

Investing for Tomorrow, Today:

How Canada's Budget 2021 can enable critical climate action and a green recovery

IISD REPORT

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Executive Summary

When the report *Green Strings: Principles and Conditions for a Green Recovery From COVID-19* (Corkal, Gass, et al., 2020) was published in summer 2020, strong evidence already existed about the narrow window to advance climate action through economic recovery. A few months later, Canada is faced with a decisive moment that could make or break both a strong recovery from COVID-19 and the country's response to the climate crisis. **With Budget 2021, the government has a key opportunity to ensure Canada can deliver what is truly needed for green recovery.**

The new federal climate plan, *A Healthy Environment and a Healthy Economy*, encouragingly commits to significant green spending in areas from energy efficiency in buildings to public transit. Many of these investments represent excellent value for money and will help kickstart economic recovery and job creation while tackling climate change. Yet despite the positive announcements so far, **there exists a significant investment gap between current climate-related fiscal commitments and what is needed for Canada to reach net-zero emissions by 2050.**

To assess federal fiscal commitments on climate change, we compared recommendations from leading environmental and economic experts (including the Green Budget Coalition, the Task Force for Resilient Recovery, and Corporate Knights' Building Back Better). We examined investments in seven categories: transportation, building retrofits, clean energy, nature and adaptation, agriculture, industry and innovation, and workforce development and just transition. **Across all categories evaluated, we found that additional investments in key priority areas are needed to get Canada on track for a green recovery.** In many cases, groups' recommendations are for higher amounts over a shorter time frame than what is listed in the climate plan.

Meanwhile, Canada's international peers are ramping up commitments for green recovery, including significant investments from many European countries. In his campaign platform, United States President Joe Biden promised USD 2 trillion for climate investments. Per capita, that is over eight times what Canada has announced so far for climate-related spending in the wake of the pandemic. **To keep up with our global peers, sufficient investments and strengthened regulations must work in tandem to rapidly decarbonize all sectors of the Canadian economy.**

The scale of the challenge we face is immense. Addressing it will require decisive and bold short-term action to ensure long-term success. Investments in a green recovery will require deficit spending and smart fiscal policy—a vital down payment to both mitigate the rapidly rising costs of climate change and to chart a course for a sustainable future. **The government's decisions in Budget 2021 will determine whether we can create an equitable and climate-safe future for workers and communities in Canada and join the global efforts to close the emissions gap.**



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1.0 Introduction

When the report *Green Strings: Principles and Conditions for a Green Recovery From COVID-19* (Corkal, Gass, et al., 2020) was published in summer 2020, strong evidence already existed about the narrow window to advance climate action through economic recovery. That report focused on the broad principles necessary to guide recovery stimulus. The findings have only been made more urgent, including the need to focus on equity in recovery.

This report is intended as a follow-up to *Green Strings* to assess the federal government’s progress on green recovery and identify key opportunities to further it in Budget 2021. First, we evaluate and compare the federal government’s climate-related spending since the onset of COVID-19 against international benchmarks. Second, we evaluate specific measures from the updated federal climate plan (*A Healthy Environment and a Healthy Economy*) to assess whether flagship announcements are sufficiently funded, compared to recommendations from leading expert coalitions (the Green Budget Coalition [GBC], the Task Force for Resilient Recovery [TFRR], and Corporate Knights’ Building Back Better). Like *Green Strings*, this report focuses on opportunities for emissions reductions, though we recognize that additional investments for adaptation and responses to the biodiversity crisis are also needed.

With CAD 100 billion promised in stimulus spending, Budget 2021 is a key moment both for the year ahead, and for whether we can create an equitable and climate-safe future for workers and communities in Canada. It is also a vital opportunity to join the global efforts to close the emissions gap and meet our international climate commitments.



2.0 Evaluating Canada's Fiscal Commitments On Climate in the Context of COVID-19

2.1 Canada's COVID-19 Fiscal Commitments to Date

From the beginning of the pandemic in early March to the end of 2020, the federal government committed CAD 14.7 billion to programs that support clean energy¹ (Energy Policy Tracker [EPT], 2020). This was followed by an additional CAD 14.9 billion for public transit in February 2021 (Infrastructure Canada, 2021). According to the EPT, the federal government's five largest energy-related commitments are in areas that will help advance the climate agenda. While the EPT covers only energy-related announcements, the climate plan also includes promising initiatives on nature and conservation, agriculture, adaptation, and more. In addition, the government made a historic and commendable announcement to raise the carbon price to CAD 170 per tonne by 2030 (Environment and Climate Change Canada [ECCC], 2020), which was well-received internationally (United Nations Framework Convention on Climate Change [UNFCCC], 2020).

Some of the areas where Canada has made major green spending announcements, such as energy efficiency in buildings and public transit, are extremely encouraging and comparable to similar green recovery announcements in leading European countries (Corkal & Beedell, 2021; ECCC, 2020; Infrastructure Canada, 2021). They also represent good value for money: for example, energy efficiency retrofits, especially when implemented through existing programs, are among the fastest green recovery programs to take effect (Hepburn et al., 2020).

However, during 2020, the government also committed at least CAD 3.6 billion on fossil energy (EPT, 2020). Of these funds, 28% was support to fossil energy with no “green strings.” Additional support to fossil fuels not quantified on the EPT is delivered through public finance, including through Export Development Canada (EDC), which each year provides an average of over CAD 13.2 billion per year in support for oil and gas (Tucker et al., 2020).

2.2 Green Recovery Commitments in the Context of International Ambition

Across many of Canada's international peers, momentum on green recovery has continued in recent months. **So far, Canada has announced over CAD 36 billion in new climate-**

¹ The EPT methodology classified measures into “fossil” versus “clean” energy, and also classifies whether funding is “conditional,” i.e. whether environmental conditions have been applied. The full methodology is available at <https://www.energypolicytracker.org/methodology/>



focused funding since October 2020² (ECCC, 2020; Infrastructure Canada, 2021). By comparison, the European Union has agreed to allocate 37% of its recovery stimulus for green measures (Taylor, 2020). US President Joe Biden has also introduced sweeping actions through his executive order on climate change (The White House, 2021). While full spending is as of yet unclear, Biden's Clean Energy Plan promises USD 2 trillion for climate investments (Biden For President, 2020b): **per capita, that is over eight times what Canada has announced so far for climate-related spending since the onset of COVID-19.**³

Pressure is also mounting to ramp up emissions reduction targets for 2030. All countries are expected to present more ambitious climate plans or Nationally Determined Contributions (NDCs) in advance of the next United Nations Climate Change Conference (COP26). Analysis indicates that Canada's emissions must decline by at least 2.7% per year to reach 30% reduction by 2030, and by 14% per year in the period 2030–2050 to reach net-zero (Sawyer, 2020). The new climate plan commits Canada to a 32%–40% reduction by 2030, but this is still below best practices internationally. For example, the UK announced a target of at least 68% by 2030, compared to 1990 levels (Department for Business, Energy & Industrial Strategy, 2020). UN Secretary-General Antonio Guterres recently called for member states to submit NDCs to cut global emissions by 45% by 2030 compared to 2010 levels (United Nations Secretary-General, 2021). According to Climate Action Network Canada, our “fair share” target should reduce emissions by 140% by 2030 compared to 2005 levels, which includes supporting 594 million tonnes of carbon dioxide equivalent (Mt CO₂eq) of emissions reductions in developing countries through **scaled-up international climate finance** (Climate Action Network Canada, 2019).

