

Standing Committee on Industry, Science and Technology
Sixth Floor, 131 Queen Street
House of Commons
Ottawa ON K1A 0A6
Canada

Re: Canadian Response to the COVID-19 Pandemic

Dear Committee Members,

I am writing to you in the hope that I can contribute to the work of this committee as it studies the Canadian Response to the COVID-19 pandemic. In particular, I would like to advocate that any recommendations made by the committee about the allocation of future federal stimulus funding be framed in the context of the need for a **green recovery** from this crisis.

I am currently a Canada Research Chair (Tier II) in Economy and Environment at Queen's University, an Expert Advisor to the Taskforce for a Resilient Recovery, and a member of the CIHR-funded Global 1 Health Network that is stimulating new research on the global governance of infectious diseases (such as SARS-CoV-2) and antimicrobial resistance.

Prior to joining the faculty at Queen's in 2018, I spent five years studying government responses to the 2008 global financial crisis. I examined the "green stimulus" measures adopted in Canada, Australia, the United States, South Korea, and Japan. This work, which was funded by the Australian Research Council (I was based at the Australian National University at the time), was published in *Green Keynesianism and the Global Financial Crisis* (Routledge) in 2018. In the attached submission, I have attempted to briefly summarize some of the main lessons learned from that research.

If any elements of the attached submission are unclear, I am more than happy to answer questions from the committee and provide further sources of information.

Thank you for taking the time to read and consider my submission.

Sincerely,

A handwritten signature in black ink, appearing to read "Kyla Tienhaara", followed by a horizontal line.

Dr Kyla Tienhaara

The Need for a Green Recovery

It is widely accepted that limiting climate change to an average temperature rise of 1.5°C, in line with the Paris Agreement, will require substantial and sustained investments in low-carbon technologies and infrastructure. Some of these investments will be made by the private sector. However, environmental policy scholars generally agree that the transition to a low-carbon economy and the greening of basic infrastructure cannot be left to market forces alone. As Gore (2010, 732) notes:

Whilst markets might allocate resources effectively between existing activities, they are not effective in allocating resources between new and old activities, in generating structural change and in dealing with the social impacts of the associated creative destruction of economic activities and livelihoods.

In other words, government intervention in energy markets and government-administered (re)building of basic infrastructure will be necessary regardless of what other strategies for achieving sustainability (whether market-based or regulatory) are deployed. Eskelinen (2015, 102) describes this conclusion as the “minimum common denominator in politics of environmental sustainability.”

Economic crises, such as the current one, present an opportunity for governments to make the necessary investments in decarbonizing the economy, whilst also creating good green jobs. Numerous international experts, public figures and groups have called for a green recovery from the COVID-19 recession including:

- the International Energy Agency
- the International Monetary Fund and the World Bank
- former UK Prime Minister Gordon Brown
- 200 organizations representing at least 40 million health workers

The European Union, Japan and South Korea have already committed to a green recovery. Canadians also clearly want a green recovery, with recent polling suggesting **84% would support the federal government prioritizing investments in green sectors** (Beer 2020).

Principles for a Green Recovery

While there are important differences between the current crisis and the Global Financial Crisis (GFC), there are lessons that we can learn from the “green” stimulus measures adopted in response to that crisis. Although many of the 2008-09 investments did stimulate the economy, most did little to address climate change or other environmental issues. Greenhouse gas emissions initially dropped, due to reduced economic activity, but quickly rebounded in 2010. The opportunity presented by the GFC to decarbonize our economies was, essentially, wasted. We cannot afford to repeat the mistakes of the past.

One of the key problems with the 2008-09 response was that governments **did not invest enough money in green programs**. The green portion of Canada’s 2009 Economic Action Plan, as estimated by a research team at HSBC (using a very broad definition of “green”), was \$3.3 billion or 8.3% of the total, which was very low in comparison with the US and other G20 countries, where the average was 15% (Robins and Clover 2009). This spending was pared back and reallocated over time, resulting in only about \$2.6 billion of actual funding (see Annex). **A green recovery from the current crisis requires a much larger stimulus package.**

In addition to low overall green spending, many investments that were labelled “green” were not actually designed with environmental outcomes as a top priority. There is no universally accepted definition of “green stimulus,” which is not a problem unique to this area of study; for example, Goods (2011) outlines similar difficulties in defining “green jobs.” Economist Edward Barbier, one of the early proponents of green stimulus, defines green stimulus as:

Fiscal stimulus measures that are targeted to reducing carbon dependency and to other environmental improvements – e.g., supporting renewable energy development, carbon capture and sequestration, energy efficiency, public transport and rail; improving or modernizing electrical grid transmission and river basin management; and improving freshwater supplies and ecosystem management (Barbier 2010, 294).

