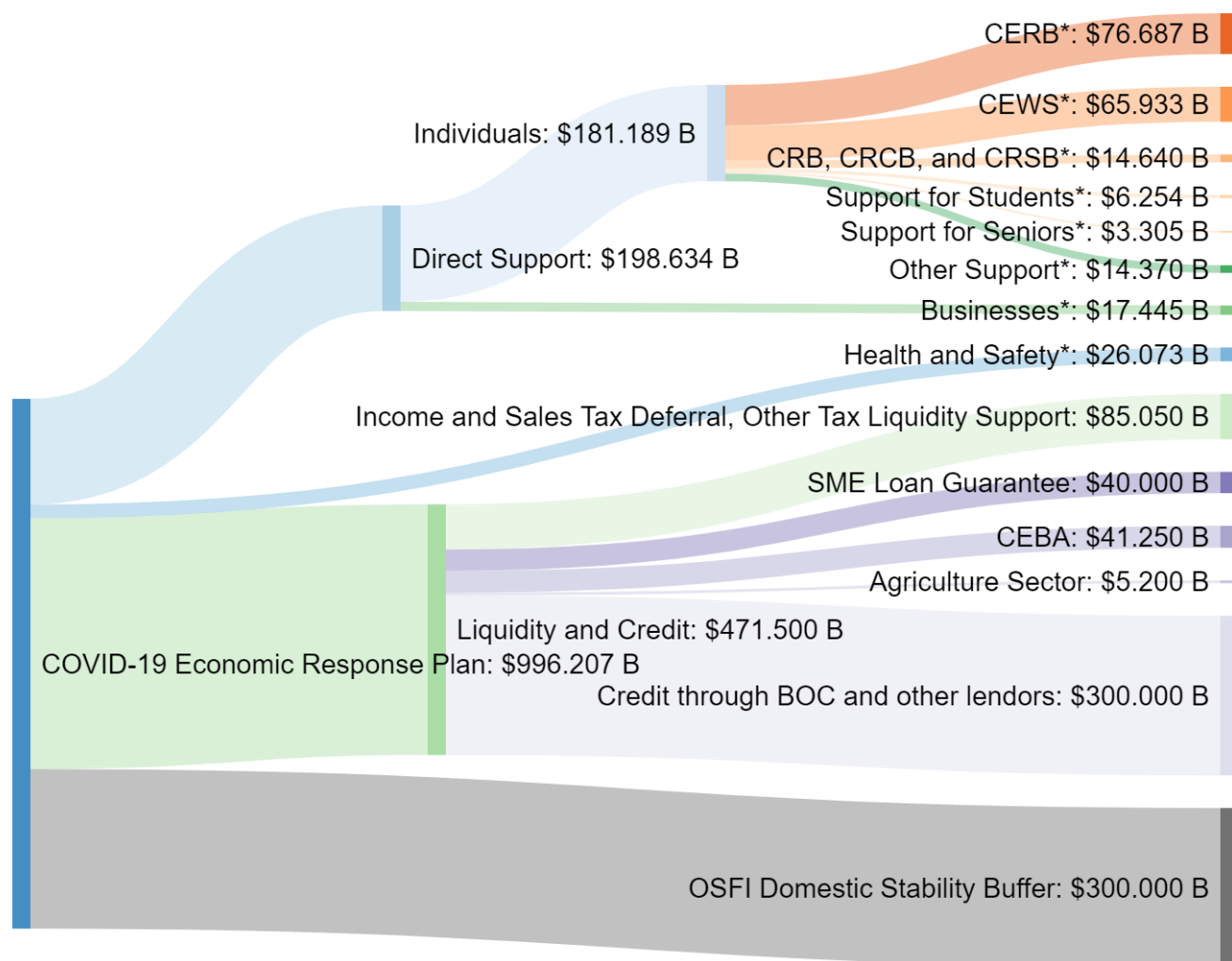


Figure 4: Sankey diagram of emergency funding flows grouped by major theme. This graph represents data provided by the Department of Finance to the Standing Senate Committee on National Finance (August 6, 2020) and does not necessarily include unreported funds such as those allocated through EDC and Canada Account because the Minister of Finance was not specifically required to report on it to Parliament⁵⁰. Allocations marked with an asterisk (*) are estimates that were either added or adjusted based on PBO calculations⁵¹. For a more detailed account of emergency response flows, please see the full diagram at <https://rosagalvez.ca/en-covid-spending-sankey/>. This diagram was made by Nick Zrinyi using [SankeyMATIC](#).

The Link Between the Environment and Pandemics

The risk of emergence of new pandemics can be considered in the context of three factors: **emergence**, **transmission**, and **lethality**. Each of these three factors on their own are highly dependent on environmental factors. In this section, we will present the intersection of the human propensity for growth, its resultant environmental degradation, and the increased risk of disease.

Emergence

More than half of new infectious diseases are of zoonotic origin, the majority of which originate in wildlife^{52, 53} adding to the over 200 bat coronaviruses that have been identified⁵⁴. Even before the COVID-19 pandemic, the frequency and severity of zoonotic disease was increasing in correlation with our intrusion into and exploitation of the natural environment⁵⁵.

Habitat destruction due to forestry, mining, and other land-use changes causes distortions in biodiversity levels ultimately increasing the risk that zoonotic diseases may emerge⁵⁶. Warmer temperatures and increased rainfall can also create ideal conditions for vectors and pathogens⁵⁷.



Major global pandemics of the 20th and 21st centuries

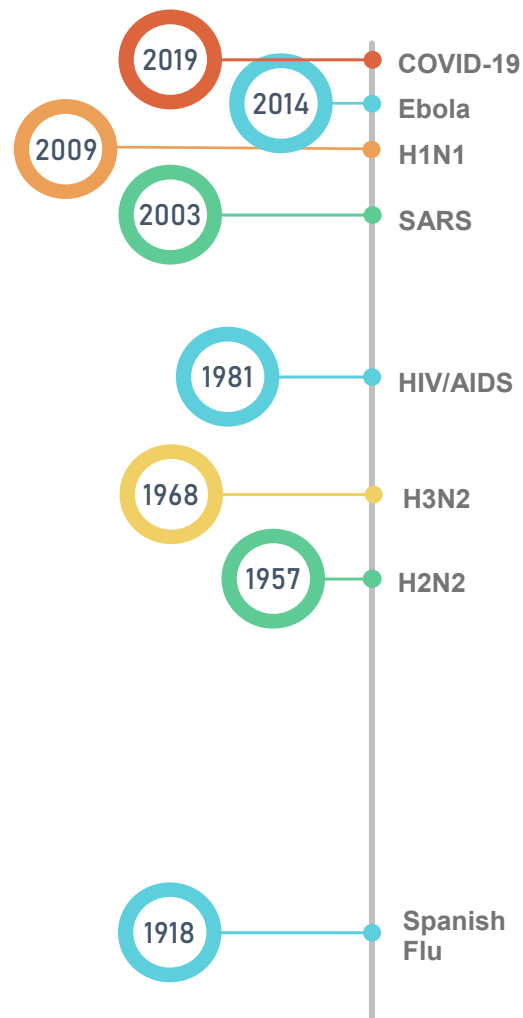


Figure 5: Timeline of recent major pandemics^{58, 59}.
Illustration by Nick Zrinyi.

Transmission

Human encroachment into the natural environment not only increase the risk of disease emergence but provides opportunity for new and existing diseases to transmit from wildlife to humans. This concept is sometimes referred to as *spillover*. An example of this is the movement of disease vectors such as ticks, due to warmer average temperatures, into areas which were previously unaccommodating.

Other factors serve to increase the human-wildlife interface such as underregulated wet markets, illegal trade of wildlife and exotic animals, and large-scale factory farming⁶⁰.

Read More: [Preventing the Next Pandemic: Zoonotic diseases and how to break the chain of transmission](#) (United Nations Environment Programme)

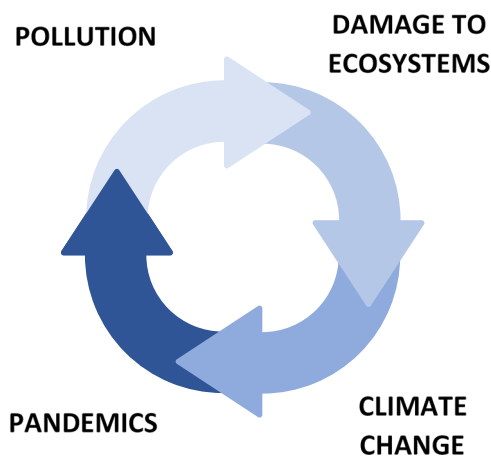
Lethality

Climate change and weak environmental regulation results in a suite of impacts that act synergistically with the health risks posed by many infectious diseases. Here are some examples of those synergistic effects:

- » Air pollution (in the form of particulate matter, black carbon, and nitrous and sulfur oxides), which already causes over 5000 deaths per year in Canada⁶¹, increases mortality and morbidity rates of diseases.
- » Climate change causes political instability and displacements, both of which impact the ability of an individual to seek medical assistance.

Around the world, the impact on food supply will exacerbate malnutrition, another leading factor in the lethality of disease.

The Vicious Cycle We Must Break



The One Health Approach



Read more: [One Health Fact Sheet](#) (Centres for Disease Control and Prevention)

Climate Change

The Earth's atmosphere and oceans are unequivocally heating⁶². This phenomenon, a result of rising anthropogenic greenhouse gas (GHG) emissions is expected to worsen over the next century unless society undergoes a swift and far-reaching *transformation* towards low-carbon energy sources.

The extraction, refining, and burning of fossil fuels to produce petrochemicals and to generate electricity and heat emit the vast majority of total global greenhouse gas emissions. In fact, 78% of the total increase in emissions between 1970 and 2010 is due to fossil fuel combustion and industrial processes. Regrettably, fossil fuels have worked their way into almost every facet of our modern lives. Fossil fuels (oil, gas and coal) represent 75% of Canada's energy mix⁶³ and its single largest source of emissions; Some contributor's emissions, such as those of the oil sands operations, have been steadily increasing for the past several decades⁶⁴. Incidentally, Alberta's economy has grown less diversified, despite economists' warnings that the present geopolitics indicate that oil and gas investments represent high risks to our financial and economic systems.

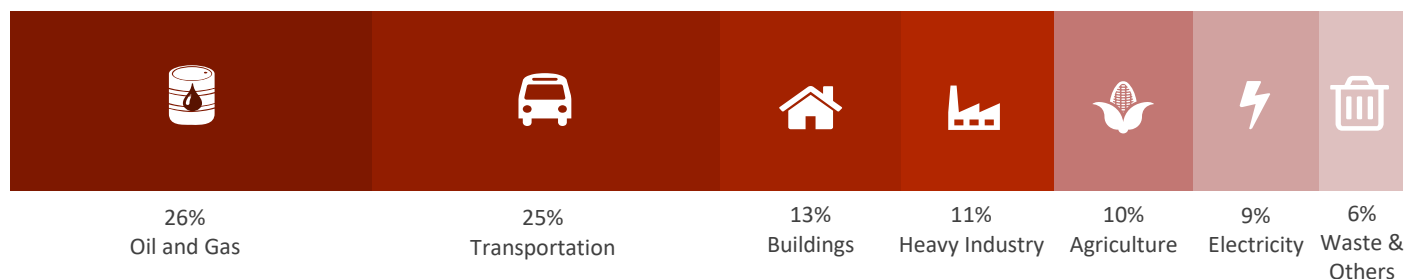


Figure 6: GHG emissions sources in Canada by sector, 2018⁶⁵.

The average annual temperature in Canada has increased by 1.7 °C since 1948⁶⁶. This warming is resulting in, among others, an increase in the frequency and severity of adverse weather events, ocean acidification, melting of our cryosphere, and extinction^{67,68}. Each of these climate change impacts in turn causes a series of cascading impacts which infiltrate every facet of our society.



Considering Canada's historical contributions to atmospheric carbon an emissions reductions goal of 140% below 2005 levels by 2030 would represent Canada's *fair share*⁷². Instead, Canada has consistently failed to set and meet targets commensurate with science and equity⁷³ and is on track to miss its Paris Agreement targets for 2030 despite commitments to exceed it dating back to 2016⁷⁴. The world is taking notice; Canada is far behind its peers when it comes to addressing climate change. Our nation ranks 55 out of 61 countries on the Climate Change Performance Index, a measure which considers GHG emissions, prevalence of renewable energy, energy use, and climate policy⁷⁵.