As for individual measures, there is much to celebrate in Canada's new climate plan, but also areas that must be built upon. **It is useful to broadly consider announcements from key international peers.** Some examples:⁴

Despite our membership on the Zero Emission Vehicle Transition Council (Zero Emission Vehicle Transition Council, 2020), Canada is being outpaced by international climate leaders on **clean transportation**. For **passenger vehicles**, the UK has committed GBP 2.8 billion (CAD 4.9 billion) to accelerate the shift to electric vehicles (EVs), and Germany has committed EUR 4.7 billion (CAD 7.5 billion) to expand EV charging infrastructure and double incentives for EV buyers (EPT, 2020). As for **active transportation**, which has high value for money due to health co-benefits (World Health Organization [WHO], 2018), the UK government has committed

² Includes CAD 6 billion in climate-focused infrastructure initiatives through the Canada Infrastructure Bank (CIB), CAD 15 billion in new measures from the updated climate plan, CAD 295 million for electric vehicle (EV) production, and CAD 14.9 billion for public transit announced in February 2021 (CIB, 2020; ECCC, 2020; Infrastructure Canada, 2021; Office of the Prime Minister, 2020b).

³ Calculations based on an exchange rate of 1 USD = 1.341 CAD (average for 2020) and World Bank population data (Organisation for Economic Co-operation and Development [OECD], 2020; World Bank, 2019).

⁴ A more complete comparison of Canada's energy-related spending since the onset of COVID-19 can be seen in Corkal & Beedell, 2021.



over GBP 2 billion (CAD 3.5 billion) for increasing bike lanes and other active transportation infrastructure (EPT, 2020).

On **clean energy**, Biden's platform commitment was for an investment of USD 400 billion (CAD 508 billion) over 10 years in clean energy and innovation (Biden For President, 2020a), significantly higher per capita than Canada's recent commitments. Many countries are prioritizing development of **green hydrogen**. France has committed EUR 8 billion (CAD 12.4 billion) for clean hydrogen, while Germany committed EUR 7 billion (CAD 10.8 billion) to support its national hydrogen strategy, prioritizing the development of renewable hydrogen (EPT, 2020).

Recent federal commitments to work with farmers on climate are a significant step, but addressing **agricultural emissions** requires significantly more focus and funding. France, Germany, Ireland, the Netherlands, New Zealand, and Portugal have set sector-wide targets to reduce greenhouse gas emissions from agriculture (Farmers for Climate Solutions, 2021b). The United States has also pledged significant action in this area (The White House, 2021). The EU spends 73 times more than Canada on agri-environmental programs (per-acre basis) while the United States spends 13 times more (Farmers for Climate Solutions, 2021a). Leading countries have set aside significant funding for sustainable agriculture as part of green recovery (Farmers for Climate Solutions, 2021b).

Despite these positive examples, more action is needed from all countries, including Canada, on green recovery. Current trends indicate that much of global recovery spending will have negative environmental impacts and that many countries pursuing green recovery are undermining positive investments through polluting ones (Dagnet & Jaeger, 2020; EPT, 2020; Vivid Economics and Finance for Biodiversity Initiative, 2021). Recent analysis from BloombergNEF found Canada's current policies reaching only around 50% of what is actually needed to achieve Paris goals (Mathis, 2021).

Box 1. Aligning Green Recovery With International Solidarity

Although this report focuses on recovery potential within Canada, more attention must also be paid to how Canada's actions during recovery will affect poorer countries, from enabling access to health care and social programming, to providing scaled-up international climate finance, and beyond. In particular, a lack of equitable vaccine access in poorer countries could lead to dangerous health risks for all countries, hindering our ability to recover (Harding, 2021; Kim et al., 2021). Research also shows that if large populations in these countries go unvaccinated, severe global economic impacts will occur, with nearly half of these costs borne by wealthy countries (Çakmakli et al., 2021). Too much domestic focus risks placing poorer countries under additional stress, worsening environmental, health, and economic inequality and undermining sustainable recovery as countries may end up pursuing environmentally harmful development pathways (Gurmu, 2020). In other words, **achieving a green recovery is predicated on aligning domestic action with international obligations and solidarity.**



3.0 Assessing Canada's Fiscal Resources for Climate Change Against Expert Recommendations

In this section, we identify key funding gaps in the updated climate plan that Budget 2021 has an opportunity to fill. Our analysis is based on new funding (that is, we do not consider funding announced pre-COVID, which is not recovery-focused). Specifically, we look at both uncostered measures from the new climate plan, as well as costed measures and new announcements (including those from the CIB's Growth Plan) whose current levels are insufficient when compared to the estimates of need by independent experts. For both these categories, we explain how climate action, and a green recovery, could be strengthened through additional investments. Ultimately, the aim of this analysis is to identify priority and high-profile funding gaps in the short term, starting with what Budget 2021 can achieve.

To do our analysis, we compare key climate announcements to date against recommendations from the GBC,⁵ the TFRR, and Corporate Knights. These three sets of recommendations were chosen as they represent substantial efforts by established environmental and economic experts (representing a significant scope of expertise) to provide guidance on climate-related spending in the context of COVID-19 recovery.⁶ A number of recommendations have been published from other organizations as well; we reference these where they are most relevant. **It is worth noting that in many cases, recommendations are for higher amounts over a shorter time frame than what is listed in the climate plan.**

At the top of each section, we identify opportunities for funding in two categories:

- **Budget 2021 opportunities:** These are areas that the upcoming budget has a clear opportunity to fill in the short-term. They include uncostered measures from the climate plan and key short-term recommendations from expert groups.
- **Additional investments needed:** These include measures that have already received federal funding but where announced levels are insufficient along with longer-term recommendations from expert groups that were not included in the federal climate plan.

⁵ Unlike the TFRR and Corporate Knights recommendations, the GBC provides budgetary advice to the federal government every year. As such, the GBC recommendations are budget-focused, and are generally more narrowly focused on core priorities that will accelerate policy progress on select files (for example, through planning processes or select programs). The figures in the GBC recommendations are not based on a full costing of the *total investment* needed for each policy priority or for economic recovery. As a result, the GBC figures listed in this document are sometimes lower than figures from the TFRR or Corporate Knights.

⁶ These sets of recommendations should be seen as complementary and not exhaustive; that is, in policy areas where organizations have not provided explicit recommendations, they are not necessarily suggesting there should be no funding in those areas.