However, this definition mainly serves to list examples of projects that might or might not be legitimately “green” depending on the circumstances. For example, in order for high speed rail to be justifiable in emissions terms, it needs to replace a substantial amount of air travel (i.e. location is critical). Furthermore, while carbon capture and storage (CCS) regularly appears in green stimulus proposals, the experience of the GFC-induced funding suggests that it is not a sound investment in economic or environmental terms. Of the 17 projects allocated GFC-stimulus funding across Canada, Australia, and the United States, 10 were eventually cancelled and a further two remain in doubt (Tienhaara 2018). The case for CCS is even weaker now than it was in 2009, given the substantial advances in renewable energy technology that have been made since then.

Rather than providing a list of projects potentially worthy or not worthy of funding, this submission argues for the adoption of three key principles for a green recovery. These principles are a modification of the “three T’s” (that fiscal stimulus should be “timely, targeted, and temporary”) advocated by economists in the wake of the GFC (Elmendorf and Furman 2008).

Timely, but not hasty

Individuals in dire need should receive stimulus funds as quickly as possible. However, this can and has been achieved by existing programs such as CERB. This submission is focused instead on the next phase of investments (as the current downturn is predicted to last a number of years) where timeliness is not as critical.

This is good news from an environmental perspective because the focus on timeliness in 2008-09 meant that **shovel-ready brown projects**, like investments in roads, got priority over **shovel-worthy green ones**. The haste with which governments tried to get money out the door also contributed to poor policy design. And the need for speed was used to support efforts to pare back or eliminate important regulatory processes, like **environmental impact assessments**.

Given these issues, the timely criterion should be modified. Measures should still be implemented in a reasonably timely manner; there is, after all, as much urgency associated with addressing climate change as with any economic downturn. However, speed should not take precedence over the need for investment measures to be thoughtfully considered, appropriately designed, and regulated by existing frameworks that have been put in place to protect the public and the environment.

Targeted++

The original reason given by economists for the targeted criterion is that low-income earners are more likely to spend any money that they save through stimulus programs, creating a larger multiplier effect

in the economy. However, there is also a broader moral case to be made for addressing inequality through government investment, especially if the multiplier effect is based upon environmental sustainability and not simply higher levels of ecologically damaging consumption.

Targeting investments to low-income households can have environmental benefits. For example, low-income families often occupy homes that are the least energy efficient, but they are unable to make improvements without assistance. In other words, targeting low-income households for energy efficiency retrofits means more environmental “bang” for each stimulus “buck.”

While, the targeted criterion should be retained, its meaning should also be expanded to take two additional issues into consideration: (i) public money should primarily be targeted to **public projects**; and (ii) **regions that are hardest hit by the transition** away from fossil fuels should receive more government support.

In terms of directing investment to the **public** sphere, an example is that **public infrastructure should receive government funding whereas effectively private infrastructure should not.** The Northwest Transmission Line, which received \$130 million from the “Green Infrastructure Fund” in Canada’s 2009 stimulus package, was marketed as a project to transition a small remote community from diesel power to clean energy. In reality it was intended to provide cheap energy to mining companies (Tienhaara 2018). For the same cost, we could have had 46 projects like the Cowessess First Nation Wind and Storage Demonstration project, which brought not only clean energy but also revenue to a small community at a fraction of the cost (\$2.8 million from the “Clean Energy Fund”).

Similarly, investments in **public transportation** should be prioritized over ‘cash for clunker’ or electric car rebates. Given the particular challenges facing public transport at the moment, and the clear role that a safe and accessible public transportation system can play in reducing inequality, this is a crucial area for federal government investment.

There may be a reasonable case for governments providing concessional loans and other assistance to private companies that are developing or commercializing clean technologies. However, as Mazzucato (2015) suggests, in these cases, the state should receive a return on successful investments.