In 2019, the Canadian government announced its commitment to reach net-zero emissions by 2050 and to legislate 5-year emissions reductions goals. The government still needs to introduce and pass a bill that ensures climate accountability.

Calls to transition to a low-carbon economy for an exceedingly long time have not been heard even if political and business leaders have joined the movement in recent years. Setting imprecise unambitious targets and consistently falling short is causing distrust in our political class and undermining the ability of democratic institutions to address the climate crisis⁷⁶.

For a transition to be appropriately called a *transition* it must be achieved within a short, specified period. A *transformation* is needed. Due to past inaction, the opportunity window to incrementally transition into a climate-safe future has expired. Our only chance is to rapidly transform our energy systems and entire economy without further hesitation.

Spotlight: September 2020 Speech from the Throne

The September 23rd, 2020 Speech from the Throne introduced the government's four-pillar approach to addressing the pandemic. The government approach is built on a foundation of protecting Canadians, support for people and businesses, and a resilient recovery all while continuing ongoing discussions around equality, reconciliation, and systemic racism.

Read more: [Speech from the Throne to open the Second Session of the Forty-Third Parliament of Canada](#)

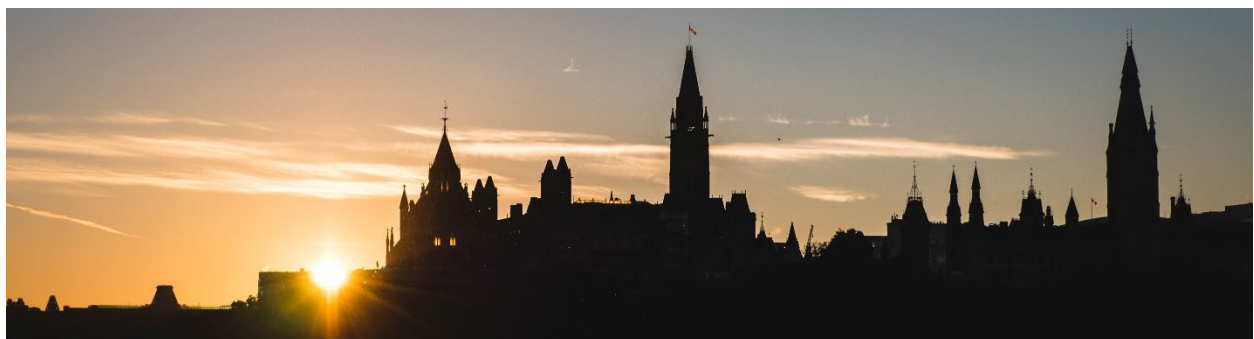
Many expected the Speech from the Throne to be transformational in aiming to fix the rigged socio-economic system that COVID-19 had exposed. Unfortunately, it instead was a step forward at a moment where the country needs the courage and hope to take a *giant leap* forward.

The Speech restated the government's 2019 commitments to legislate climate commitments, reform the Canadian Environmental Protection Act (CEPA), ban single-use plastics, establish the Clean Power Fund and the Canada Water Agency, and to enshrine the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) in Canadian law. Among new promises were a commitment to tax extreme wealth by targeting stock options and corporate tax avoidance and the creation of an Action Plan for Women in the Economy and a 2019-2022 Anti-Racism Strategy⁷⁷.

To move forward on this, it will be crucial for the government to present to Canadians:

1. A detailed plan and timeline for implementation
2. Goals, objectives, and indicators
3. A budget with expected outcomes including return on investment

Read more: [Official Response to Speech from the Throne from Senator Rosa Galvez](#)



Responses to Economic Crises



The pandemic has reduced the buying power of citizens because more individuals have been unable to work, personal savings have been reallocated towards stocking up on emergency supplies, and an increase in uncertainty results in a deferral of non-essential purchases, leading to an economic crisis

Indeed, decision-makers should include in their reflections the following question: If at present only essential services and products are 'consumed' and economy is at the brink of recession; what does that say about our economy? Was our economy based on the global trade of superfluous products? Is the Canadian economy too dependant on foreign supply chains for essential supplies?

The crisis caused by the COVID-19 pandemic, however, is fundamentally different from the 2008 economic crisis, which had first emerged within the finance sector, in that the cause is external to the market and may have worst impacts. Crises with different causes and scale require different adaptive responses: the COVID-19 recovery requires more than regulatory tweaks. It must include stimulus measures that can be selected to build resilience against the causes and impacts of future pandemics and of climate change.

Downfalls of Traditional Stimulus

Stimulus is traditionally distributed among those organizations with the strongest lobbies, most often incumbent high emitting industries regardless of the return on investment, environmental or social wellbeing outcomes, or risk. This section discusses the shortcomings of stimulus measures based on an unreliable dispersal of financial assistance.

Carbon Lock-In

Partly responsible for the complacency and slow pace of the transition is the inertia created by our reliance on fossil fuel energy systems, a concept termed *carbon lock-in*.

Carbon lock-in is self-perpetuated and exacerbated by those who seek short-term profit at the expense of long-term environmental degradation. Lobbyists for oil companies and industry associations bear a significant responsibility for generating and maintaining this inertia through undue influence⁷⁸. Since the lockdown began, the oil industry has held at least 158 meetings with federal officials and parliamentarians⁷⁹. A memo from the Canadian Association of Petroleum Producers give some insight. The memo requests a suspension of regulations involving the obligation to report lobbying, environmental protection, Indigenous rights and the climate^{80, 81}. In accordance with their requests, both the publication timeline for the Clean Fuel Standard⁸² and \$76 million in oil and gas industry clean-up fees have been delayed⁸³.

Policies like a permanent rising federal price on carbon and incentives for learning-by-doing when it comes to renewable energy and energy efficiency innovation help break us out of carbon lock-in⁸⁴.

Stranded Assets and Environmental Liabilities

Geopolitics, the pandemic, and Canada’s domestic and international emissions reductions commitments are rendering fossil fuel infrastructure assets less likely to fulfill their intended life span and causing them to rapidly depreciate⁸⁵. Extraction facilities, fossil fuel-fed power plants, and pipelines are all therefore at risk of becoming stranded assets as we shift towards low-carbon energy sources.

Lately, we have seen a wave of large-scale divestment from oil sands operations and of fossil fuel companies around the world and BP has predicted oil demand will continue to decline⁸⁶. In the US, the shale industry has written down over USD\$450 billion in invested capital and seen the bankruptcy of 190 companies since 2010⁸⁷.

In a world where we meet our Paris Agreement commitment and limit warming to 2 °C (ideally 1.5 °C) more than 80% of all proven fossil fuel resources become stranded⁸⁸. Globally, there is an estimated USD\$1-4 trillion of soon-to-be stranded assets, and researchers are pegging Canada as among the most to lose from the transition given the GHG intensive nature of our fossil fuel resources⁸⁹.

Stimulus investments of public funds must consider the trend of rapid depreciation of fossil fuel corporations and their increasingly uncertain assets.

80% Of declared oil, gas, and coal reserves risk becoming stranded if we are to meet our Paris Agreement commitments ⁹⁰ .	79.4% reduction In oil sands capital expenditures since 2014. It is expected to decline again in 2020 for a sixth straight year ⁹¹ .	\$87 billion Downgrade in value of fossil fuel assets from the seven top oil firms since the end of 2019 ⁹² .
--	---	--

Struggling fossil fuel companies have already left a multibillion-dollar legacy of environmental liabilities in the form of mine tailings, orphan wells, and disused pipelines⁹³. Worst case scenario estimates from the Alberta Energy Regulator (AER) have put the price tag at around \$260 billion for oil and gas liabilities in Alberta alone⁹⁴. Despite being legally responsible for these liabilities, oil and gas companies have set aside a small fraction of the anticipated costs and it the full burden will inevitably fall on taxpayers as the Auditor General pointed out in their 2015 report⁹⁵.

This state of affairs neglects the polluter pays principle, risks public funds, sets back reconciliation efforts and has been flagged as a potential human rights violation of Indigenous Peoples⁹⁶. Canadians, and particularly Albertans, deserve a transparent accounting of these liabilities and a realistic plan for addressing it.

91,000 Inactive wells in Alberta that no longer produce oil but have not been remediated ⁹⁷ .	0.1% Of land mined for oil sands has been reclaimed and returned to the province ⁹⁸ .	\$60 billion to \$260 billion Estimated cleanup cost for environmental liabilities in Alberta due to oil and gas activity ⁹⁹ .
--	--	---

Financial Risk

The fossil fuel industry's stock value has underperformed in the past decade and has seen lots of volatility in financial markets especially since the beginning of 2020 but pre-dating the pandemic. In contrast, historical trends show renewable and clean tech investment provide higher market returns and seem to have recovered fully in 2020, whereas oil did not.

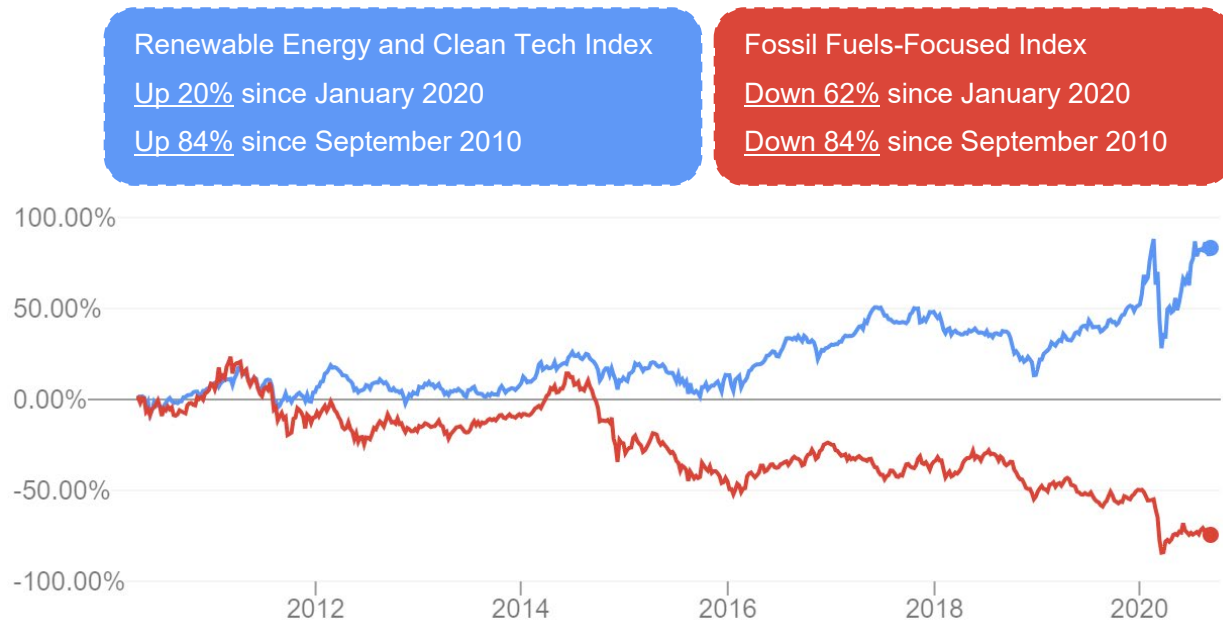


Figure 7: Stock Indices (S&P/TSX Renewable Energy and Clean Technology Index and iShares S&P/TSX Capped Energy Index ETF) since September 2010 ¹⁰⁰.

Investments that do not undergo rigorous assessments and screening for environment, social and governance criteria improperly assess risks and can become a liability to shareholders or investors with a fiduciary duty, such as pension plans. Coupled with the risk of losses due to asset stranding, investments in fossil fuels' climate impacts are increasingly being questioned with regard to their consistency with fiduciary duties investment and legal professionals are increasingly saying Canadian boards are legally obliged to address climate risks ¹⁰¹. A recent report shed light on the troubling incrementalism of the Canada Pension Plan Investment Board in that regard ¹⁰². Adding to these investor risks, fossil fuel projects are becoming harder and harder to insure as many of the world's largest insurance providers are increasingly refusing to back oil sands projects, often citing poor disclosure and irresponsible levels of emissions ^{103, 104, 105, 106}.

Highly polluting companies have historically been hesitant to disclose climate-related risks ¹⁰⁷. GHG emissions and other metrics of climate-related risks should be the object of mandatory disclosure according to rigorous and consistent standards to protect investors from misleading forecasts which are not aligned with the Paris Agreement. New Zealand, for example, is taking the lead on this by planning to legislate mandatory disclosure of climate risks by banks, assets managers, and insurers ¹⁰⁸.