3.1 Transportation

Table 1. Key funding gaps in transportation

Budget 2021 opportunities	Additional investments needed
<ul style="list-style-type: none"> • Supply-side investments • Heavy-duty transport measures • Pricing road infrastructure 	<ul style="list-style-type: none"> • Charging and alternative refuelling infrastructure • Improved consumer incentives and disincentives • Additional active transportation funding and a more comprehensive strategy with subnational governments • Additional operational funding for public transit

Table 2. Transportation: allocated funding versus select recommendations in key areas (millions CAD)

Category	New federal commitment	TFRR	GBC	Corporate Knights (CK)
Zero-emission vehicles (ZEVs) & commercial transport*	437 over three years	4,500 over five years	765 over five years	11,900 over 10 years
ZEV supply chain	345**	2,500 over five years	250 over five years (battery recycling only)	20,000 over 10 years
Public transit – emergency COVID support	1,800***	N/A±	Recommended (amount not specified)	N/A
Public transit – infrastructure/improvements	16,400 over eight years	N/A	5,760 over five years	N/A
Active transportation		N/A	N/A	2,000 over 10 years

*Low-carbon and alternative fuel programs are listed in Section 3.6 (Industry and Innovation).

**Canada has announced funding to support EV production at Ford's Oakville complex and for battery production by Lion Electric in Quebec (Office of the Prime Minister, 2020b; Lion Electric, 2021).

***“N/A” signifies that this area of investment was not covered in the given organization's recommendations.

±While not listed in the climate plan, Canada committed up to CAD 1.8 billion for public transit as part of the Safe Restart Agreement (Office of the Prime Minister, 2020a).



3.1.1 Zero-Emission Vehicles & Commercial Transport

Zero-emission vehicles (ZEVs) will be central to decarbonizing Canada's transportation sector. While we welcome the funding committed, including for the Incentives for Zero-Emission Vehicles (iZEV) program (ECCC, 2020), an upscaling of resources will be needed to truly transform Canada's vehicle fleet. For example, the TFRR calls for CAD 2 billion over five years to **accelerate the installation of EV charging infrastructure**, while the updated climate plan includes only CAD 150 million over three years for charging and alternative fuel infrastructure (ECCC, 2020; TFRR, 2020). Additional efforts are needed to ensure EVs are practical, accessible, and affordable, including by ensuring consumer incentives are available and relevant for lower-middle-income consumers (Clean Energy Canada, 2020; The Greenlining Institute, n.d.). Other policies and programs should also be explored to reduce the attractiveness of light-duty trucks and the overall size of the Canadian vehicle fleet—both in terms of the number of vehicles on the road and on the physical size of these vehicles.

Electric Vehicle Supply Chains

Other uncosted commitments for ZEVs in the climate plan are encouraging, but to signal the market to move faster in the right direction, they will need to be accompanied by support to **accelerate and expand the consumer availability of ZEVs in Canada**. Canada, which wishes to be seen as an international leader in the auto manufacturing sector, has fallen behind in car manufacturing since the rise of EVs. We risk further obsolescence if action is not quickly taken to transform assembly lines for ZEV manufacturing. While some direct investments will help, ultimately enabling conditions and strong regulations (e.g., a ZEV mandate, tax incentives) are needed to leverage private capital.

Canada has already made a positive step by contributing CAD 295 million for EV production at Ford's Oakville plant. The climate plan's uncosted commitments to attract investment in the manufacturing of zero-emissions transportation products and to **develop the EV battery supply chain** need robust funding attached (ECCC, 2020). Corporate Knights' proposal to establish a CAD 40 billion Natural Resources and EV Innovation Fund devotes a full half of this funding toward EVs (Torrie et al., 2020); likewise, the TFRR calls for CAD 2.5 billion to retain and attract ZEV value-chain manufacturers and develop a full **ZEV industrial ecosystem**.

Commercial Transportation

To further reduce emissions from long-haul trucking, the GBC recommends spending CAD 200 million over five years to **establish financial incentives for fuel-saving devices on heavy-duty trucks** (GBC, 2020).

Pricing Road Infrastructure

Complementary measures to reduce private and commercial vehicle use are also a focus of group recommendations. The GBC recommends **pricing road infrastructure** starting in Budget 2021, as is common practice throughout the OECD, which would also help tackle congestion and air quality issues (GBC, 2020).



3.1.2 Public Transit and Active Transportation

Canada recently announced CAD 14.9 billion in this category, including CAD 5.9 billion for public transit, rural mobility, and active transportation projects, as well as CAD 3 billion per year in permanent **public transit funding** beginning in 2026–2027 (Infrastructure Canada, 2021), in addition to CAD 1.5 billion for zero-emission buses (CIB, 2020) and existing funding through Infrastructure Canada’s programs. These major investments will go a long way to supporting the nearly one million urban Canadians, including 40% of low-income residents of Canadian cities, who are at risk of transport poverty (Allen & Farber, 2019). However, additional funding to support transit systems during COVID-19 is also needed. New federal money for transit is focused on capital infrastructure, not dedicated operational funding. ATU Canada and other transit experts have asked for **operational funding** to be prioritized, including CAD 400 million per month for emergency funding during the pandemic (Di Nino, 2021). Longer-term, additional support to facilitate mobility and intercity transportation in rural areas will also be needed (Federation of Canadian Municipalities [FCM], 2020).

Meanwhile, active transportation is increasingly seen as one of the best value-for-money areas of infrastructure spending (WHO, 2018). The climate plan’s announcement of a **national active transportation strategy** and announced funding so far is a good step to coordinate efforts to expand this infrastructure (ECCC, 2020). Specific investments beyond what has already been committed could help prioritize this infrastructure. Corporate Knights recommends the creation of a CAD 2 billion active mobility fund for projects that could start in the next 12 months while creating construction jobs and providing health, safety and mobility benefits (Torrie et al., 2020).

3.2 Building Retrofits

Table 3. Key funding gaps in building retrofits

Budget 2021 opportunities	Additional investments needed
<ul style="list-style-type: none"> • Low-cost loan program for home energy retrofits • Retrofit skills training program 	<ul style="list-style-type: none"> • Support for provincial/territorial retrofit programs • Additional finance for deep retrofits for public and commercial buildings



Table 4. Building retrofits: Allocated funding versus select recommendations in key areas (millions CAD)

Category	New federal commitment	TFRR	GBC	CK
Retrofit programs, including public-private financing	6,100 over seven years	26,000 over five years	10,000 over five years	20,700 over 10 years
Workforce training	None specified	1,250 over five years	500 over five years	500 over five years

3.2.1 Public-Private Financing, Retrofit Programs, and Sustainable Infrastructure

A growing consensus recognizes building retrofits as a pillar of both climate policy and COVID-19 recovery. The federal government's announcement of 700,000 grants for residential retrofits and green and inclusive community buildings, and the CIB Growth Plan's investment in commercial retrofits, are welcome steps (CIB, 2020; ECCC, 2020). Much more is needed to achieve the rapid large-scale change and deep decarbonization in the building sector that net-zero necessitates.

Existing retrofit programs, including through the National Housing Strategy co-investment fund, the Low-Carbon Economy Fund and the Green Municipal Fund, could be accelerated. Both the TFRR and GBC recommend investing CAD 10 billion over five years to expand existing retrofit programs (GBC, 2020; TFRR, 2020). Next, adequate funding is needed for the low-cost **loan program for home energy retrofits**, including ensuring that loan maximums are high enough.

