Written Submission for the Pre-Budget Consultations in Advance of the Upcoming Federal Budget

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Recommendation 1: Establish a Network of Public Banks across Canada

Recommendation 2: Use the Powers Inherent to the Bank of Canada

Recommendation 3: Invest in Green Buildings and Mass Deep Building Retrofits

Recommendation 1: Establish a Network of Public Banks across Canada

Public banks all over the world create money for social purpose, guided by their city, regional or national governments. In Germany, Sweden, Denmark, Italy, Spain and France community and state-owned banks serve as much as 64% of the banking market. Germany's public Sparkassen banks, with 15,600 branches and offices, have a return on capital that is several times greater than Germany's private bank sector. As well as providing for the financial needs of Germany's small and medium-sized businesses, they have provided 72% of the financing for Germany's solar and wind installations.

In Germany, the publicly-owned Kreditanstalt fur Wiederaufbau (KfW) has been the main source of financing for building retrofits to tackle the climate crisis. Between 2006 and 2009 it issued 27 billion Euros in loans and grants, triggered 54 billion Euros in further investment and rehabilitated 9 million housing units to a high energy standards, saving a billion Euros a year in heating costs and generating 894,000 jobs that lasted for at least a year.[1] In 2016 KfW also provided €3.5 billion in below market rate loans for energy efficiency in small and medium-sized manufacturers.[2] For each €1 spent promoting retrofits and energy-efficient new builds, the German government received €3 in tax income and savings.

Recommendation: Work with the provinces and professional bankers to establish a Network of Public Banks across Canada, one for each province and one for Yukon, Nunavut and the Northwest Territories. To enable this work to proceed immediately, provide $1 million for development costs, funded by the Treasury Board.

Recommendation 2: Use the Powers Inherent to the Bank of Canada

Central banks also have the power to create money, which they can either use directly, as they did after the 2008 financial crisis, or indirectly, by underwriting other loans. In a July 2019 *Foreign Policy* article *Why Central Banks Need to Step Up on Global Warming*, the economic historian Adam Tooze, Director of the European Institute at Columbia University and author of *Crashed: How a Decade of Financial Crises Change the World*, argued that transformation needed to tackle the climate emergency will require a huge redirection and increase in public spending, and that there is a strong case for funding a large part through the issuance of long-term debt by public investment banks or directly by national governments, and that it should be the job of the central banks to support this push *by acting as buyer of last resort* for these long-term debts. This may raise fears of inflation, he wrote, but central bankers are currently struggling not to tame inflation but to ensure that it remains at 2% per year.[3]

The Bank of Canada is owned by the people of Canada, enabling the government to work with it to maximize its assistance with investments to tackle the climate crisis. These expenditures and investments can come from five sources, none of which will increase taxation or public sector borrowing:

- **Climate Action Bonds** issued by the Government of Canada and bought by the Bank of Canada using **Green Quantitative Easing**.[4]

- **Green Bonds**, equivalent to War Bonds, issued by the government offering a 5% return, guaranteed by the Bank of Canada as buyer of last resort, for sale to the public.

- **Interest-Free Public Bank Loans**, guaranteed by the Bank of Canada as buyer of last resort.

- **Pay-As-You-Save** (PAYS) Utility Loans and **Property-Assessed Clean Energy** (PACE) Municipal Loans, guaranteed by the Bank of Canada as buyer of last resort.

- **Fossil Fuel Subsidy Transfers**.[5] Reviews suggest that Canada offers $3 billion to companies to explore and produce oil and gas within Canada, and that Export Development Canada spent almost $12 billion in 2016 and $10 billion in 2017 on foreign oil production.[6] Transferring these subsidies to assist the transition to renewable energy means that the funds will continue to come from existing taxation.

- Almost all of these investments will generate income from income tax and GST, adding to government revenues.