Reserve banks and trade commissions around the world are warning that addressing the financial risk of climate change had been delayed due to COVID-19, but can not longer be ignored. In fact, they are urging banks, investors, and insurers to estimate the physical impact of changing climate on their balance sheets ^{109, 110}.

A company's unwillingness to disclose its climate risks and to align its business model with Canada's Paris Agreement commitment should preclude it from receiving stimulus aid.

Increased Inequality

Economic crises can lead to an increase in inequality, a phenomenon observed in the United States after the 2008-09 recession¹¹¹. Unexpected crises apply pressure to low income households by emptying out their emergency savings, incurring unexpected costs or unpaid sick leave, or endangering their families by picking up precarious work on the front line. In contrast, the top 1% can weather the financial storm, gain from fluctuations in the markets, access priority health care, and ride the recovery wave without having to wait for the next paycheck or emergency benefit announcement. In fact, the total wealth of Canada's 20 richest billionaires has grown by \$37 billion since March 2020¹¹². Meanwhile, as of August 15, 1.8 million Canadian workers remain affected by the lockdown, a number that peaked in April at 5.5 million¹¹³.

Higher levels of inequality correlate with lower levels of life satisfaction¹¹⁴ and countries whose income inequality is decreasing grow faster than those with rising inequality¹¹⁵.

Traditional stimulus also reinforces current unacceptable social norms such as the placement of highly-polluting industry near low-income or racialized communities. The emergency response has already, for example, seen the suspension of certain environmental monitoring and reporting requirements in the Alberta oil sands¹¹⁶, a region that is home to 18 First Nations and 6 Métis settlements¹¹⁷.



Advantages of Clean and Just Stimulus

What is Clean and Just Stimulus?

Clean stimulus provides capital to organizations and individuals who seek to address the root causes of climate change and inequality. A key feature of a clean and just recovery is that it provides stimulus to businesses, people, and ideas that are in the best interests of society in that they contribute to social and/or environmental wellbeing. When determining whether given stimulus measure or policy we can turn to specific criteria: The World Economic Forum, for example, recently published a detailed guide to measuring and reporting sustainable value creation¹¹⁸ and the Canadian Centre for Climate Choices offers 11 ways to measure clean growth (illustrated below)¹¹⁹.

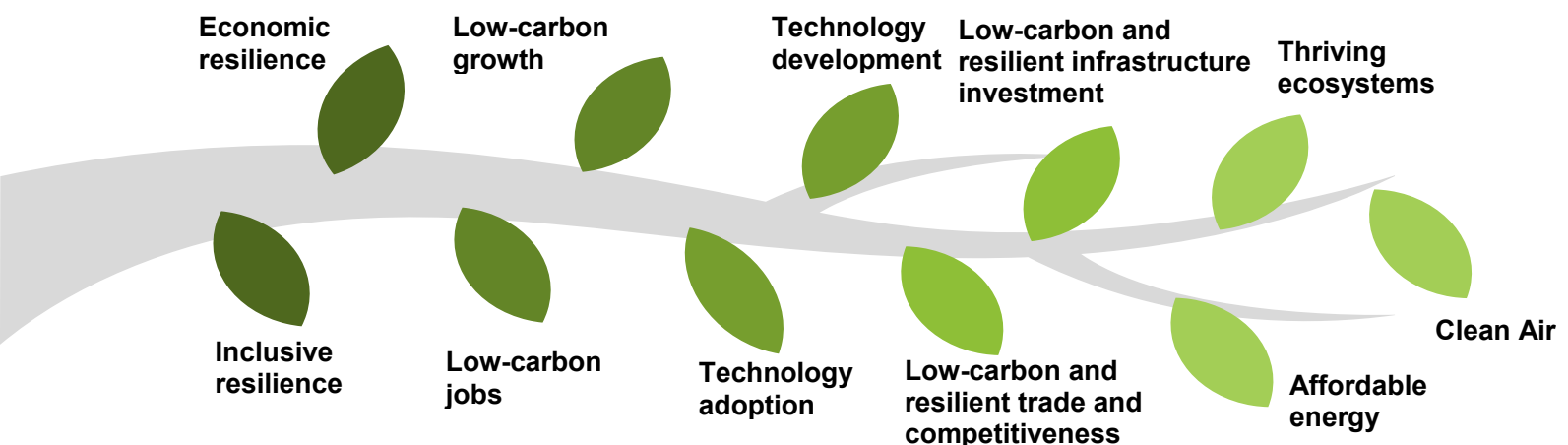


Figure 8: The Canadian Centre for Climate Choices' 11 ways to measure clean growth.

In May 2020, researchers from University of Oxford, London School of Economics and Political Science, Columbia University, and University of Cambridge surveyed 231 central bank officials, finance ministry officials, and other economic experts from G20 countries on the relative performance of 25 major fiscal recovery policies across four dimensions: speed of implementation, economic multiplier, climate impact potential, and overall desirability¹²⁰.

In their submission to the Standing Senate Committee on National Finance, the researchers identified policies with high potential on both economic multiplier and climate impact metrics. The highest rated overall policies were:

Clean Energy Infrastructure Investment	Building Efficiency Retrofits	Investment in Education and Training	Natural Capital Investment	Clean Research and Development
--	-------------------------------	--------------------------------------	----------------------------	--------------------------------

Meanwhile, the lowest rated overall policies were airline bailouts, traditional transport infrastructure, and income tax cuts. If they occur, bailouts of emissions-intensive industries such as airlines and fossil fuels should be conditional on these industries developing a measurable plan of action for the *transformation* towards a net-zero emissions future.

High Overall Performance

Clean and just recovery policies and investments boost the market participation of the renewable energy and clean tech sectors and make it more resilient to future impacts. Over the past decade and throughout the first phase of the pandemic, portfolios with clean energy firms have posted higher returns with less volatility than those centered around fossil fuels¹²¹. Further, the collaboration between the International Energy Agency and Imperial College London found that at the height of the pandemic in April 2020, while the US fossil fuel sector was experiencing a 40.5% decline in total return, the renewable power sector has kept its head above water with a 2.2% return¹²².

When considering the allocation of billions of dollars in economic stimulus it is important to remember that the ultimate goal of those funds should be to support individuals by providing them with economic opportunity within ecological boundaries. Therefore, in order to measure the effectiveness of a given investment, we must ensure that the ultimate purpose is being met by measuring progress towards multiple dimensions of collective well-being above and beyond our gross domestic product, or GDP.

“GDP is a very old and traditional measure of the economy. It misses a lot of things that matter [to] a lot to people.”

-Stephen Poloz, Former Governor of the Bank of Canada¹²³

GDP essentially captures how efficiently we are extracting natural resources and transforming them at the lowest cost. It is a very limited indicator which does not capture all benefits to society such as wellbeing and meaningful employment nor damage to the climate and biosphere. Quite importantly, in fact, it inappropriately captures negative impacts as positive contributions to the economy such as in the case of rebuilding after a natural disaster. A better measure of policy performance would be a dashboard conveying information about meaningful employment, health, housing, education, the environment, life satisfaction, safety, and participation in democracy. Multiple indicators have been developed through a more holistic view of performance such as the Sustainable Prosperity Index¹²⁴, the Index of Social Health¹²⁵, the Genuine Progress Indicator¹²⁶, and the Canadian Index of Wellbeing¹²⁷.

Employment



Renewable energy investment creates more jobs than investment in traditional energy sources: a recent study found that each \$1 million investment into renewable technologies and energy efficiency yields almost three times more jobs than in investments in oil, gas, and coal¹²⁸.

Wellbeing

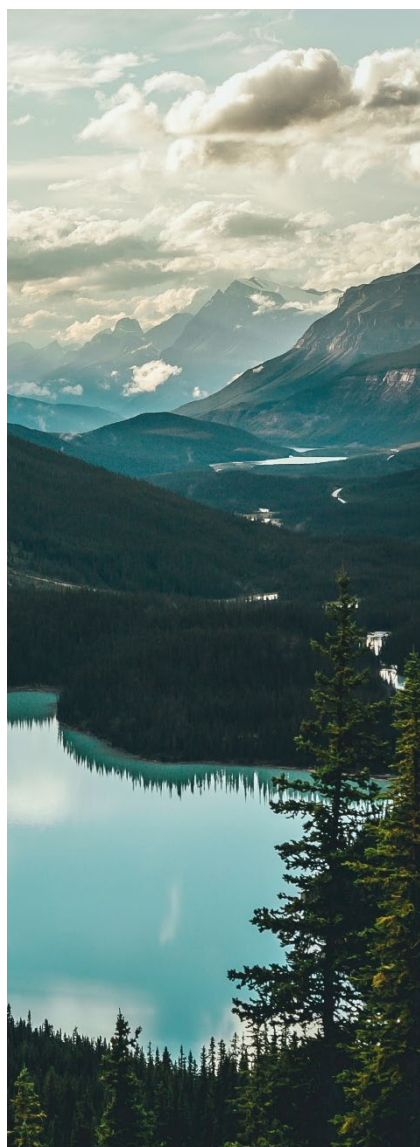


It is well understood that climate change not only erodes our physical environment, but also our social environment. Addressing climate change with strong sustainability-focused policies has measurable benefits for mental health and overall happiness^{129, 130}.

Environmental Benefits and Health co-benefits

Researchers have modelled that a post-COVID-19 recovery based on strong climate policy measures and reductions in fossil fuel investments has a good chance of keeping global temperature change above pre-industrial within the 1.5 °C limit, saving around 0.3 °C of future warming by 2050¹³¹. More importantly, this would set us on a path towards greater reductions by ensuring future policies are scrutinized through a rigorous climate lens. Because climate lenses are currently only department specific and guidance for projects assessed under the new Impact Assessment Act is inadequate, a rigorous overarching lens through which all policies must be scrutinized still needs to be developed and implemented.

Mitigating the impacts of climate change carries a suite of co-benefits. Stabilizing the average global temperature would temper the spread of agricultural pests and disease vectors a factor that may be protective towards future pandemics. Similarly, improvements in air quality that come with a *transformation* away from carbon-intensive energy sources will reduce mortality and morbidity associated with such pollution. A closer eye on and tighter legislative framework around natural resource development will help make our economies and our ecosystems more resilient by slowing the unprecedented rate of biodiversity loss.



Social Justice and Tackling Inequality

The solution to substantially advancing the *transformation* to a low carbon economy in a fair way is not just technological or political. Social equality and wellbeing need to be at the center of the transformation. All stimulus measures, and in fact all policies going forward, need to be deployed with a social justice lens that carefully considers intersectionality.

Ensuring a more equitable distribution of both the benefits and the costs of economic recovery enhances the ability of vulnerable groups to cope with and absorb impacts, a concept termed resilience. For example, a more equitable distribution of wealth means more families can set aside emergency funds

A recent Canada-specific modelling exercise examined the social and environmental outcomes of different policy strategies: business as usual, a scenario that focused on climate policy, and a *Sustainable Prosperity Scenario* that addresses both environmental issues and social issues. The research showed that a *Sustainable Prosperity Scenario* would lead to overall better quality of life outcomes over 50 years than both other scenarios¹³².

The transformation to a low-carbon economy means that workers in the struggling sector will also need to be transitioned to sustainable, long-term, and meaningful jobs. Public funding must be directed towards continuing education and re-training programs for fossil fuel industry workers so that nobody gets left behind and so that families do not bear the burden of our past mistakes.

“Canada’s energy workers have the skills needed to build the new, net-zero economy and kickstart Canada’s recovery from the pandemic.”

- Iron + Earth, a non-profit led by oilsands workers¹³³



The inequitable distribution of income and wealth results in political polarization, slower economic growth, and the erosion of our social fabric. The share of wealth held by the top few has been magnified by a political culture of low taxes, tax evasion, deregulation, privatization, and weak legal protections for trade unions. A more equitable distribution of resources can - and should - be supported across each sector of society, however, both COVID-19 and climate change are standing in the way and in fact making inequality worse.

Worryingly, the most economically well-off tend to benefit the most from periods of crisis. For example, since the March 2020 COVID-19 lockdown, the total wealth of the 20 richest Canadians has increased by \$37 billion¹³⁴ and in the years following the 2008-09 recession, the top 1% incomes in the US grew by 31%, while the bottom 99% incomes grew by only 0.4%¹³⁵.

“Today, we are living through an era of economic transformation comparable in its scale and its scope to the Industrial Revolution. To be sure that this new economy benefits us all and not just the plutocrats, we need to embark on an era of comparably ambitious social and political change.”