Deep retrofits of public and commercial buildings must have adequate policy and financial support to see the change we need. The TFRR has called for CAD 13 billion over five years for **public-private financing facilities** alongside CAD 2 billion for large-scale retrofit demonstrations, while Corporate Knights recommends CAD 20.7 billion over 10 years for grants and low-cost financing for residential and commercial retrofits (TFRR, 2020; Torrie et al., 2020). A specific proposal from Corporate Knights is for Build Back Better forgivable loans, backed by the Canadian Mortgage and Housing Corporation, with a meaningful portion reserved for affordable housing (Torrie et al., 2020).

Equity must be a key consideration for all climate investments, and buildings and infrastructure are a particularly important example. It is critical to address and move beyond the limitations of small-grant programs that have historically overwhelmingly benefited upper-middle- and high-income households (Rivers & Shiell, 2016). The green and inclusive community buildings carve-out to have 10% of projects serving Indigenous communities is a good step. The TFRR calls



for a CAD 1 billion per year Indigenous Infrastructure Fund to drive investment in sustainable infrastructure in Indigenous communities (TFRR, 2020); the need for this type of investment has been highlighted by Indigenous and sustainable development leaders (Assembly of First Nations, 2019; Isaac & Sharpe, 2020).

3.2.2 Workforce Training

As Canada emerges from the COVID-19 pandemic, the retrofit market has enormous potential to create new jobs that put those who have lost jobs in construction and supporting sectors back to work and catalyze an economic rebound. The climate plan includes a commitment (without a specific funding allocation) to **launch a retrofit skills training program** (ECCC, 2020). The TFRR recommends that CAD 1.25 billion be spent over five years on workforce training with a focus on women and Indigenous workers (TFRR, 2020), while Corporate Knights and the GBC have both endorsed the Canada Green Building Council's call for CAD 500 million to develop and train Canada's low-carbon workforce (Canada Green Building Council, 2020; GBC, 2020; Torrie et al., 2020).

3.3 Clean Energy

Table 5. Key funding gaps in clean energy

Budget 2021 opportunities	Additional investments needed
<ul style="list-style-type: none"> Decentralized energy Investments in storage capacity Community-owned renewables 	<ul style="list-style-type: none"> Transmission, interties, and distribution Indigenous clean energy and transition off diesel

Table 6. Clean energy: Allocated funding versus select recommendations in key areas (millions CAD)

Category	New federal commitment	TFRR	GBC	CK
Clean power production & storage	964 over four years	1,000 over five years	2,450 over five years	5,000 over five years
Transmission and grids	2,525 over three years	5,000 over five years	50 over five years	1,700 over five years
Rural, remote, and Indigenous communities	300 over five years	500 over five years	750 over five years	N/A



3.3.1 Clean Power Production, Storage, and Grids

Electrification of major sectors hinges on electricity transmission and modern, efficient power grids sourced from clean energy. Funding for interties, renewable generation and storage, announced in the CIB Growth Plan and climate plan (CIB, 2020; ECCC, 2020), will help connect the supply of renewable power to demand while enabling more renewable integration. However, current investments fall short of what is needed to rapidly increase renewable power generation capacity and storage.

The climate plan's announcement to advance **smart renewable energy and grid modernization projects** is encouraging. While the committed funding, CAD 964 million over four years, is significant (ECCC, 2020), it is below what has been recommended by independent analysis. For example, the TFFR proposed a CAD 5 billion Clean Power Fund aimed at accelerating investment in transmission and distribution capacity and deploying “smart” infrastructure to better integrate renewables (TFRR, 2020).

The GBC recommends an investment of CAD 3.3 billion over five years to **support decentralized energy** through community-owned renewables (including through federal procurement), rooftop and distributed solar, planning, integration and capacity building for renewables, projects in remote and Indigenous communities, and renewable storage capacity (GBC, 2020). **Storage capacity** also requires additional investments: Corporate Knights calls for CAD 5 billion over five years for storage capacity to support renewable electricity grids (Torrie et al., 2020).

3.3.2 Rural, Remote, and Indigenous Communities

Canada must ensure its climate action is fully inclusive and responds to the need for social and environmental justice. In this light, the climate plan includes an important pledge to invest CAD 300 million over five years to transition to clean energy those rural, remote, and Indigenous communities that currently rely on diesel by 2030 (ECCC, 2020). Diesel reduction is a pressing priority for which additional funds are needed. Beyond this, Indigenous communities and businesses are leaders in clean energy projects and business development, and this leadership should be further fostered (Assembly of First Nations, 2019; Indigenous Clean Energy, 2020). The TFRR calls for CAD 500 million to support national **Indigenous clean energy** action platforms through Indigenous leadership and participation, while the GBC recommends reserving CAD 300 million over five years for Indigenous clean energy (GBC, 2020; TFRR, 2020). Government should engage with Indigenous experts and governments to ensure programs are properly designed and adequately funded.



3.4 Nature Investments and Adaptation Infrastructure

Table 7. Key funding gaps in nature investments and adaptation infrastructure

Budget 2021 opportunities	Additional investments needed
<ul style="list-style-type: none"> Funding for Protected areas and Indigenous Protected and Conserved Areas Indigenous Guardians Programs National Adaptation Strategy Natural Infrastructure including Disaster Mitigation and Adaptation Fund 	<ul style="list-style-type: none"> Additional restoration funding Continued funding for nature-based climate solutions

Table 8. Nature: Allocated funding versus select recommendations in key areas (millions CAD)

Category	New federal commitment	TFRR	GBC	CK
Mitigation (restoration)	631 over 10 years (previously announced: 3,160 over 10 years for tree planting)	1,650 over five years	2,410 over five years*	16,000 over 10 years
Mitigation (protection and Indigenous conservation)	None specified	1,000 over five years	4,800 over five years**	N/A
Adaptation (natural infrastructure)	None specified	2,000	1,016 over five years	N/A

*Plus CAD 100 million per year from 2026 to 2030 for reducing land-use change and managing ecosystems. Agriculture-specific investments (Natural Climate Solutions for Agriculture Fund) are listed in Section 3.5.

**Plus CAD 745 million per year ongoing funding after 2025.

Investments in nature-based climate solutions can help prevent and reduce emissions, but they are also key to building resilience. Many interventions, like tree planting, can do both. Canada's new climate plan embraces the multiple roles of nature investments, but funding is uneven. Two key announcements in the climate plan—the National Adaptation Strategy, and working with Indigenous communities to increase climate resilience—have not yet been costed. Support for



strategies such as tree planting should also not detract from efforts to reduce forest degradation and pursue rapid decarbonization in other sectors (Holl & Brancalion, 2020).

3.4.1 Nature and Mitigation

Restoration

So far, Canada has focused its close to CAD 4 billion of nature-based climate solutions investments on its flagship restoration program of planting two billion trees, representing a strong down payment on nature-based solutions. In addition to the tree planting program, the TFRR recommends CAD 1.25 billion over five years for **nature restoration** in addition to CAD 400 million for workforce training. The GBC recommends over CAD 2 billion in this area over and above the tree planting program, with the majority spent within five years, including through the Federal Habitat Restoration Program and other habitat restoration programs (GBC, 2020; TFRR, 2020). Corporate Knights has an ambitious proposal of CAD 16 billion over 10 years for restoration of degraded land and urban forests.