In terms of **targeting government investment to regions that are traditionally reliant on employment in the fossil fuel industries**, there is a clear link to be made here to the wider discussion on the need for a “just transition.” While, as Snell and Fairbrother (2013, 158) note, it is defined in multiple and contested ways, at the heart of most notions of a just transition “is a basic principle of fairness advocating that the cost of policies that aim to benefit society should not be disproportionately borne by those who are hurt by them.” The preamble of the Paris Climate Agreement mentions that the parties take into account “the imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities.”

Incorporating the notion of a just transition in a green recovery would require targeted spending for communities in fossil fuel rich parts of the country like Alberta and Newfoundland. Further, it would suggest that strong roles in the development and implementation of stimulus programs be assigned to unions, employees, and residents in these communities. These groups should be able to work in collaboration with government to design appropriate and eco-socially just stimulus measures.

Aside from project spending, **employment diversification policies, job training/retraining programs and educational programs, and social protection measures** (social insurance, access to health services etc.) are also important (International Trade Union Confederation 2009). There are also more comprehensive policies, like **universal basic income and job guarantees, and the transition to the 4-day work week**, that are increasingly being explored by academics and even some governments. If designed appropriately, these policies can promote both social equity and environmental sustainability.

Transitional rather than temporary

Governments generally interpreted the temporary criterion to mean that all funding should be spent by a prespecified deadline, usually within a few years of the stimulus package's release. As with "timeliness", the temporary criterion lost much of its relevance when the Great Recession continued for longer than predicted.

The spending deadlines set by governments tended to be arbitrary and too short for some new technologies and industries to mature. To put it in Mazzucato's (2015) language, temporary implies **"impatient capital"** when the opposite is needed. Short timeframes for stimulus also created boom and bust scenarios for industries. Unfortunately, this is what occurred with the popular ecoENERGY Retrofit-Homes program in Canada, which faced funding uncertainty and was prematurely cancelled (see further Tienhaara 2018, Chapter 4).

Simply discarding the temporary criterion would give the wrong impression about the purpose of green stimulus. After all, the argument here is not that specific measures should stay in place indefinitely, especially given economic factors such as the rapidly declining cost of renewable energy (i.e., emerging industries do not need subsidies forever). Therefore, it is proposed that the temporary criterion should be replaced by the requirement that investments be "transitional." Transitional investments are those that are **in place long enough to provide the certainty and stability required for new sectors to become established and for the benefits generated by these sectors to be equitably distributed.**

"Transitional" also indicates something further in relation to a key objective of green stimulus, which is to steer the economy in a new direction rather than to a return to a pre-crisis status quo. In this regard, transitional suggests that stimulus measures should provide substantial impact in terms of environmental benefits such as **greenhouse gas emissions reductions**. It also encapsulates the idea that policymakers should consider **rebound effects, life-cycle impacts, and indirect environmental harms** when designing stimulus measures. As an example, "cash for clunker" schemes perform poorly on these criteria (Lenski et al. 2010).

Table 1 sums up the differences between the established three Ts for traditional stimulus – timely, targeted, and temporary – and the proposed three Ts for green stimulus – timely, targeted, and transitional. The intention in making this distinction is not to frame green stimulus as a minor subset of a more general category of "regular" stimulus. Indeed, given the investments required to meet the commitments of the Paris Agreement, green stimulus should be considered the dominant measure in any government stimulus package. **The only non-green stimulus should be investments in low carbon public goods, such as health care, education, social protection, and the arts.**

Table 1: Original and modified “3 Ts”

3 Ts of traditional stimulus		3 Ts of green stimulus	
Timely	Measures are implemented quickly in response to an economic crisis	Timely	Measures are implemented quickly in response to an economic crisis but not at the expense of careful design and consideration for environmental and broad eco-social impacts
Targeted	Greatest benefits go to low-income earners	Targeted	Greatest benefits go to low-income earners and regions hardest hit by green transition Public money flows predominantly to public projects
Temporary	Measures have a fixed deadline to signal to the market that they will not become permanent	Transitional	Measures are in place long enough to provide stability and certainty to the sector Reductions in CO ₂ emissions or other environmental benefits are prioritized and substantial Measures are appropriately designed to minimize rebound effects, free riding, life-cycle impacts and indirect environmental impacts

In addition to the modified three Ts, decisions about where to invest should also be guided by the **precautionary principle**. Applying a precautionary approach in stimulus decisions requires that investments be considered viable by social and ecological criteria and that a technology that poses substantial risks (e.g. new nuclear power stations) not be funded.