- Chrystia Freeland in 2013, now Minister of Finance and Deputy Prime Minister¹³⁶

The history of colonisation, land dispossession, and systemic racism facing Indigenous Peoples and historical discrimination against people of color must be acknowledged as basic starting points in the ‘building back better’ discourse. The key technological policies for a clean recovery can almost all be tailored to empower structurally oppressed groups. For example, the deployment of renewable energy could be led by Indigenous youth¹³⁷ and favor Indigenous ownership¹³⁸ and energy efficiency retrofits which directly address energy insecurity by lowering energy bills for those whose energy bills represent a large share of their monthly income. It has been estimated that bridging the gap in economic outcomes between Indigenous and non-Indigenous populations in Canada could increase GDP by \$27.7 billion annually, or 1.5%¹³⁹.

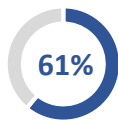
US President-elect Joe Biden, for example, is proposing setting a goal that challenged communities receive 40% of overall benefits of spending in the areas of clean energy and energy efficiency deployment; clean transit and transportation; affordable and sustainable housing; training and workforce development; remediation and reduction of legacy pollution; and development of critical clean water infrastructure¹⁴⁰. Further, in New Zealand many policy measures are co-designed with indigenous peoples and inspired by Maori values, something which could inspire Canada as we move to implement UNDRIP.



Support for Clean and Just Recovery

Public Approval

Polling overwhelmingly indicates that public opinion leans heavily towards harnessing the opportunity presented by the COVID-19 pandemic to build *forward* better. Canadians agree that it is time for the government to act.



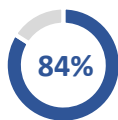
IPSOS: 61% of Canadians agree or tend to agree that it is important that government actions prioritize climate change in the economic recovery after COVID-19 (April 2020)¹⁴¹.



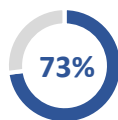
Abacus Data: 58 per cent of Canadians supported continued efforts to fight climate change, despite the pandemic (May 2020)¹⁴².



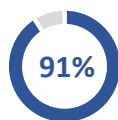
Pollara Strategic Insights: More than 70% of Canadians think it is important to include nature-based climate solutions like new protected areas as part of the new economic recovery measures (July 2020)¹⁴³.



IPSOS: 84% of Canadians would support or somewhat support a recovery plan that "prioritized investment in green sustainable industries" (April 2020)¹⁴⁴.



McAllister: 73% of British Columbians want governments to "build a better, more equitable and sustainable economy" after the pandemic versus "just rebuild the existing economy" (July 2020)¹⁴⁵.



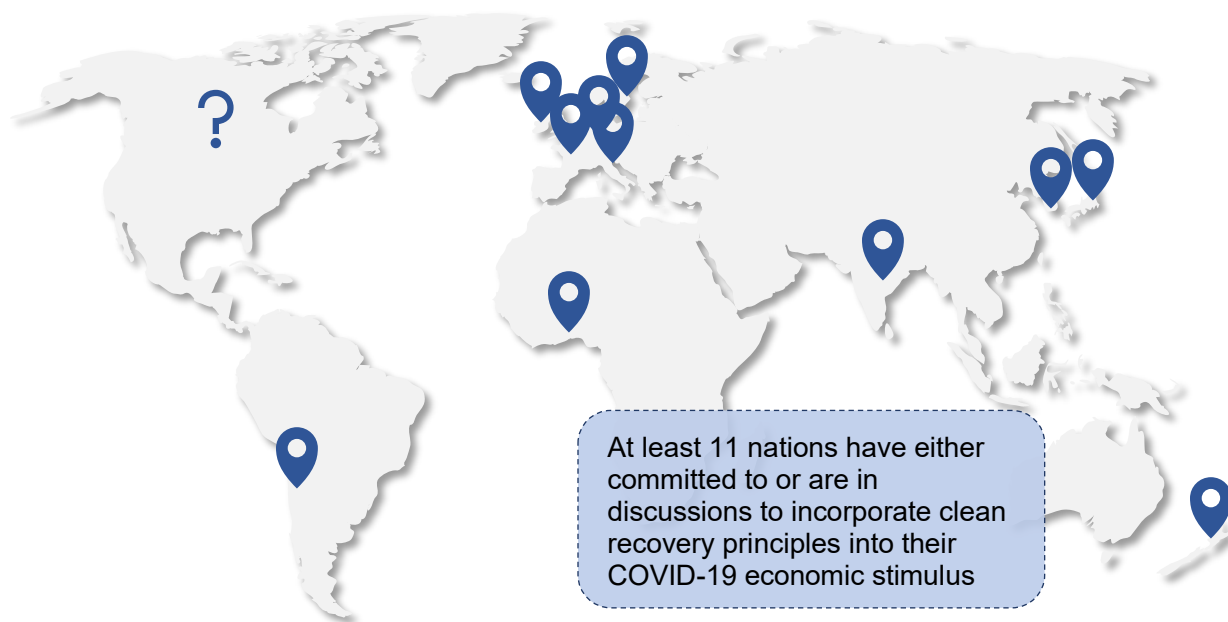
Abacus Data: 91% of Canadians feel it is at least important that Canada's post-COVID-19 recovery focuses on helping people and doesn't allow corporations to set the agenda (September 2020)¹⁴⁶.

Not only do Canadians agree, but so do **community leaders, professionals, and corporations**. 658 Canadian community organizations have endorsed the six principles of a just recovery for all¹⁴⁷ and in another open letter calling for a green recovery, 217 community leaders in Canada called a fair and just transition to a clean economy the "right choice"¹⁴⁸. The letter also recommends using a *climate lens* to determine how stimulus funds are spent as well as investments in the Green Municipal Fund, climate change adaption infrastructure, renewable energy, the zero- and low-emission vehicle industry, energy retrofits for existing buildings, and regenerative agriculture.

Learn More: [Appendix of companies, organizations, countries and individuals that support a recovery centered around clean and just principles.](#)

Clean Stimulus Around the World

Although recovery packages announced globally are still along the lines of traditional stimulus¹⁴⁹, many nations are forward looking and providing a more prosperous future for everyone.



Here is a closer look at three examples of recovery plans around the world that have opted to support and encourage thriving clean energy sectors while reducing their emissions and laying the groundwork to prevent and mitigate future pandemics.

Germany



Germany's CAD\$200 billion recovery budget allocates **\$60 billion** to sustainable investments. The budget plans to^{150, 151}:

- » Double the financial incentive to buy electric cars to \$9000
- » \$10 B for new green hydrogen projects
- » \$14 B for green transportation initiatives
- » \$3 B for green building upgrades
- » \$1 B for improved forest management

South Korea



South Korea's CAD\$180 billion proposed recovery plan features **\$82 billion** in climate spending. Their *Green New Deal* aims to^{152, 153}:

- » Install solar panels on 225,000 public buildings
- » Install smart meters on 5 million apartments
- » Get over 1.3 million zero-emission vehicles on the road by 2025
- » Install 45,000 electric vehicle charging stations
- » Investments in carbon capture and storage

European Union



European Union leaders have agreed to a CAD\$1.2 trillion recovery plan, of which **\$860 billion** is reserved for green projects, including¹⁵⁴:

- » \$140 B per year for home energy efficiency and green heating
- » \$40 B of renewable energy
- » \$32 B for clean cars over two years, plus 2 million charging points in five years
- » Up to \$94 B for zero-emissions trains

Implementing a Clean and Just Recovery

Implementing a clean and just recovery implies not only the identification of the right policies but also the inclusion of accountability mechanisms to ensure financial support delivers positive outcomes that are open for the public to independently assess.

Accountability through Transparency and Conditionality

Since economic crises are moments in time where inequality, fraud and profiteering can increase¹⁵⁵, it is crucial to learn from history and implement strict conditionality and transparency measures around publicly funded stimulus packages. This section discusses how, using Export Development Canada (EDC) as a case study, we should respond to crises with more accountability, transparency, and conditionality and not less.

Export Development Canada: Learning from Past Mistakes

Export Development Canada (EDC), normally provides financial support to businesses who export a product or commodity. The government trusted EDC with recovery from the 2008 financial crisis in the form of a broadening their mandate to serve companies who operate domestically. Through their new mandate they provided a \$13.7 billion bailout for the automotive industry, of which \$3.7 billion of tax payer money has been left unrecovered¹⁵⁶.

This risky investment was issued through the *Canada Account* - a tool used by the Ministers of International Trade and Finance to provide discretionary funding to special projects while bypassing even the weak safeguards under which EDC operates. Under the Canada Account, the loan terms, repayment progress, and even the exact amount of the investments are unfortunately not disclosed^{157, 158}. A problem highlighted by the Auditor General of Canada in their 2014 Fall Report.

"[T]here was no comprehensive reporting of the information to Parliament. ... [W]e found it impossible to gain a complete picture of the assistance provided, the difference the assistance made to the viability of the companies, and the amounts recovered and lost."

- Auditor General of Canada, Support for the Automotive Sector¹⁵⁹

The Auditor General's observations have been echoed since by the Parliamentary Budget Officer¹⁶⁰, the Standing Senate Committee on National Finance¹⁶¹, and even in EDC's legislatively-mandated 10-year review tabled in the House of Commons in 2019. The review, tabled in the House of Commons in June 2019, concluded that EDC had inadequate disclosure practices and minimal legislative requirements relating to disclosure¹⁶².

Export Development Canada: Where are we now?

Far from addressing these criticisms, the COVID-19 emergency measures adopted so far seem to want to replicate and strengthen the formula. Bill C-13, a sweeping 18-part emergency legislation that became law in March 2020, impacted EDC in three key ways:

1. It expanded their mandate to enable the crown corporation to serve companies who do not in fact export but operate domestically.
2. It increased their lending liability from \$45 billion to \$90 billion.
3. It broadened the types of transactions able to be deemed in the national interest, giving cabinet more power to fund risky projects that bypass the already deficient risk assessment measures.

This example is emblematic of most existing federal financing vehicles such as the brand-new Canada Infrastructure Bank, which has similarly deficient legislative frameworks around conditionality and transparency.

We are at risk of repeating past mistakes if we do not learn from both the last economic crisis and the more recent emergency response to this very pandemic. The last crisis clearly signaled that forgoing accountability will end up costing tax payers and recent emergency legislation has made government less accountable and opened the door to inefficient and harmful spending without public scrutiny or Parliamentary oversight.

Stated simply, we do not have a picture of where investments are going, whether there are strings attached and whether they are respected.

A white paper¹⁶³ by the newly formed Canadian COVID-19 Accountability Group composed of academics, NGOs and others recommended the proactive, legally mandated release of certain records within 15 days of their completion, without redactions. Such records include those documenting public funds provided for the support of businesses and corporations: “Contracts, grants, and loans provided to companies and organizations, including records related to the conditions and values of those agreements, as well as whether they were fulfilled.”

6:1

Ratio of EDC’s preferential support for fossil fuel companies over renewable and clean tech companies between 2016 and 2020¹⁶⁴.

375%

Increase in the limit to liability given by Bill C-13 to the *Canada Account*, which allows discretionary transactions deemed in the national interest such as the TMX pipeline.

\$3.7 billion

Of the tax payer-funded 2008-2009 auto industry bailout that has been left unrecovered as best as external experts can estimate¹⁶⁵.



Ultimately, all federal vehicles used for response and recovery require extraordinary oversight due to the extraordinary circumstances. The government has indicated willingness to take this sort of approach with actual policies: The May 2020 Large Employer Emergency Financing Facility (LEEFF) included climate disclosure conditions, excluded corporations who have been convicted of tax evasion from eligibility, and placed limitations on dividends and executive bonuses¹⁶⁶. This is a great first step, but the gold standard approach would include legislative reform to EDC's mandate and that of all federal vehicles used to provide financial stimulus. Their mandates must include rigorous conditionality obligations around environmental performance, social justice (including environmental racism) and climate commitments and transparency.

The only way to ensure the key sectoral policies described in the tool box in the next section will deliver on their potential is through the development and implementation of robust accountability mechanisms.

Read More: [Green Strings: Principles and conditions for a green recovery from COVID-19 in Canada](#) (International Institute for Sustainable Development)



Key Policies Tool Box

This section presents here the most promising policies based on strong submissions to the Standing Senate Committee on National Finance, recent scholarly and civil society briefings and webinars, and examples set by other countries. A clean and just recovery should draw important points from each of the proposals below and specific policies must be developed through properly engaging rightsholders, stakeholders and the public. These are promising ideas we could start building from in different sectors.

Transportation Sector



Public and Active Transportation

Infrastructure funding should be focused on improving public transit and creating networks for cyclists and pedestrians rather than highway improvements or airport renovations.