Protected Areas and Indigenous Conservation

New funding to ensure protection of 30% of land and ocean ecosystems by 2030 and support Indigenous protected areas, which are recognized as important interventions, has yet to be announced. Protecting carbon-rich landscapes and ecosystems from land-use change has important climate benefits while simultaneously addressing the twin crisis of nature and biodiversity loss. TFRR, the GBC and Corporate Knights have all called for significantly more funding for **conservation**. The TFRR and GBC call for increased funding for the creation and management of protected areas (CAD 1 billion and CAD 4.8 billion, respectively). This includes funding to support the establishment of **Indigenous Protected and Conserved Areas**, and scaled-up investments for **Indigenous Guardians programs**. For example, the GBC echoes the recommendations of the Indigenous Leadership Initiative and Assembly of First Nations for an initial CAD 2.3 billion investment over the next five years for these programs (GBC, 2020). Supporting these programs will help advance meaningful reconciliation while encouraging traditional resource management and collaborative environmental governance (Brown & Sandborn, 2020; Reed et al., 2020).

3.4.2 Nature and Adaptation

Most groups' recommendations for building climate resilience focus on **natural infrastructure** investments, including a major top-up to the **Disaster Mitigation and Adaptation Fund** (DMAF). Many GBC members also called for a stand-alone Natural Infrastructure Program and funding for the FCM Municipal Asset Management Program. Likewise, FCM has called for CAD 2 billion for DMAF and an expanded eligibility scope (FCM, 2020; GBC, 2020; TFRR, 2020). Similarly, Iron and Earth proposes CAD 22 billion over 10 years for nature-based solutions that include projects that incorporate ecosystems in industrial operations through ecosystem stewardship and green/blue infrastructure (Iron & Earth, 2020).



3.5 Agriculture

Table 9. Key funding gaps in agriculture

Budget 2021 opportunities	Additional investments needed
<ul style="list-style-type: none"> • Programs that encourage adoption of climate-friendly Best Management Practices (BMPs) • Farmer-focused awareness campaigns • Ecological goods & services programs for agricultural lands • Training 	<ul style="list-style-type: none"> • Additional natural climate solutions in agriculture funding • Scaled-up funding for BMP implementation • Monitoring and evaluation of BMP effectiveness

Table 10. Agriculture: Allocated funding versus select recommendations in key areas (millions CAD)

Category	Current federal commitment	TFRR	GBC	CK	Farmers for Climate Solutions Task Force
All	449 over 10 years	N/A	420 over five years	4,200 over 10 years	300 in budget 2021

The government will support the agriculture industry through funding for cleantech, climate-smart best practices, and natural climate solutions. In addition to this, incentives for the adoption of practices that reduce on-farm emissions should be an urgent priority, highlighted by Corporate Knights as well as the recent task force on climate solutions in agriculture coordinated by Farmers for Climate Solutions. Funding for natural climate solutions in agriculture is also requested to be increased: for comparison, GBC recommended CAD 420 million over five years for an ecological goods and services program for agricultural lands. The Farmers for Climate Solutions task force calls for CAD 300 million in Budget 2021 for sustainable agriculture programs to kickstart emissions reductions, awareness campaigns to encourage acceptance and normalization of lower emission practices, and monitoring of impact. These measures can be scaled up during the next agricultural policy framework in 2023 (Farmers for Climate Solutions, 2021a). In the longer term, it will be important to measure the impact of BMPs on farms to better understand emissions reduction potential, to inform the National Inventory Report, and to inform agricultural climate policy development. The Fall Economic Statement announced a Canadian Agri-Enviro Strategy (Department of Finance, 2020), which should have clear sector emissions reduction targets and should include widespread consultation with farmers.



3.6 Industry and Innovation

Table 11. Key funding gaps in industry and innovation

Budget 2021 opportunities	Additional investments needed
<ul style="list-style-type: none"> • Green industrial strategy • Zero-waste technologies 	<ul style="list-style-type: none"> • Industrial and circular economy innovation • Additional support for startups and small and medium-sized enterprises

Table 12. Industry and innovation: allocated funding versus select recommendations in key areas (millions CAD)

Category	Current federal commitment	TFRR	GBC	CK
All	6,295 over five years	10,000 over seven years	350 over five years*	24,800 over 10 years

*Plus uncosted recommendations.

Canada has already announced a suite of measures to support the decarbonization of industry and encourage innovation. The key is now to ensure these investments serve to rapidly scale up green industrial activity and facilitate transition away from fossil fuels as leading regions like the EU and United Kingdom are already doing, rather than acting as inefficient fossil fuel subsidies. Encouraging investment in startups and innovative technologies is one important strategy (Corkal, Gass, et al., 2020). The federal commitment to spending CAD 750 million over five years via Sustainable Development Technology Canada to support clean tech (ECCC, 2020) is welcome, provided no new fossil fuel subsidies are introduced that would counteract progress in this area.

There are significant opportunities to **invest in technologies in which Canada can gain a competitive advantage** (Torrie et al., 2020). For an idea of scale, Corporate Knights calls for CAD 40 billion for a Natural Resources and EV Innovation Fund⁷; similar calls for an innovation fund have been made by the GBC. **Clear industrial roadmaps and a green industrial strategy** are also needed: in this respect, the TFRR recommends CAD 5 billion to chart clear paths and enable private sector initiative for net-zero industry (similar to the first recommendation of the Expert Panel for Sustainable Finance), as well as incentives and investments to drive innovation and job creation (TFRR, 2020). A clearer strategy is also needed to **drive investment toward a circular, zero-waste economy**. Corporate Knights recommends an investment of CAD 4.8 billion over 10 years to begin decarbonizing Canada's manufacturing—especially heavy industry which accounts for 85% of total manufacturing greenhouse gas emissions in Canada (Torrie et al., 2020).

⁷ CAD 20 billion of this amount has been listed in the Transportation sector summary of this report.



3.7 Workforce Development and Just Transition

The transition to net-zero by 2050 will have far-reaching implications for Canada's workforce. There is an urgent need to proactively plan for this transition, including through green industrial policy (Section 3.6), workforce training, and just transition implementation. In addition to the following, the government should ensure COVID-19 stimulus has clear principles applied to ensure good working conditions, including health and safety (Canadian Labour Congress, 2020; Corkal, Gass, et al., 2020).

3.7.1 Workforce Training

Beyond buildings-related training, the TFRR calls for collaboration with subnational and Indigenous governments on skills training, as well as CAD 400 million for workforce training in ecosystem restoration and other nature-focused investments (TFRR, 2020). Iron and Earth's Prosperous Transition Plan sees building workforce training as one component of their CAD 10 billion National Upskilling Initiative, which would train over 1 million workers for net-zero-compatible careers (Iron & Earth, 2020). Similarly, the Canadian Labour Congress calls for a green youth guarantee and emphasizes that mandated skills training and on-the-job opportunities must be part of federal infrastructure investments (Canadian Labour Congress, 2020). On EVs specifically, the GBC called for the creation of a ZEV automotive technician training program through CAD 10 million in Budget 2020 (GBC, 2020).