It is also important to consider that green stimulus measures do not exist in a vacuum; success or failure of a program may depend on the existence of complementary policies or the removal of contradictory ones. **Discontinuing fossil fuel subsidies** is an obvious measure that can usefully supplement investment programs aimed at promoting clean technology.

Conclusions

The COVID-19 pandemic has required us to press pause on normal life and has given us an opportunity to reflect on our priorities. It has demonstrated very clearly that the government has a critical role to play in keeping us safe and ensuring that everyone’s basic needs are met. It has also demonstrated that when faced with a clear and present threat, we can act collectively for the common good. We must apply these lessons to the way we approach the ecological crisis. It will take a commitment from all of us, but we desperately need leadership at the federal level.

Instead of rebuilding the economic system that threatens us with civilizational collapse, we need to build back better. Much better. Now is not the time to be asking “can we afford a green recovery?” Instead we should be asking if we can afford and accept the consequences of anything other than a green recovery.

A green recovery needs to be big and bold, but it also needs to be carefully designed. The federal government should adopt clear principles for a green recovery and then bring in experts from across the country (and beyond) to ensure that all investments align with these principles. While the greenhouse gas emissions reductions that any investment will deliver must be a top priority, it is not only possible, but crucial that we achieve such reductions in an equitable and sustainable manner. With the climate, as with COVID-19, we are all in this together and we must take care of one another while we transition to a cleaner, greener, future.

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Annex: Canada’s Past Experience with “Green Stimulus”

Canada’s main stimulus package (Economic Action Plan) in response to the GFC, announced in January 2009, amounted to nearly \$40 billion. The green portion of the plan, as estimated by a research team at HSBC (using a very broad definition of “green”), was \$3.3 billion or 8.3% of the total, which was very low in comparison with the US and other G20 countries, where the average was 15% (Robins and Clover 2009).

The largest green elements of Canada’s Economic Action Plan were \$1 billion over five years to support clean energy technologies (\$650 million for large-scale CCS demonstration projects, \$200 million for other small-scale technological demonstration projects, and \$150 million for research and development); the creation of a Green Infrastructure Fund, with \$1 billion to be spent over five years; \$351 million in funding for the nuclear energy sector; \$300 million for the existing ecoENERGY Retrofit program; and \$407 million for investments in passenger rail.

In terms of what was spent, \$275 million of the Green Infrastructure Fund was transferred to other departments (Infrastructure Canada 2016). \$205 million was shifted out of the Clean Energy Fund into the very popular ecoENERGY Retrofit program. To accommodate this, the research and development budget was slashed to \$24 million and small-scale clean technology projects only received \$146 million, of which \$140.5 million was spent on 18 projects (NRCAN 2014, 2016b). \$610 million remained available for large-scale CCS projects but only \$150 million in actual spending occurred.

Most Canadian environmental organizations were dismayed with the overall stimulus package, even at its original funding level in 2009. As shown in Table 2, actual spending was at least \$706 million lower than what was allocated (due to funding changes in the largest programs). This means that even if all smaller green stimulus programs (not included in Table 2) were fully funded, Canada’s overall investment was only \$2.6 billion. Clearly, Canada did not invest sufficiently in green stimulus measures in 2009 to have a noticeable impact in terms of substantial emissions reductions or other environmental benefits.

Table 2: Major “Green” Programs in Canada’s Economic Action Plan

Program		Funding allocated in 2009 (\$ M)	Funding actually spent (\$ M)
Clean energy technology	CCS	650	150
	Small-scale demos	200	176
	R&D	150	24
Green Infrastructure Fund		1,000	725
Nuclear		351	285
ecoENERGY Home Retrofit*		300	585
Passenger rail		407	407
Total		3,058	2,352

*ecoENERGY received several more top-ups and extensions after 2010.

Sources: Compiled by the author with data from NRCAN (2016a, 2016b), Infrastructure Canada (n.d. a&b) and Government of Canada (2009).