About four out of five commuters use a private vehicle to get to work. Improving and electrifying public transportation can help reduce GHG emissions and traffic congestion by reducing the number of private combustion engine vehicles ¹⁶⁷.

Similarly, bike lanes walkways that are direct and more interconnected will reduce emissions, decrease infrastructure costs, and reduce the risk to individuals of developing chronic health problems ¹⁶⁸.



Zero Emission Vehicles

In 2018, sales of electric vehicles represented only 2.2% of total vehicle sales ¹⁶⁹.

In order to ensure Canada's commitment of 100% ZEV sales will be met by 2040, it should follow the leadership of B.C. and California which have committed to banning new sales of combustion engines. This commitment can be fast tracked to 2035 by providing financial incentives or tax rebates for new and used ZEV purchases.

Additionally, The Zero Emission Vehicle Infrastructure Program ¹⁷⁰ from Budget 2019 should be expanded, and the eligibility criteria broadened.



Built Environment



Energy Efficiency Retrofits

Incentive programs and tax rebates for energy efficient retrofits both reduce energy usage and stimulate the construction industry.

These programs should focus on increasing thermal efficiency through improved insulation, improved energy efficiency of appliances, and clean heating through heat pumps and heat networks.



Energy Audits

Buildings represent 12-20% of total national emissions, and this number could increase as we spend more time indoors due to the pandemic.

Helping property owners understand how, when, and why they use energy can inform improvements in energy efficiency and reductions in energy usage.



Building Codes and Training

In order to reach net-zero emissions by 2050, more stringent energy efficiency and energy use codes will be required, and training must be provided for builders and code enforcement.

Want to learn more? Read our June 2019 White Paper: [Canada's Building Code in the Context of Climate Change, Adaptation, and Sustainability](#)

Nature-Based Solutions



Indigenous Guardianship Programs

For nature-based climate solutions to be true solutions and further reconciliation, they need to respect Indigenous rights and values rooted in mutual relationships with the natural world ¹⁷¹.

Indigenous guardians manage and patrol forests and rivers, educate stakeholders, collect data and help revive ancestral knowledge. Such a program has delivered a social return on investment of \$2.5 for each \$1 invested in a few years in the Lutsel K'e and Dehcho region of the Northwest Territories ¹⁷².



Climate-Smart and Regenerative Agriculture

These practices employ no-till techniques, cover crops, and crop rotation to preserve soil health, reduce erosion, and increase crop yields.

When farm and pasture land is managed properly, it can sequester carbon in our soils and make our food supplies more resilient to the impacts of climate change and other crises.

Farm equipment that uses alternative fuels presents another opportunity for reducing emissions and building resilience.



Restoration and Conservation of Carbon Sinks

Investing in our public and national parks and other green spaces by planting trees, protecting biodiversity, and conserving ecological systems improves wellbeing and reduces our overall greenhouse gas emissions.

Canada's boreal forests, a globally significant resource, is an important carbon sink that is currently under pressure.

Actionable projects include urban tree planting, educational programs, basic research, and creating Indigenous Protected Areas ¹⁷³.

Energy and Electricity



Smart Grids and Interconnectivity

Grids need to be modernized to better manage and provide storage for electricity.

Transmission networks need to be expanded to accommodate increased demand, decentralized production, and new forms of energy.



Renewable Energy

Investment should be directed to building new utility-scale wind and solar installations by, for example, renewing the 2007-2011 EcoENERGY for Renewable Power program¹⁷⁴.

This will contribute to our transformation towards low-carbon energy sources, improve air quality, and lower the risks associated with stranded assets.



Energy Conservation and Efficiency

About one third of electricity in Canada is lost due to inefficiencies in end use or conversion¹⁷⁵.

Policies should be targeted at reducing demand, do more with less. For example, energy efficient measures like switching to LED lighting and insulating homes are among the most cost-effective forms of GHG abatement.



Hydrogen from Renewable Sources

Green hydrogen has potential as fuel for the transportation of goods over long distance, industries requiring high temperatures such as the steel industry, and possibly even for residential, commercial, or industrial space heating¹⁷⁶.

Additionally, hydrogen can be used to store energy produced intermittently by renewable sources¹⁷⁷.

Industry



Low-Carbon Procurement

Cement and steel represent about 14% of global emissions¹⁷⁸ and two of Canada's largest emission-intensive and trade-exposed industries.

Considering the government plans to invest \$180 billion over 12 years into infrastructure in Canada, the government has an opportunity to lead by example by prioritizing low-carbon building materials¹⁷⁹.



Circular Economy

A transition to a more circular economy would redefine our production and consumption patterns to focus on designing out waste and pollution, keeping products in use, and regenerating our natural systems.

Key policies include minimum recyclable material content regulations for packaging, legislating the right to repair, and incentivizing dematerialization.



Waste Management

Emissions from our landfills account for 20% of total national methane (a potent greenhouse gas) emissions.

The average Canadian household throws away over 140 kg, or \$1100 worth, of avoidable food waste per year¹⁸⁰.

Programs for reusing, better separating, and recycling our waste can divert landfill waste and reduce our emissions.

Social Wellbeing



Guaranteed Livable Income

A guaranteed livable income, GLI, would provide a universally accessible, unconditional income that is sufficient to meet a person's basic needs, versus a universal basic income, UBI, paid to all in Canada, regardless of income.

While these types of programs, initially involve additional costs and would not eliminate the need for other social services and related programs, they will ultimately result in at least a partial recouping from reduced costs of health care and other social services associated with addressing poverty.



Public Spending on Services

Another key policy to tackle inequality is providing more equitable access to basic public services. Lower income groups face greater health risks from the virus, are more likely to hold precarious employment, and less able to take advantage of working or learning from home.

Scaling up public spending on child care, education, health, and necessities such as water, sanitation and internet will build resilience for future crises because vulnerable populations will be better-equipped to face health and economic challenges.



Education

Investing in teacher training, in-class and online learning, and educational support networks across all levels of education increases productivity and better prepares the next generation to meet future challenges.

Curricula should be updated to include teaching of the realities of climate change, over-consumption, and the need for transformational change.



Professional Training

To support workers during the transformation to a low-carbon economy, the recommendations made by the Task Force on Just Transition for Canadian Coal Power Workers and Communities¹⁸¹, where relevant, should be implemented and expanded to include oil and gas workers and communities.



Deep Multi-Stakeholder Dialogue and Exchange

A transformation of the necessary magnitude requires constructive dialogue spaces to move beyond sterile conflicts, bridge divides, build consensus and enable concerted efforts to imagine, develop and implement creative solutions together.

In Quebec, for example, a group of economic, union, social and environmental leaders, including Chambers of Commerce, came together under a single proposal for a prosperous, inclusive and green recovery¹⁸².

Paying for the Recovery

Wealth and Corporate Tax



Despite having 0.5% percent of the world population, Canada is home to the 8th greatest number of millionaires¹⁸³.

A September 2020 poll from Abacus Data showed that 85% think that it is at least important to include new or increased taxes on the richest Canadians as part of the recovery¹⁸⁴.

Finally, corporate tax rates should appropriately capture a share of the gains reaped by the those who have disproportionately benefited from the crisis.

Tax Loopholes and Havens



In 2018, Canadian corporations held more than \$353 billion in tax havens¹⁸⁵.

In 2019, the Canada Revenue Agency (CRA) assessed the tax gap and found that \$3.3 to \$5.3 billion in corporate tax income was being lost in 2014 alone¹⁸⁶. With roughly 10 to 30% lost in transfers to offshore accounts – primarily in the Caribbean and Europe.

Disincentivizing firms from transferring their profits for tax reasons will be key to ensuring all Canadians benefit from the economic activity within their borders.

Polling from Abacus Data shows that 81% of Canadians believe companies who receive government assistance should be required not to use foreign tax havens, and not use the money for excessive salaries, share buybacks, or increasing dividends¹⁸⁷.

End Financial Support to the Fossil Fuel Industry



The Government of Canada committed, 11 years ago, to phasing out inefficient federal fossil fuel subsidies by 2025. To date, however, they have not even defined the term and their work to identify such subsidies has been deemed incomplete and not rigorous by the Auditor General¹⁸⁸.

Total subsidies, while their accounting varies in scope, are estimated to be in the hundreds of millions to billions of dollars per year^{189, 190, 191}.

“... [O]il dependent regions in Canada are suffering in this downturn and need support. However, we urge you to consider other more effective ways of directly assisting workers in the oil sector ... These investments will generate more employment hours per dollar invested, and spur the development of durable industries that position Albertans to compete and thrive in the economy of the future.”

- A group of more than 100 economists and energy experts from across Canada^{192, 193}.

Conditionality and Transparency

Crown Corporations

Crown corporations, such as EDC whose mandate was vastly expanded by emergency legislation, must be held to higher standards.

If public funds are at risk, the amounts, conditions, and terms of each type of support must be available for public scrutiny.

Government Decision Making

The public should be able to clearly see and understand the decision-making process and policies must be assessed for effectiveness.

Decision-making must follow the Open Government model and this National Action Plan must be renewed ¹⁹⁴.

Conditionality for Support

If financial assistance is provided to large corporations there must be strict social and environmental conditions attached to it.

Reporting and follow-up requirements must follow these conditions so that the public can clearly see how their investment was used.

Research and Data

Clean Research and Development

Promote and support R&D for sectors at the intersection between the sciences and technology and engineering in emerging areas.

Key sectors include public health and pandemics, efficient and integrated use of construction materials (timber, cement, aluminium, steel), electricity production, storage and transmission, and communication and multimedia.

Data Collection

Data collection must be active, intense, timely and rigorous, with particular attention to race and gender-based data in monitoring how clean and just recovery efforts are delivering for different groups.

This will require collaboration between a variety of departments and organizations including Health Canada, Statistics Canada, Indigenous and Northern Affairs Canada, and other levels of government.



Budgeting for a Clean and Just Recovery

Canada has spent nearly \$1 trillion on emergency measures to date. While the majority represents credit that has been made available to business and organizations, around \$220 billion has been direct funding for health and safety and support for individuals and businesses. The clean and just recovery that Canadians are demanding is an *investment* in our collective future well-being that has the potential to bring back revenues and increase human and natural capitals contrary to the traditional stimulus that is mostly an outflow of public funds.

Below, we present the work of four organizations that have taken initiative in developing cost estimates for their specific recovery policy recommendationsⁱⁱ:

- The Green Budget Coalition (GBC) published [Recommendations for Recovery and Budget Actions in 2020-2021](#) in September 2020
- The Task Force for a Resilient Recovery (TFRR) published [Bridge to the Future: Final Report from the Task Force for a Resilient Recovery](#) in September 2020,
- Corporate Knights (CK) published [Building Back Better with a Bold Green Recovery](#) in June 2020, and
- The Canadian Centre for Policy Alternatives (CCPA) published their [Alternative Federal Budget Recovery Plan](#) in July 2020.

Proposals by Sector	GBC CAD\$	TFRR CAD\$	CK CAD\$	CCPA CAD\$
Building and infrastructure spending including energy-efficient and resilience retrofits and infrastructure spending.	\$10.0 B	\$27.25 B	\$20.7 B	\$1.0 B
Production and adoption of zero-emission vehicles , decarbonizing the fuel supply, and active mobility programs	\$4.8 B	\$7.0 B	\$13.9 B	\$1.0 B
Growing Canada's clean energy and technology sectors, industrial emissions reduction, and job creation to facilitate the just <i>transformation</i> .	-	\$16.5 B	\$52.0 B	\$60.1 B
Nature-based solutions , restoration, and conservation	\$7.4 B	\$4.65 B	\$22.0 B	\$24.6 B
A more equal and resilient society including provisions for childcare, affordable housing, and poverty	-	-	-	\$161.5 B
Total	\$22.2 B	\$55.4 B	\$108.6 B	\$248.2 B

Note: Though proposed policies and programs may run for up to ten years, the totals above represent total costs of the recovery and not annual costs.

ⁱⁱ Budget allocations were categorized by the author in order to facilitate comparison. In the case where a time horizon was not provided, the author used their discretion in assigning a time period.

It is important to note that the stimulus doesn't stop with government spending – Corporate Knights estimates, for example, that \$109 billion of government investment will leverage nearly \$700 billion in private investment and ultimately contribute over \$1.5 trillion to GDP¹⁹⁵. Put more simply, \$20 of public money today, could become a \$307.85 contribution to GDP by 2030.