3.7.2 Just Transition Implementation

In 2018, the Task Force on Just Transition for Canadian Coal Power Workers and Communities released a list of recommendations to address the impacts on workers and communities of the planned phase-out of coal-fired electricity (ECCC, 2018). Previous budget announcements in 2018 and 2019 have not adequately funded these recommendations (Canadian Labour Congress, 2019). The climate plan renews Canada's pledge to implement the recommendations (ECCC, 2020), but this commitment must be supported by funding and implementation, including a Just Transition Act. International precedents should be followed: the EU announced the creation of a EUR 17.5 billion (CAD 27.1 billion) Just Transition Fund (Abnett, 2020).

Just transition implementation must extend beyond coal to oil, gas, and other high-carbon sectors of the economy. Through proper planning and proactive, inclusive policies, workers and communities can be effectively supported (Stanford, 2021). To start, COVID-19 recovery policies must be aligned with a just transition to a carbon-neutral society (Corkal, Gass, et al., 2020; GBC, 2020; The Lancet, 2020).



4.0 Conclusion

The updated federal climate plan is the most ambitious climate plan in Canada's history, but much more is needed to truly achieve the fundamental economic and energy shifts required to meet the federal commitment to net-zero emissions by 2050. In addition to scaled-up funding, the government should ensure funding aligns with all seven principles listed in the report *Green Strings* (Corkal, Gass, et al., 2020). Beyond the scope of this report, urgent action is also needed to address the biodiversity crisis and support the natural systems on which our lives depend (HM Treasury, 2021)—we stress that these measures must be in addition to what is listed in the climate plan.

In tandem with programs and tax incentives to stimulate a green recovery, **regulation has a major role to play by enforcing standards and setting hard limits on certain polluting activities.** It can also help save government money. This includes elements such as a clear ZEV mandate and phase-out of internal combustion engine vehicles, robust building codes, mandatory climate risk disclosure, and more. Regulations and clear policies can also help achieve equity priorities—something demonstrated by President Biden's Justice40 initiative which aims for “40 percent of the overall benefits of relevant federal investments to disadvantaged communities” (The White House, 2021). Canada can also learn from countries like Denmark, which has announced to phase out fossil fuel production by 2050 and is planning for transition (Buttler, 2020).

One aspect of Canada's climate plan that is relevant across multiple policy areas is increased attention to Indigenous leadership, self-determination, and funding priorities. Related commitments in the new climate plan are encouraging, though co-development and decision-making by Indigenous Nations are critical to fully implementing the tenets of Indigenous climate leadership. This will play an important role, including a shift toward flexible, nations-based funding arrangements that directly transfer resources, capacity, and authority to Indigenous Peoples, to advance Canada toward fully implementing the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) (Assembly of First Nations, 2020; Corkal, Gass, et al., 2020). **Government must fulfill its constitutional mandate regarding its relationship with Indigenous governments and peoples, including through climate action and COVID-19 recovery more generally.**

We recognize that the fiscal demands to increase climate action are significant, but they are also necessary. **In the short term, the scale of what is needed will require deficit spending—a necessary down payment for a sustainable future.** However, money to support funding climate action can also come from smart approaches to fiscal policy. Phasing out fossil fuel subsidies can free up capital for clean investments. Global green bond issuance is rising rapidly and will be key to recovery (Chestney, 2021; Ward et al., 2020). Proposals such as a wealth tax, an excess profits tax, a bunker fuel levy, and others have been debated by experts, and all options to finance climate action should be considered for their potential to both fund recovery and



simultaneously achieve social or environmental goals (Broadbent Institute, 2020; Hand, 2020; Hemingway, 2020). Investments in climate action will help reduce the rapidly rising costs of climate change (Canadian Institute for Climate Choices, 2020).

The funding gaps listed in this report require targeted and scaled-up investments in Budget 2021 and beyond. They are the next step to continued and strengthened climate action, but far from the last. And they must be accompanied by concerted long-term investments and action to ensure inclusive policy and program design and provide complementary investments to strengthen the social safety net (Corkal, Gass, et al., 2020; *Just Recovery for All*, 2020). That work must start today.



References

- Abnett, K. (2020, December 16). *EU agrees its green transition fund will not support natural gas*. Reuters. <https://www.reuters.com/article/climate-change-eu-fund-idUSKBN28Q2CZ>
- Allen, J., & Farber, S. (2019). Sizing up transport poverty: A national scale accounting of low-income households suffering from inaccessibility in Canada, and what to do about it. *Transport Policy*, 74, 214–223. <https://doi.org/10.1016/j.tranpol.2018.11.018>
- Assembly of First Nations. (2019). *Resolution no. 02/2019: Advancing First Nations clean energy leadership for economic development and action on climate change*. <https://www.afn.ca/wp-content/uploads/2019/08/19-02-Advancing-First-Nations-Clean-Energy-Leadership-for-Economic-Development-and-Action-on-Climate-Change.pdf>
- Assembly of First Nations. (2020, November). *A new path forward: AFN COVID-19 discussion paper*. Virtual Dialogue Session. COVID-19 Discussion Paper: Regional Concerns and Key Insights. http://www.afn.ca/wp-content/uploads/2020/12/20_11_16_DRAFT-Discussion-Paper_Summary-Document.pdf
- Biden For President. (2020a). *9 key elements of Joe Biden's plan for a clean energy revolution*. Joe Biden for President: Official Campaign Website. <https://joebiden.com/9-key-elements-of-joe-bidens-plan-for-a-clean-energy-revolution/>
- Biden For President. (2020b). *The Biden plan to build a modern, sustainable infrastructure and an equitable clean energy future*. Joe Biden for President: Official Campaign Website. <https://joebiden.com/clean-energy/>
- Broadbent Institute. (2020). *What kind of economic recovery do Canadians want in a post-COVID world?* Broadbent Institute. <https://www.broadbentinstitute.ca/survey>
- Brown, F., & Sandborn, C. (2020, September 26). Opinion: Support for Indigenous Guardians can be the key to meaningful reconciliation. *The Globe and Mail*. <https://www.theglobeandmail.com/opinion/article-support-for-indigenous-guardians-can-be-the-key-to-meaningful/>
- Buttler, M. (2020, December 3). *Denmark to end North Sea oil production in milestone deal*. Bloomberg. <https://www.bloomberg.com/news/articles/2020-12-03/denmark-ends-north-sea-oil-exploration-drops-production-in-2050?sref=CZ0inxEB>
- Çakmakli, C., Demiralp, S., Kalemli-Özcan, Sebnem, Yeşiltaş, S., & Yildirim, M. A. (2021). *The economic case for global vaccinations: An epidemiological model with international production networks* (No. w28395). National Bureau of Economic Research. <https://doi.org/10.3386/w28395>
- Canada Green Building Council. (2020). *Ready, set, grow: How the green building industry can reignite Canada's economy*. Canada Green Building Council. https://www.cagbc.org/cagbcdocs/advocacy/CaGBC_Green_Recovery_Strategy_EN.pdf