Recommendation 3: Invest in Green Buildings and Mass Deep Building Retrofits

Buildings produce 12% of Canada's GHGs.[7] The challenge is two-fold: new builds, and retrofitting Canada's 15 million homes and 480,000 industrial, institutional and commercial buildings.

New Builds. The Passive House standard is so efficient that the only heat source needed is a small heat recovery ventilator. Such a house costs 4-5% more to build, but with no heating bills, the additional cost zeroes out within a number of years. In 2011, the city of Brussels passed a regulation requiring every new building, large or small, to be built to the Passive House Standard by 2015. This gave their carpenters four years to learn the new skills, and since 2015 every building has been built to this standard.

- Upgrade Canada's building code to require every new building in Canada to be built to the **Passive House Standard** or an equivalent net-zero energy ready design by 2025, advancing the compliance date from 2030.
- Continue the Net Zero Homes Grants that offer up to $5,000 for new homes that are certified net zero-emissions.
- To develop the necessary building skills, offer a $250,000 **Sustainable Buildings Course Development Grant** to each of Canada's 150 technical and vocational colleges and 12 schools of architecture, enabling tradespeople, architects, engineers, project managers and software developers to embrace the scale of work needed. Cost: $40 million
- To enable architects, engineers, project managers, builders and trades workers to acquire Passive House and building retrofit skills, fund 50,000 **Sustainable Buildings Skills Training Placements** a year. Cost: 50,000 x 25k = $1,250 million per year
- To enable building inspectors and managers to acquire the skills needed to assess Passive Houses and building retrofits, establish a $5 million **Sustainable Building Inspectors Training Fund**.
- The new standard should also apply to homes built to address the affordable housing crisis.

Building Retrofits. Canada has 15 million homes, most of which need a deep energy retrofit to make them more energy efficient and replace oil or gas with heat pumps or biofuel.

- Starting in 2022, require every building listed for sale to carry an **Energy Benchmarking Label** to indicate its level of efficiency.[8]
- Offer every homeowner and landlord a free **Energy Audit** plus follow-up visit, averaging 1.6 million homes a year over 10 years. Cost: 1.5 million @ $600 = $900 million per year
- To incentivize owners to retrofit their buildings, apply an annually increasing **Climate Danger Levy** to the use of oil and natural gas heaters and furnaces after 2030.
- To assist homeowners and landlords, offer interest-free **Home Energy Retrofit Loans** averaging $10,000 per unit for an average 1.5 million homes a year. This is a fourfold increase over the current target of 1.5 million homes over four years, so the loans are reduced from the current

$40,000 to $10,000 to retain the same ballpark cost. A rapidly rising carbon tax will create an incentive to undertake a retrofit. A ductless air-source heat pump costs around $5,000 before local utility or government rebates. On the Fisher River First Nations reserve in Manitoba, a ground-source or water-source heat pump costs around $18,000 per home, permitting heating when the outside temperature is -20°C and reducing energy costs by 40%.[9] In Halifax, they cost $15,500 in 2015.[10] In Ontario, they cost between $22,500 and $29,000.[11] Cost: $15 billion per year

To generate simple zero-downpayment financing:

- Work with the provinces to require every utility to offer **100% Pay-As-You-Save (PAYS)** financing, as Manitoba Hydro does, financing loan repayments by savings on household energy bills.
- Require **Indigenous Services Canada** to allow PAYS financing for retrofits by First Nations social enterprises.[12]
- Work with the provinces, Canada's largest cities and the Federation of Canadian Municipalities to establish a legal framework for **100% Property-Assessed Clean Energy (PACE)** financing, enabling long-term building retrofit loans that are repaid by a charge on the property tax that runs with the property, not the owner. PACE originated in the US in 2008 and has been used to finance 237,000 home and commercial retrofits worth $6.7 billion, creating 63,000 jobs, all without taxpayer support.[13]
- Enable utilities and landlords to contract with **Energy Service Companies (ESCOs)** and social enterprises to undertake building retrofits, financed through the energy savings, with the estimated energy savings being protected by insurance.
- Work with the provinces to change **condo strata-title legislation** to make it easier for condo owners to invest in energy retrofits.
- Advance **Tenants Renovation Security** legislation to ensure that if tenants need to live elsewhere during a retrofit their landlords will work with their municipalities to ensure that alternative rental arrangements are available, and to honour post-retrofit tenancies at the same rent. Model: Vermont.[14]
- Establish CMHC interest-free **Zero-Energy Modular Homes Loans** to encourage Canada's one million mobile home owners to replace their homes. A zero-energy solar modular home costs more than a regular mobile home, but without any heating bills it costs less per month in combined mortgage and energy costs. Model: Vermont.[15] Cost: 100,000 homes a year @ $350,000 = $3.5 billion per year
- Offer $1 million per year in **District Heat Development Grants** and $50 million per year in interest-free **District Heat Implementation Loans** to encourage Canada's municipalities to develop renewable energy district heat systems for 50 communities a year. Cost: $50 million per year in grants, $2.5 billion per year in loans.
- Offer **Industrial, Commercial and Institutional Building Retrofit Loans** averaging $100,000 at 5% to assist the owners of industrial, commercial and institutional buildings to undertake energy retrofits. With an estimated 480,000 ICI buildings, for a 20-years completion by 2040, Canada will need 24,000 ICI retrofits per year, or 500 per week. Cost: $2.4 billion per year

The challenge of this pace and scale of work is enormous. A consulting engineering company in Vancouver, with 20 licensed engineers or EITs (Engineer in Training) and nine support staff, does 20 to 50 commercial retrofits a year, suggesting 0.5 to 1 engineer job-years per retrofit. On this basis, 24,000 retrofits a year would require between 12,000 and 24,000 new engineers. Engineering Canada has 300,000 members, only 13.5% of whom are women. Of the 13,808 people who graduated from accredited post-secondary engineering programs in 2014, only 40% (7,825) became licensed engineers, suggesting a

need for on-line courses, faster and easier licensing for immigrant engineers, and specialized building retrofit training certification.[16]

- Establish a **Mass Deep Retrofits Training Consortium**, including representatives from Colleges and Institutes Canada (CICan), Engineers Canada, engineering, architecture and design faculties, and high school co-op programs. Charge it to bring STEM education and deep retrofit skills to a wider demographic that includes women, indigenous and new Canadians.
- Provide a $250,000 **Mass Deep Retrofits Course Development Grant** to the new Consortium, seeking a rapid response. Cost: $250,000

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[1] KfW: http://towerrenewal.com/wp-content/uploads/2017/04/20170331_Case-Study_KFW.pdf
[2] KfW: https://www.kfw.de/PDF/Download-Center/Konzernthemen/KfW-im-Überblick/KfW-an-overview.pdf
[3] Adam Tooze: https://foreignpolicy.com/2019/07/20/why-central-banks-need-to-step-up-on-global-warming/
[4] Green QE: https://policyoptions.irpp.org/fr/magazines/g8g20/the-case-for-quantitative-easing-for-canada/
[5] Subsidies: https://www.nationalobserver.com/2018/06/15/news/canadas-billions-fossil-fuel-subsidies-go-under-microscope
[6] Fossil fuel subsidies: https://www.nationalobserver.com/2018/06/15/news/canadas-billions-fossil-fuel-subsidies-go-under-microscope
[7] Buildings GHGs: https://www.canada.ca/en/environment-climate-change/services/climate-change/greenhouse-gas-emissions/sources-sinks-executive-summary-2019.html#toc5
[8] Benchmarking: https://www.boma.bc.ca/media/58037/best-practice-building-energy-benchmarking-and-reporting-part-1-building-owners.pdf
[9] Manitoba geothermal: https://www.gov.mb.ca/sd/environment_and_biodiversity/energy/geothermal/geo_districts.html
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