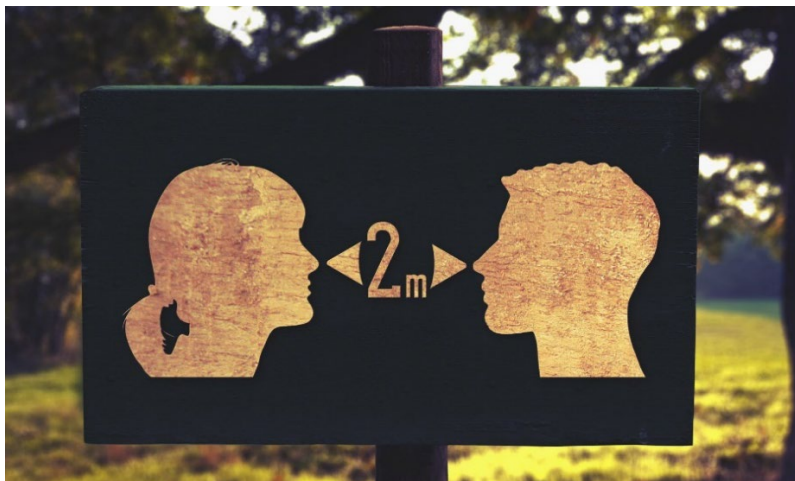
Figure 9:
The Green New Bill.
According to calculations by Corporate Knights, a \$20 government investment will grow into a \$307.85 contribution to GDP due to investments leveraged from the private sector.

Image is reproduced with permission from the Suzuki Foundation.

The Green Budget Coalition, Task Force for a Resilient Recovery, and Corporate Knights recovery plans, while they include some consideration for social equity and wellbeing, focus mainly on technological solutions and policies to resolve environmental issues and stimulate employment. In contrast, the Canadian Centre for Policy Alternatives takes a social justice approach to the COVID-19 recovery which would seem more aligned with the Sustainable Prosperity Scenario discussed earlier wherein measures of wellbeing are optimized relative to the base case and carbon-reduction scenario.

When considering the cost of a recovery stimulus, it is important to understand and include the multiple costs of inaction or recovering by trying to boost our way to the old normal. According to the World Health Organization, fighting COVID-19 could cost 500 times as much as pandemic prevention measures; the COVID-19 pandemic will likely end up costing between \$8.1 and \$15.8 trillion globally¹⁹⁶.

Experts have also attempted to quantify the cost of climate inaction: The International Energy Agency (IEA), for example, estimates that the cost of addressing climate change increases by \$500 billion for each year the world delays implementing major emissions reductions framework¹⁹⁷.



Paying for the Recovery

In order to pay for the emergency response and recovery while avoiding austerity measures, we need to increase government revenues. Examples of these methods include an increase to the federal sales tax or income tax; one-time or ongoing taxes on wealth (e.g. estates whose worth exceeds \$20 million) or wealth transfers (e.g. to tax havens); or legislative reform to end tax avoidance and tax evasion.

The affluent citizens of the world are responsible for most environmental impacts and are central to any future prospect of retreating to safer environmental conditions according to several studies^{198, 199}.

New taxation must be applied *progressively* rather than *regressively*. An umbrella increase in sales tax, for example, would place a disproportionate cost on lower-socio economic groups because the tax would represent a greater fraction of their overall income, therefore leading to undesirable regressive outcomes for the most financially precarious among us.

The table below presents a suite of possible tax schemes using data from both the Canadian Centre for Policy Alternatives (unless otherwise cited) and the Canada Revenue Agency.

Proposed Policies	2020-21	2021-22	2022-23
Eliminate tax breaks and subsidies for business expenses, fossil fuel subsidies.	\$2.6 B	\$2.7 B	\$2.8 B
New taxes on financial activities, frequent flyers, extreme wealth and inheritance, digital media corporations, and a new top marginal tax rate.	\$18.2 B	\$19.0 B	\$19.8 B
Tax reform to limit corporate deductibility for executives, excessive use of interest deductibility, "passive investments" in private corporations, TFSA contribution cap, dividend tax credit, principal residence exemption, personal basic amount.	\$9.5 B	\$12.5 B	\$15.5 B
Increase taxes for corporate income from 15% to 21% and equalizing capital gains.	\$20.6 B	\$23.2 B	\$25.7 B
Prosecuting tax evaders including collecting unpaid taxes and taxing the underground economy ²⁰⁰ .	\$12.8 B	\$12.6 B	\$12.4 B
Total	\$63.7 B	\$70.0 B	\$76.2 B

A combination of these approaches could yield \$210 B in three years – paying for all direct support provided in the government's emergency response to-date. Of course, the rate of new and increased taxes heavily influences how much can be raised. For example, the table above includes a 1% wealth tax on households with a net wealth above \$20 million that would generate \$5.6 billion in 2020-21²⁰¹. Meanwhile, a more ambitious 10% tax on the same 13,800 households would yield \$56.1 billion in revenue in its first year and could repay the entire COVID-19 direct support to date in less than five years.

Conclusions

COVID-19's unprecedented combination of infectiousness and lethality has challenged our medical, social, economic, and political institutions. Yet, it has only served to reveal vulnerabilities of an inefficient, ineffective, and unequal system. A system wherein wealth, income, and racial inequality have left much of the population vulnerable and environmental degradation has increased both the risk of emergence of new communicable diseases and its mortality and morbidity rates.

The Canadian government is about to spend, in addition to the nearly \$200 billion in direct emergency support, tens of billions of dollars on an economic stimulus package to reinvigorate our economic after months of isolation. Whether that taxpayer money is spent on traditional forms of stimulus or on a clean and just recovery will shape our nation for decades to come. It will either entrench us in our current model of infinite growth with finite resources or it will help us meet our climate change obligations, improve the wellbeing of Canadians, create a more equitable society, and help prevent future pandemics. It is imperative that both the costs and benefits of such a recovery be distributed equitably and in a manner that leaves no Canadian behind.

A clean, just, and transparent recovery that employs policies mentioned in our [Key Policies Tool Box](#) would provide a better return on investment based on old - but more importantly new and improved - indicators of progress and growth. Investments in renewables and clean technology have a far better track record of market returns than fossil fuels and reducing our dependence on fossil fuels will improve environmental and public health as well as reduce our carbon footprint.

As it stands, there is consensus between Canadian citizens, community leaders, scientists, and economists that policies supporting social and environmental health are a critical starting point for the rebuilding process. The situation is evolving and the role of parliamentarians and policy-makers will only become increasingly important as we uncover more ways in which the pandemic has impacted our lives.

Thinking more broadly about the recovery beyond stimulus needs, it will be important to build on the existing commitments of the government which must be legislated rapidly. For example, the government's 2019 commitments (reiterated in the Speech from the Throne) to reform the Canadian Environmental Protection Act (CEPA), ban single-use plastics, to establish the Clean Power Fund and the Canada Water Agency, and formally enshrine the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) into law. In order to truly build *forward* better real action on systemic, including environmental, racism must go on at full speed in parallel to the key policies proposed here. Further, mandated legislative reviews for EDC, the Lobbying Act, the Access to Information Act and other laws fundamental to effective open democratic oversight should be brought to fruition and ensure this crisis may be a true opportunity for positive collective transformation.

In accordance with our duty to uphold and respect democracy, these important themes must be studied in Parliament when it resumes its studies on the COVID-19 emergency response and recovery.

References

- ¹ Huang, C. et al. (2020) *The Lancet*. [Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China.](#)
- ² Jain, U. (2020) *Cureus*. [Effect of COVID-19 on the Organs.](#)
- ³ Sanyaolu, A. et al. (2020) *Nature Public Health Emergency Collection*. [Comorbidity and its Impact on Patients with COVID-19.](#)
- ⁴ Johns Hopkins University (2020) [COVID-19 Dashboard by the Center for Systems Science and Engineering \(CSSE\) at Johns Hopkins University \(JHU\).](#)
- ⁵ Mallapaty, S. (2020) *Nature*. [What the cruise-ship outbreaks reveal about COVID-19.](#)
- ⁶ World Health Organization (2020) [WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020.](#)
- ⁷ CBC News (2020) [Tracking the coronavirus.](#)
- ⁸ National Institute on Aging (2020) *Ryerson University*. [NIA Long Term Care COVID-19 Tracker.](#)
- ⁹ Government of Canada (2020) [Coronavirus disease \(COVID-19\): Outbreak update.](#)
- ¹⁰ Statistics Canada (2020) *The Daily*. [Gross domestic product by industry, March 2020.](#)
- ¹¹ Statistics Canada (2020) *The Daily*. [Labour Force Survey, May 2020.](#)
- ¹² Guterres, A. (2020) *United Nations*. ["Put women and girls at the centre of efforts to recover from COVID-19".](#)
- ¹³ Lien, A., et al. (2020) *Public Health Agency of Canada*. [COVID-19 and the need for sex-disaggregated mortality data.](#)
- ¹⁴ Pastor-Barriuso, R. et al. (2020) *medRxiv Preprint*. [SARS-CoV-2 infection fatality risk in a nationwide seroepidemiological study.](#)
- ¹⁵ Government of Canada (2020) [COVID-19 Situational Awareness Dashboard](#). Accessed: October 20, 2020.
- ¹⁶ Patel, R. (2020) *CBC News*. [Minister says COVID-19 is empowering domestic violence abusers as rates rise in parts of Canada.](#)
- ¹⁷ Statistics Canada (2020) *The Daily*. [Labour Force Survey, August 2020.](#)
- ¹⁸ Moyser, M. (2017) *Statistics Canada*. [Women and Paid Work.](#)
- ¹⁹ Statistics Canada (2020) *The Daily*. [Labour Force Survey, March 2020.](#)
- ²⁰ Parliamentary Budget Officer (2020) [Estimating the top tail of the family wealth distribution in Canada.](#)
- ²¹ Statistics Canada (2019) *The Daily*. [Family income mobility of Canadian taxfilers, 1982 to 2016.](#)
- ²² Malakieh, J. (2019) *Statistics Canada*. [Adult and youth correctional statistics in Canada, 2017/2018.](#)
- ²³ Pinault, L. et al. (2016) *Statistics Canada Health Reports*. [Socioeconomic differences in nitrogen dioxide ambient air pollution exposure among children in the three largest Canadian cities.](#)
- ²⁴ Public Health Agency of Canada (2020) [Coronavirus Disease \(COVID-19\) Vulnerable Populations and COVID-19.](#)
- ²⁵ Indigenous Services Canada (2020) [Coronavirus \(COVID-19\) and Indigenous communities.](#)
- ²⁶ Frew, N. (2020) *CBC News*. [Another Keeyask blockade formed despite injunction on the first.](#)
- ²⁷ Allen, M. and Jaffray, B. (2020) *Statistics Canada*. [The COVID-19 pandemic and its impacts on Canadian victim services.](#)
- ²⁸ Statistics Canada (2019) [Labour force characteristics by region and detailed Aboriginal group.](#)
- ²⁹ Department of Justice (2018) [Spotlight on Gladue: Challenges, Experiences, and Possibilities in Canada's Criminal Justice System.](#)
- ³⁰ Kielland, N. and Simeone, T. (2014) *Library of Parliament Research Publication*. [Current Issues in Mental Health in Canada: The Mental Health of First Nations and Inuit Communities.](#)
- ³¹ The National Aboriginal Economic Development Board (2015) [The Aboriginal Economic Progress Report.](#)