- Canada Infrastructure Bank (CIB). (2020). *Growth plan*. Canada Infrastructure Bank - Banque de l'infrastructure du Canada. <https://cib-bic.ca/en/partner-with-us/growth-plan/>
- Canadian Institute for Climate Choices. (2020). *Tip of the iceberg: Navigating the known and unknown costs of climate change in Canada*. <https://climatechoices.ca/reports/tip-of-the-iceberg/>
- Canadian Labour Congress. (2019, March 25). *The Canadian Labour Congress (CLC) releases detailed analysis of Budget 2019*. Canadian Labour Congress. <https://canadianlabour.ca/the-canadian-labour-congress-clc-releases-detailed-analysis-of-budget-2019/>
- Canadian Labour Congress. (2020). *Labour's vision for economic recovery*. <https://canadianlabour.ca/wp-content/uploads/2020/05/LabourPrioritiesForEconomicRecovery-final-2020-05-13-EN-1.pdf>
- Chestney, N. (2021, January 25). Global green bond issuance hit new record high last year. *Financial Post*. <https://financialpost.com/pmnbusiness-pmn/global-green-bond-issuance-hit-new-record-high-last-year>
- Climate Action Network Canada. (2019, December 2). *Canada's fair share towards limiting global warming to 1.5°C*. <https://climateactionnetwork.ca/2019/12/02/canadas-fair-share-towards-limiting-global-warming-to-1-5c/>
- Clean Energy Canada. (2020). *Taking the wheel: How Canada can cut carbon pollution and revitalize its auto sector*. https://cleanenergycanada.org/wp-content/uploads/2020/12/Report_Taking_the_Wheel_December2020.pdf
- Corkal, V. and Beedell, E. (2021). *Assessing the climate compatibility of Canada's COVID-19 response in 2020*. Recovery Through Reform series. <https://www.iisd.org/publications/climate-canada-covid-19-response>
- Corkal, V., Gass, P., & Cosbey, A. (2020). *Green strings: Principles and conditions for a green recovery from COVID-19 in Canada*. <https://www.iisd.org/library/green-strings-recovery-covid-19-canada>
- Currie, B., & Walsh, M. (2020, November 30). Liberals plan \$100-billion in new stimulus spending, begin plotting pandemic recovery. *The Globe and Mail*. <https://www.theglobeandmail.com/politics/article-liberals-plan-100-billion-in-new-stimulus-spending-begin-plotting/>
- Dagnet, Y., & Jaeger, J. (2020, September 15). *Not enough climate action in stimulus plans*. World Resources Institute. <https://www.wri.org/blog/2020/09/coronavirus-green-economic-recovery>
- Department for Business, Energy & Industrial Strategy. (2020, December 3). *UK sets ambitious new climate target ahead of UN Summit*. <https://www.gov.uk/government/news/uk-sets-ambitious-new-climate-target-ahead-of-un-summit>



- Department of Finance. (2020). *Fall economic statement 2020*. <https://www.canada.ca/en/department-finance/news/2020/11/government-of-canada-releases-supporting-canadians-and-fighting-covid-19-fall-economic-statement-2020.html>
- Di Nino, J. (2021, February 10). *Historic government announcement falls short as they neglect to address operational funding, transit union says*. ATU Canada. <https://www.atucanada.ca/press-releases/historic-government-announcement-falls-short-they-neglect-address>
- Environment and Climate Change Canada (ECCC). (2018). *A just and fair transition for Canadian coal power workers and communities*. Task Force on Just Transition for Canadian Coal Power Workers and Communities. http://publications.gc.ca/collections/collection_2019/eccc/En4-361-2019-eng.pdf
- Environment and Climate Change Canada. (2020). *A healthy environment and a healthy economy*. <https://www.canada.ca/content/dam/eccc/documents/pdf/climate-change/climate-plan/healthy-environment-healthy-economy-plan.pdf>
- Energy Policy Tracker (EPT). (2021). *Energy policy tracker*. <https://www.energypolicytracker.org/>
- Farmers for Climate Solutions. (2021a). *A down payment for a resilient and low-GHG farm future: \$300 million to reduce agricultural GHGs by 10 megatonnes and lay the groundwork for widespread adoption of climate-friendly farming in APF 2023*. Budget 2021 Recommendation. <https://farmersforclimatesolutions.ca/budget-2021-recommendation>
- Farmers for Climate Solutions. (2021b). *Climate action in agriculture policy around the world*. <https://static1.squarespace.com/static/5dc5869672cac01e07a8d14d/t/602eab0d76c2852b0c4de76b/1613671182008/FCS-Climate-action-in-agriculture-around-the-world.pdf>
- Federation of Canadian Municipalities [FCM]. (2020). *Building back better together*. <https://data.fcm.ca/documents/COVID-19/fcm-building-back-better-together.pdf>
- Green Budget Coalition (GBC). (2020). *Recommendations for recovery and budget actions in 2020-2021*. <https://greenbudget.ca/wp-content/uploads/sites/4/2020/09/Green-Budget-Coalitions-final-Recommendations-for-Recovery-and-Budget-Actions-in-2020-2021-Advance-copy-September-24-2020-web-site-min.pdf>
- Giles-Corti, B., Foster, S., Shilton, T., & Falconer, R. (2010). The co-benefits for health on investing in active transportation. *New South Wales Public Health Bulletin*, 21, 122–127. <https://doi.org/10.1071/NB10027>
- The Greenlining Institute. (n.d.). *Electric vehicles for all: An equity toolkit*. <https://greenlining.org/resources/electric-vehicles-for-all/>
- Gurmu, N. (2020). *Whose green recovery? Why poorer countries must not be left behind by richer countries' recovery plans*. Christian Aid. <https://www.christianaid.org.uk/sites/default/files/2020-10/Whose%20Green%20Recovery%20report%20pdf.pdf>



- Hand, M. (2020, November 9). *EU extension of ETS to shipping will fund post-Covid recovery, warns ICS*. Seatrade Maritime News. <https://www.seatrade-maritime.com/regulation/eu-extension-ets-shipping-will-fund-post-covid-recovery-warns-ics>
- Harding, A. (2021, January 27). *Hogging Covid vaccines endangers all nations, warns South Africa expert*. BBC News. <https://www.bbc.com/news/world-africa-55825559>
- Hemingway, A. (2020, April 23). *Excess profits tax needed to prevent profiteering amid COVID-19*. *Toronto Star*. <https://www.thestar.com/opinion/contributors/2020/04/23/excess-profits-tax-needed-to-prevent-profiteering-amid-covid-19.html>
- Hepburn, C., O’Callaghan, B., Stern, N., Stiglitz, J., & Zenghelis, D. (2020). *Will COVID-19 fiscal recovery packages accelerate or retard progress on climate change?* *Oxford Review of Economic Policy*, graa015. <https://doi.org/10.1093/oxrep/graa015>
- HM Treasury. (2021). *Final report – The economics of biodiversity: The Dasgupta review*. <https://www.gov.uk/government/publications/final-report-the-economics-of-biodiversity-the-dasgupta-review>
- Hydrogen economy outlook: Key messages*. (2020). BloombergNEF. <https://data.bloomberglp.com/professional/sites/24/BNEF-Hydrogen-Economy-Outlook-Key-Messages-30-Mar-2020.pdf>
- Holl, K. D., & Brancalion, P. H. S. (2020). *Tree planting is not a simple solution*. *Science*, 368(6491), 580–581. <https://doi.org/10.1126/science.aba8232>
- Indigenous Clean Energy. (2020). *Accelerating transition: Economic impacts of Indigenous leadership in catalyzing the transition to a clean energy future across Canada*. <https://icenet.work/attachment?file=HGQf2DFTWWHlIc6jcRtUCg%3D%3D>
- Infrastructure Canada. (2021). *Backgrounder: A plan to permanently fund public transit and support economic recovery*. <https://www.canada.ca/en/office-infrastructure/news/2021/02/a-plan-to-permanently-fund-public-transit-and-support-economic-recovery.html>
- Iron & Earth. (2020). *The prosperous transition plan*. https://d3n8a8pro7vhmx.cloudfront.net/ironandearth/pages/1585/attachments/original/1610746247/Iron_Earth_-_Prosperous_Transition_Plan_-_Policy_Brief.pdf?1610746247
- Isaac, D., & Sharpe, V. (2020, September 14). *Opinion: An Indigenous infrastructure fund can offer lasting, meaningful change in Canada*. *The Globe and Mail*. <https://www.theglobeandmail.com/business/commentary/article-an-indigenous-infrastructure-fund-can-offer-lasting-meaningful-change/>
- Just Recovery for All. (2020). *Home page*. <https://justrecoveryforall.ca/>
- Kim, J. H., Marks, F., & Clemens, J. D. (2021). *Looking beyond COVID-19 vaccine phase 3 trials*. *Nature Medicine*, 1–7. <https://doi.org/10.1038/s41591-021-01230-y>
- The Lancet. (2020). *The Lancet countdown on health and climate change: Policy brief for Canada*. <https://policybase.cma.ca/en/permalink/policy14382>



- Lion Electric. (2021). *Lion Electric Announces the Construction of its Battery Manufacturing Plant and Innovation Center in Quebec*. <https://www.newswire.ca/news-releases/lion-electric-announces-the-construction-of-its-battery-manufacturing-plant-and-innovation-center-in-quebec-826634300.html>
- Mathis, W. (2021, February 1). *Biggest economies' climate policies fall short of Paris goals*. Bloomberg Green. <https://www.bloomberg.com/news/articles/2021-02-01/biggest-economies-climate-policies-fall-short-of-paris-goals?sref=CZ0inxEB>
- Office of the Prime Minister. (2020a, July 16). *Priorities to safely restart Canada's economy*. Prime Minister of Canada. <https://pm.gc.ca/en/news/backgrounders/2020/07/16/priorities-safely-restart-canadas-economy>
- Office of the Prime Minister. (2020b, October 8). *New commitment to battery-electric vehicle manufacturing in Ontario*. Prime Minister of Canada. <https://pm.gc.ca/en/news/news-releases/2020/10/08/new-commitment-battery-electric-vehicle-manufacturing-ontario>
- Organisation for Economic Co-operation and Development (OECD). (2020). *Conversion rates—Exchange rates—OECD Data*. <https://data.oecd.org/conversion/exchange-rates.htm>
- Reed, G., Brunet, N. D., Longboat, S., & Natcher, D. C. (2020). Indigenous guardians as an emerging approach to indigenous environmental governance. *Conservation Biology: The Journal of the Society for Conservation Biology*. <https://doi.org/10.1111/cobi.13532>
- Rivers, N., & Shiell, L. (2016). Free-riding on energy efficiency subsidies: The case of natural gas furnaces in Canada. *The Energy Journal*, 37(4). <https://doi.org/10.5547/01956574.37.4.nriv>
- Sawyer, D. (2020, February 25). *Coming soon (very soon): Net zero by 2050*. Canadian Institute for Climate Choices. <https://climatechoices.ca/net-zero-by-2050/>
- Stanford, J. (2021). *Employment transitions and the phase-out of fossil fuels*. *The Centre for Future Work*. <https://centreforfuturework.ca/wp-content/uploads/2021/01/Employment-Transitions-Report-Final.pdf>
- Task Force for a Resilient Recovery (TFRR). (2020). *Bridge to the future: Final report from the Task Force for a Resilient Recovery*. https://www.recoverytaskforce.ca/wp-content/uploads/2020/09/TFRR-Final-Report_EN.pdf
- Taylor, K. (2020, December 18). *EU agrees to set aside 37% of recovery fund for green transition*. EURACTIV. <https://www.euractiv.com/section/energy-environment/news/eu-agrees-to-set-aside-37-of-recovery-fund-for-green-transition/>
- Torrie, R., Bak, C., & Heaps, T. (2020). *Building back better with a bold green recovery*. Corporate Knights. <https://www.corporateknights.com/reports/green-recovery/building-back-better-bold-green-recovery-synthesis-report-15934385/>



- Tucker, B., DeAngelis, K., & Doukas, A. (2020). *Still digging: G20 governments continue to finance the climate crisis*. Oil Change International. <http://priceofoil.org/content/uploads/2020/05/G20-Still-Digging.pdf>
- United Nations Framework Convention on Climate Change (UNFCCC). (2020, December 12). *Climate ambition summit builds momentum for COP26*. <https://unfccc.int/news/climate-ambition-summit-builds-momentum-for-cop26>
- United Nations Secretary-General. (2021, January 28). *Secretary-General's remarks to member states on priorities for 2021*. United Nations Secretary-General. <https://www.un.org/sg/en/content/sg/statement/2021-01-28/secretary-generals-remarks-member-states-priorities-for-2021-bilingual-delivered-scroll-down-for-all-english-version>
- Vivid Economics and Finance for Biodiversity Initiative. (2021). *Green stimulus index: An assessment of the orientation of COVID-19 stimulus in relation to climate change, biodiversity and other environmental impacts*. <https://www.vivideconomics.com/wp-content/uploads/2021/02/Greennes-of-Stimulus-Index-5th-Edition-FINAL-VERSION-09.02.21.pdf>
- Ward, J., Ainger, J., & Pronina, L. (2020, November 6). *EU's green bonds set to preempt rules that will govern them*. Bloomberg Green. <https://www.bloomberg.com/news/articles/2020-11-06/eu-green-bonds-set-to-preempt-the-rules-that-will-govern-them>
- The White House. (2021, January 27). *Executive order on tackling the climate crisis at home and abroad*. <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/>
- World Bank. (2019). *Population, total—World Bank Open Data*. <https://data.worldbank.org/indicator/SP.POP.TOTL>
- World Health Organization (WHO). (2018). *More active people for a healthier world: Global action plan on physical activity 2018-2030*. <https://apps.who.int/iris/bitstream/handle/10665/272722/9789241514187-eng.pdf>
- Zero Emission Vehicle Transition Council. (2020, November 27). *Joint statement of the Zero Emission Vehicle Transition Council*. <https://www.gov.uk/government/news/joint-statement-of-the-zero-emission-vehicle-transition-council>

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