- ³² Statistics Canada (2020) [The contribution of immigrants and population groups designated as visible minorities to nurse aide, orderly and patient service associate occupations.](#)
- ³³ Statistics Canada (2020) [The contribution of immigrants and population groups designated as visible minorities to nurse aide, orderly and patient service associate occupations.](#)
- ³⁴ Statistics Canada (2019) [Labour force characteristics by region and detailed Aboriginal group.](#)
- ³⁵ Statistics Canada (2020) [Indigenous people in urban areas: Vulnerabilities to the socioeconomic impacts of COVID-19.](#)
- ³⁶ Statistics Canada (2018) *The Daily*. [National Indigenous Peoples Day... by the numbers.](#)
- ³⁷ Statistics Canada (2017) *The Daily*. [Immigration and ethnocultural diversity: Key results from the 2016 Census.](#)
- ³⁸ Tuncak, B. (2019) *United Nations Human Rights Office of the High Commissioner*. [End-of-visit statement by the United Nations Special Rapporteur on human rights and hazardous substances and wastes, Baskut Tuncak on his visit to Canada, 24 May to 6 June 2019.](#)
- ³⁹ Waldron, I. (2018) [There's Something In The Water: Environmental Racism in Indigenous & Black Communities.](#)
- ⁴⁰ Pinault, L. et al. (2016) *Statistics Canada Health Reports*. [Socioeconomic differences in nitrogen dioxide ambient air pollution exposure among children in the three largest Canadian cities.](#)
- ⁴¹ Premji, S., et al. (2007) *Canadian Journal of Public Health*. [Socio-economic Correlates of Municipal-level Pollution Emissions on Montreal Island.](#)
- ⁴² Standing Committee on Environment and Sustainable Development (2017) *House of Commons*. [Healthy Environment, Healthy Canadians, Healthy Economy: Strengthening the Canadian Environmental Protection Act, 1999.](#)
- ⁴³ World Health Organization (2020) [Fighting COVID-19 could cost 500 times as much as pandemic prevention measures.](#)
- ⁴⁴ Intergovernmental Platform on Biodiversity and Ecosystem Services (2020) *Workshop Report*. [IPBES Workshop on Biodiversity and Pandemics.](#)
- ⁴⁵ Public Safety Canada (2012) [Emergency Management Planning Guide 2010–2011](#)
- ⁴⁶ Blair, B., The Hon. (2020) [Tweet.](#)
- ⁴⁷ Canada (2020) [Coronavirus disease \(COVID-19\): Travel restrictions, exemptions and advice](#)
- ⁴⁸ Inter-Parliamentary Union (2020) [Country compilation of parliamentary responses to the pandemic.](#)
- ⁴⁹ Standing Committee on Procedure and House Affairs (2020) *House of Commons*. [Carrying Out Members' Parliamentary Duties: The Challenges of Voting During the Covid-19 Pandemic.](#)
- ⁵⁰ Rodriguez, P., The Hon. (2020) [House of Commons Debates, March 24, 2020.](#)
- ⁵¹ Office of the Parliamentary Budget Officer (2020) [PBO's COVID-19 Analysis.](#)
- ⁵² Jones et al., (2008) *Nature*. [Global trends in emerging infectious diseases.](#)
- ⁵³ Intergovernmental Platform on Biodiversity and Ecosystem Services (2020) *Workshop Report*. [IPBES Workshop on Biodiversity and Pandemics.](#)
- ⁵⁴ Chen, L. et al. (2014) *The Journal of Biological Databases and Curation*. [DBatVir: the database of bat-associated viruses.](#)
- ⁵⁵ Jones, K. et al. (2008) *Nature*. [Global trends in emerging infectious diseases.](#)
- ⁵⁶ Allen, T. et al. (2017) *Nature Communications*. [Global hotspots and correlates of emerging zoonotic diseases.](#)
- ⁵⁷ Curseu, D. et al. (2009) *Global Warming*. [Potential Impact of Climate Change on Pandemic Influenza Risk.](#)
- ⁵⁸ Centres for Disease Control and Prevention (2018) [Past Pandemics.](#)
- ⁵⁹ LePan, N. (2020) *Visual Capitalist*. [Visualizing the History of Pandemics.](#)
- ⁶⁰ United Nations Environment Programme and International Livestock Research Institute (2020) [Preventing the Next Pandemic: Zoonotic diseases and how to break the chain of transmission.](#)
- ⁶¹ Climate Transparency (2019) [Brown to green: the G20 transition towards a net-zero emissions economy.](#)
- ⁶² IPCC (2018) [Global warming of 1.5°C.](#)
- ⁶³ Enerdata (2020) [Global Energy Statistical Yearbook 2020.](#)

- ⁶⁴ Pembina Institute (2018) [The oilsands in a decarbonizing Canada](#).
- ⁶⁵ Environment and Climate Change Canada (2020) [National Inventory Report 1990 –2018: Greenhouse Gas Sources and Sinks in Canada Executive Summary](#).
- ^a
- ⁶⁷ Environment and Climate Change Canada (2019) [Canada's Changing Climate Report 2019](#)
- ⁶⁸ IPCC (2018) [Global warming of 1.5°C](#).
- ⁶⁹ NASA (2020) [Global Temperature](#). Accessed: October 20, 2020.
- ⁷⁰ Environment and Climate Change Canada (2019) [Canada's Changing Climate Report 2019](#) {4.2}
- ⁷¹ Environment and Climate Change Canada (2019) [Canada's Changing Climate Report 2019](#) {4.2}
- ⁷² Climate Action Network Canada (2019) [Canada's Fair Share towards limiting global warming to 1.5°C](#).
- ⁷³ Croome, J. (2020) *Ecojustice Blog*. [Canada can't miss another target – we need a Canadian Climate Accountability Act](#)
- ⁷⁴ Powers, L. (2019) *CBC Fact Check*. [Trudeau's claim that Canada is 'on track' to meet 2030 climate target is misleading](#)
- ⁷⁵ Germanwatch (2020) [Climate Change Performance Index](#).
- ⁷⁶ Galvez, R. and Péloffy, K. (2020) *Climatoscope*. [Réduire les émissions ou éliminer les énergies fossiles? Comprendre le piège carbone au Canada](#).
- ⁷⁷ Canada (2020) [A stronger and more resilient Canada: Speech from the Throne to Open the Second Session of the Forty-third Parliament of Canada](#).
- ⁷⁸ Galvez, R. and Péloffy, K. (2020) *Climatoscope*. [Réduire les émissions ou éliminer les énergies fossiles? Comprendre le piège carbone au Canada](#).
- ⁷⁹ Officer of the Commissioner of Lobbying of Canada (2020) [12-Month Lobbying Summary - In-house Organization: Canadian Association of Petroleum Producers/Association Canadienne des Producteurs Pétroliers / Tim McMillan, President and CEO](#).
- ⁸⁰ Rabson, M. (2020) *The Canadian Press*. [Freeze carbon tax, delay new climate regulations during coronavirus crisis, oil lobby asks](#).
- ⁸¹ De Souza, M. (2020) *National Observer*. [Trudeau offers new money to oil patch, but rejects calls to suspend climate action over COVID-19](#).
- ⁸² Environment and Climate Change Canada (2020) [Clean Fuel Standard](#).
- ⁸³ Riley, S. (2020) *The Narwhal*. [Alberta delays \\$65 million in oil and gas company payments for orphan well cleanup](#).
- ⁸⁴ Mattauch, L., et al. (2020) *Economic Modelling*. [Avoiding carbon lock-in: Policy options for advancing structural change](#).
- ⁸⁵ Myers Jaffe, A. (2017) Canadian Global Affairs Institute. [How does Canada Respond to Stranded Asset Risk?](#)
- ⁸⁶ BP (2020) [Energy Outlook 2020 edition](#).
- ⁸⁷ Deloitte (2020) [Implications of COVID-19 for the US shale industry](#).
- ⁸⁸ Bos, K. and Gupta, J. (2019) *Energy Research and Social Science*. [Stranded assets and stranded resources: Implications for climate change mitigation and global sustainable development](#).
- ⁸⁹ Mercure, J-F., et al. (2018) *Nature Climate Change*. [Macroeconomic impact of stranded fossil fuel assets](#).
- ⁹⁰ Carbon Tracker (2015) [Unburnable Carbon – Are the world's financial markets carrying a carbon bubble?](#)
- ⁹¹ Lauerman, V. (2020) *Petroleum Economist*. [Canada's oil sands under siege](#).
- ⁹² Ambrose, J. (2020) *The Guardian*. [Seven top oil firms downgrade assets by \\$87bn in nine months](#).
- ⁹³ Olszynski, M. (2020) [Alberta's Underfunded Environmental Liabilities Problem: Inactive Wells and Oil Sands Tailings](#).
- ⁹⁴ McIntosh, E. and Bruser, D. (2018) *The Star*. [What would it cost to clean up Alberta's oilpatch? \\$260 billion, a top official warns](#).
- ⁹⁵ Auditor General of Alberta (2015) [Systems to Ensure Sufficient Financial Security for Land Disturbances from Mining](#).
- ⁹⁶ Amnesty International (n.d.) [The Lubicon Cree: Ongoing human rights violations](#).

- ⁹⁷ Johson, L. (2020) *Edmonton Journal*. [Alberta revamping rules for oil and gas wells to prevent future backlog of orphan, inactive sites.](#)
- ⁹⁸ Lothian, N. (2017) *Pembina Institute*. [Fifty years of oilsands equals only 0.1% of land reclaimed.](#)
- ⁹⁹ Olszynski, M. (2020) [Alberta's Underfunded Environmental Liabilities Problem: Inactive Wells and Oil Sands Tailings.](#)
- ¹⁰⁰ Google Finance (2020) [S&P/TSX Renewable Energy and Clean Technology Index compared with iShares S&P/TSX Capped Energy Index ETF.](#)
- ¹⁰¹ McCarthy, S. (2020) *Corporate Knights*. [Canadian boards legally obliged to address climate risk, new study reveals.](#)
- ¹⁰² Williams, C. (2020) *Canada Climate Law Initiative (CCLI)*. [‘Troubling Incrementalism’: Is the Canadian Pension Plan Fund Doing Enough to Advance the Transition to a Low-carbon Economy?](#)
- ¹⁰³ Munich RE (2019) [Corporate Responsibility Report 2019.](#)
- ¹⁰⁴ Zurich Insurance Company Ltd. (2019) [Zurich raises the stakes in the fight against climate change.](#)
- ¹⁰⁵ AXA Group (2018) [AXA Group Policy on Investments in and Underwriting of Tar Sands /Oil Sands.](#)
- ¹⁰⁶ Insure Our Future (2019) [Insurers withdrawing cover from coal projects double in 2019.](#)
- ¹⁰⁷ Hipple, K. and Sanzillo, T. (2018) *Institute for Energy Economics and Financial Analysis*. [ExxonMobil's Climate Risk Report: Defective and Unresponsive.](#)
- ¹⁰⁸ Fernyhough, J. (2020) *Financial Review*. [New Zealand makes climate reporting compulsory.](#)
- ¹⁰⁹ Climate-Related Market Risk Subcommittee (2020) *Market Risk Advisory Committee of the U.S. Commodity Futures Trading Commission*. [Managing climate risk in the U.S. financial system.](#)
- ¹¹⁰ Duke, J. (2020) *The Sydney Morning Herald*. [Financial system faces 'considerable' risk if climate change not tackled: RBA.](#)
- ¹¹¹ U.S. Congress Joint Economic Committee (2010) [Income Inequality and the Great Recession.](#)
- ¹¹² Hemingway, A. and Rozworski, M. (2020) *Policynote*. [Canadian billionaires' wealth skyrocketing amid the pandemic.](#)
- ¹¹³ Statistics Canada (2020) *The Daily*. [Labour Force Survey, August 2020.](#)
- ¹¹⁴ Burkhauser, R. et al. (2016) Centre for Economic Performance. [Top Incomes and Human Well-Being Around the World](#)
- ¹¹⁵ OECD (2014) *OECD Social, Employment and Migration Working Papers*. [Trends in Income Inequality and its Impact on Economic Growth.](#)
- ¹¹⁶ Riley, S. (2020) *The Narwhal*. [Alberta suspends at least 19 monitoring requirements in oilsands, citing coronavirus concerns.](#)
- ¹¹⁷ Natural Resources Canada (2016) [Oil Sands: A strategic resource for Canada, North America and the global market.](#)
- ¹¹⁸ World Economic Forum (2020) [Measuring Stakeholder Capitalism Towards Common Metrics and Consistent Reporting of Sustainable Value Creation.](#)
- ¹¹⁹ Canadian Institute for Climate Choices (2020) [11 Ways to Measure Clean Growth.](#)
- ¹²⁰ Hepburn et al. (2020) *Oxford Review of Economic Policy*. [Will COVID-19 fiscal recovery packages accelerate or retard progress on climate change?](#)
- ¹²¹ Google Finance (2020) [S&P/TSX Renewable Energy and Clean Technology Index compared with iShares S&P/TSX Capped Energy Index ETF.](#)
- ¹²² IEA (2020) [Energy Investing: Exploring Risk and Return in the Capital Markets.](#)
- ¹²³ Poloz, S. (2020) [Testimony for the Standing Senate Committee on National Finance.](#)
- ¹²⁴ Jackson and Victor (2020) [The Transition to a Sustainable Prosperity-A Stock-Flow-Consistent Ecological Macroeconomic Model for Canada](#)
- ¹²⁵ Institute for Innovation in Social Policy (n.d.) [The Index of Social Health.](#)
- ¹²⁶ Anielski, M. (1999) *Pembina Institute*. [The Genuine Progress Indicator: A Principled Approach to Economics.](#)
- ¹²⁷ Canadian Index of Wellbeing (2016) *University of Waterloo*. [How are Canadians Really Doing? The 2016 CIW National Report.](#)

- ¹²⁸ Garrett-Peltier, H. (2017) *Economic Modelling*. [Green versus brown: Comparing the employment impacts of energy efficiency, renewable energy, and fossil fuels using an input-output model](#)
- ¹²⁹ Berry et al. (2010) *International Journal of Public Health*. [Climate change and mental health: a causal pathways framework](#)
- ¹³⁰ Haines et al. (2010) *The Lancet*. [Public health benefits of strategies to reduce greenhouse-gas emissions: overview and implications for policy makers](#)
- ¹³¹ Forster et al. (2020) *Nature Climate Change*. [Current and future global climate impacts resulting from COVID-19](#)
- ¹³² Jackson and Victor (2020) *The Transition to a Sustainable Prosperity-A Stock-Flow-Consistent Ecological Macroeconomic Model for Canada*
- ¹³³ Iron + Earth (2020) [Prosperous Transition Plan](#)
- ¹³⁴ Hemingway, A. and Rozworski, M. (2020) *Policynote*. [Canadian billionaires' wealth skyrocketing amid the pandemic.](#)
- ¹³⁵ Saez, E. (2013) [Striking it Richer: The Evolution of Top Incomes in the United States](#)
- ¹³⁶ Freeland, Chrystia (2013) *Ted Talk*. [The rise of the new global super-rich.](#)
- ¹³⁷ McCarthy, S. and Morrison, T.L. (2020) *iPolitics*. [Feds must incorporate Indigenous youth in clean energy push.](#)
- ¹³⁸ Fitzgerald, E. and Lovekin, D. (2018) *Pembina Foundation*. [Renewable Energy Partnerships and Project Economics: Research supporting Indigenous-utility partnerships and power purchase agreements.](#)
- ¹³⁹ National Aboriginal Economic Development Board (2020) [Reconciliation: Growing Canada's Economy by \\$27.7 Billion.](#)
- ¹⁴⁰ Biden, J. (2020) [The Biden Plan to Secure Environmental Justice and Equitable Economic Opportunity.](#)
- ¹⁴¹ Ipsos (2020) [Two thirds of citizens around the world agree climate change is as serious a crisis as Covid-19 – Ipsos survey.](#)
- ¹⁴² Abacus Data (2020) [Canadians are hoping for a “cleaner recovery” from pandemic.](#)
- ¹⁴³ Boreal Conservation (2020) [Poll: Canadians Want Economic Recovery to Include Nature Conservation & Indigenous Stewardship.](#)
- ¹⁴⁴ North American Clean Energy (2020) [84% of Canadians Support a Green Recovery Plan, Polling Finds.](#)
- ¹⁴⁵ Daub, S., et al. (2020) *PolicyNote*. [British Columbians approve of province's COVID-19 response & want more equitable, sustainable economy post recovery—regardless of party affiliation.](#)
- ¹⁴⁶ Abacus Data (2020) [Canadians expect bold action to deal with the economic and social impact of the pandemic.](#)
- ¹⁴⁷ Just Recovery for All (2020) [Six Principles for a Just Recovery.](#)
- ¹⁴⁸ Clean50 (2020) [Post COVID19: 217 Clean50 Leaders call for a #CleanReset for Canada.](#)
- ¹⁴⁹ Energypolicytracker.org (2020) [G20 Energy Policy Tracker.](#)
- ¹⁵⁰ Partington, R. (2020) *The Guardian*. [Germany unveils €130bn coronavirus recovery package.](#)
- ¹⁵¹ Kretchmer, H. (2020) *World Economic Forum*. [Billions for sustainable investments – Germany's plan for a green recovery.](#)
- ¹⁵² Kim, S-Y. et al. (2020) *The Conversation*. [South Korea's Green New Deal shows the world what a smart economic recovery looks like.](#)
- ¹⁵³ Hyunjung, B. (2020) *The Korea Herald*. [Korea's W160tr 'New Deal' project aims to create 1.9m jobs by 2025.](#)
- ¹⁵⁴ Abnett, K. and Green, M. (2020) *Reuters*. [EU makes world's biggest 'green recovery' pledge - but will it hit the mark?](#)
- ¹⁵⁵ Canadian COVID-19 Accountability Group (2020) [Protecting whistleblowers and increasing transparency in Canada in the age of COVID-19.](#)
- ¹⁵⁶ Beeby, D. (2018) *CBC News*. [Federal government quietly writes off loan — but won't reveal sum or say who got it.](#)
- ¹⁵⁷ Export Development Canada (2020) [Reporting on Transactions: Canada Account.](#)

- ¹⁵⁸ Milke M. (2015) *Taxpayer.com*. [How much did the 2009 automotive bailout cost taxpayers?](#); These details are not available due to the government's broad interpretation of commercial confidentiality and a specific exception for EDC in the Access to information Act (s. 18.1(1)(b)).
- ¹⁵⁹ Auditor General of Canada (2014) [2014 Fall Report of the Auditor General of Canada: Chapter 5 - Support to the Automotive Sector](#).
- ¹⁶⁰ Parliamentary Budget Officer (2020) [Crown corporations' COVID-19 liquidity support](#).
- ¹⁶¹ Standing Senate Committee on National Finance (2020) [COVID-19: Relief in times of crisis](#).
- ¹⁶² Global Affairs Canada (2018) [Export Development Canada legislative review 2018: Chapter 6](#).
- ¹⁶³ Canadian COVID-19 Accountability Group (2020) *White Paper*. [Protecting whistleblowers and increasing transparency in Canada in the age of COVID-19](#).
- ¹⁶⁴ Asadollahi, A. and Rous, T. (2020) *Horizon Advisors*. [Reforming Export Development Canada: Climate-Related Risk Management & The Low Carbon Transition](#).
- ¹⁶⁵ Beeby, D. (2018) *CBC News*. [Federal government quietly writes off loan — but won't reveal sum or say who got it](#).
- ¹⁶⁶ Trudeau, J., Prime Minister of Canada (2020) [Prime Minister announces additional support for businesses to help save Canadian jobs](#).
- ¹⁶⁷ Senate Standing Committee on Energy, the Environment and Natural Resources (2020) [Decarbonizing Transportation in Canada](#).
- ¹⁶⁸ Alberta Centre for Active Living (n.d.) [Benefits of Active Transportation](#).
- ¹⁶⁹ Statistics Canada (2019) *The Daily*. [New motor vehicle registrations, 2011 to 2018](#).
- ¹⁷⁰ Natural Resources Canada (2020) [Zero Emission Vehicle Infrastructure Program](#).
- ¹⁷¹ Indigenous Caucus (2020) *Nature-Based Climate Solution Summit*. [Indigenous Caucus Statement](#).
- ¹⁷² SVA Consulting (2016) [Analysis of the Current and Future Value of Indigenous Guardian Work in Canada's Northwest Territories](#).
- ¹⁷³ The Indigenous Circle of Experts (2018) [We Rise Together: Achieving Pathway to Canada Target 1 through the creation of Indigenous Protected and Conserved Areas in the spirit and practice of reconciliation](#).
- ¹⁷⁴ Natural Resources Canada (n.d.) [ecoENERGY for Renewable Power](#).
- ¹⁷⁵ Potvin, C. et al. (2017) *Sustainable Canada Dialogues*. [Re-energizing Canada: Pathways to a Low-Carbon Future](#).
- ¹⁷⁶ Clean Energy Canada (2020) [Media brief: Hydrogen as part of Canada's energy transition](#).
- ¹⁷⁷ Fuel Cell and Hydrogen Energy Association (2019) [Unlocking the Potential of Hydrogen Energy Storage](#).
- ¹⁷⁸ Bataille, C. (2019) *OECD*. [Low and zero emissions in the steel and cement industries: Barriers, technologies and policies](#).
- ¹⁷⁹ Infrastructure Canada (2018) [Investing in Canada Plan – Building a Better Canada](#).
- ¹⁸⁰ Love Food Hate Waste Canada (2017) [Food waste in the home](#).
- ¹⁸¹ Task Force on Just Transition for Canadian Coal Power Workers and Communities (2019) [Final Report by the Task Force on Just Transition for Canadian Coal Power Workers and Communities: section 10](#).
- ¹⁸² G15+ Quebec (2020) [Contribution aux initiatives de relance du gouvernement du Québec](#).
- ¹⁸³ Afrasia (2019) [Global Wealth Migration Review](#).
- ¹⁸⁴ Abacus Data (2020) [Canadians expect bold action to deal with the economic and social impact of the pandemic](#).
- ¹⁸⁵ Statistics Canada (2019) *The Daily*. [Foreign direct investment, 2018](#).
- ¹⁸⁶ Canada Revenue Agency (2019) [Tax Gap and Compliance Results for the Federal Corporate Income Tax System](#).
- ¹⁸⁷ Abacus Data (2020) [Canadians want a recovery that is ambitious, fair, and makes the country more self-sufficient](#).
- ¹⁸⁸ Office of the Auditor General of Canada (2019) *2019 Spring Reports of the Commissioner of the Environment and Sustainable Development to the Parliament of Canada*. [Report 4—Non-Tax Subsidies for Fossil Fuels—Environment and Climate Change Canada](#).

- ¹⁸⁹ OECD (2020) [Fossil Fuel Support – CAN.](#)
- ¹⁹⁰ International Institute for Sustainable Development (2020) [Canada's Federal Fossil Fuel Subsidies in 2020.](#)
- ¹⁹¹ International Monetary Fund (2019) [Fossil Fuel Subsidies Template.](#)
- ¹⁹² Open Letter (2020) [Re: Financial risks of the Trans Mountain Expansion Project.](#)
- ¹⁹³ Gunton, T. et al. (2020) *The Globe and Mail*. [In a decarbonizing world, does it still make sense to spend taxpayer dollars on oil pipelines?](#)
- ¹⁹⁴ Canada (2018) [Canada's 2018-2020 National Action Plan on Open Government.](#)
- ¹⁹⁵ Corporate Knights (2020) [How a \\$20 bill could be worth close to \\$308.](#)
- ¹⁹⁶ Schwab, J. (2020) *World Economic Forum*. [Fighting COVID-19 could cost 500 times as much as pandemic prevention measures.](#)
- ¹⁹⁷ Wynn, G. (2020) *Reuters*. [Cost of extra year's climate inaction \\$500 billion: IEA.](#)
- ¹⁹⁸ Wiedmann, T. et al. (2020) *Nature Communications*. [Scientists' warning on affluence.](#)
- ¹⁹⁹ Teixidó-Figuerasab, J. et al. (2020) *Ecological Indicators*. [International inequality of environmental pressures: Decomposition and comparative analysis.](#)
- ²⁰⁰ Canada Revenue Agency (2019) [Tax Gap: A brief overview.](#)
- ²⁰¹ Parliamentary Budget Officer (2020) [Net wealth tax on Canadian resident economic families.](#)

About Senator Rosa Galvez

Rosa Galvez, originally from Peru, is an environmental engineer, professor, pollution expert, and independent senator from the province of Quebec since 2016. In the first session of the forty-third parliament, she was a member of the Senate Standing Committee on National Finance which provided oversight for the federal government's emergency COVID-19 response and attended all Senate sittings to adopt emergency measures since the beginning of the crisis.

She recently organized a webinar series on a clean and fair recovery for parliamentarians and government decision-makers with six experts including Joseph Stiglitz, winner of the Nobel prize in economy and will soon be releasing a white paper on the same topic. She published a white paper on [Canada's Building Code in the Context of Climate Change, Adaptation, and Sustainability](#) in June 2019. She was the Chair of the Standing Senate Committee on Energy, the Environment and Natural Resources from 2017 to 2019.

Senator Galvez has a Ph.D. in Environmental Engineering from McGill University and has been a professor at Laval University in Québec since 1994, heading the Civil and Water Engineering Department from 2010 to 2016. She specializes in water and soil decontamination, waste management, and impact and risk assessment of infrastructure projects.

Senator Galvez is a member of the Ordre des ingénieurs du Québec, a Fellow of the Canadian Society for Civil Engineering and a Fellow of Engineers Canada. Her research has led her around the world to countries such as France, Italy, the UK, Japan, China, and many South American countries. Throughout her career, she has been requested by private, governmental and community organisations to offer expert advice. She has also advised a number of international organisations including on Canada-US and Quebec-Vermont agreements regarding the protection of the Great Lakes and the St. Lawrence River. She also conducted an impactful research study on the catastrophic oil spill at Lac-Mégantic.

