

Federal Sustainable Development Strategy for Canada

Submission of Comment

INTRODUCTION

Clean Energy Canada is an independent think tank based at the Morris J. Wosk Centre for Dialogue at Simon Fraser University. We work to accelerate Canada's transition to a clean and renewable energy system. We are pleased to submit comments and recommendations on the [Draft 2019 to 2022 Federal Sustainable Development Strategy \(FSDS\)](#) released by Environment and Climate Change Canada (ECCC).

This submission will focus on three of the aspirational goals outlined in the FSDS: Effective Action on Climate Change, Greening Government, and Modern and Resilient Infrastructure.

While our submission will be limited in scope, we applaud ECCC's broad and holistic thinking when it comes to the environment, the economy, and climate change. These areas of policy are an interwoven network, and as such, an all-of-government awareness and understanding of their interplay is essential.

The following are our recommendations on how the federal government can strengthen the FSDS in order to accelerate Canada's transition to a clean future. While many of these issues overlap, our recommendations are organized by the aspirational goal to which they most closely relate.

EFFECTIVE ACTION ON CLIMATE CHANGE

According to the International Panel on Climate Change's (IPCC) [Special Report : Global Warming of 1.5°C](#), if Canada and the rest of the world does not take clear and persistent action to reduce greenhouse gas emissions significantly, the results will be catastrophic. Fortunately, there are a variety of ways Canada can meet this challenge.

Clean Energy Canada knows that **effective action on climate change requires both a price on harmful emissions and a strong suite of complementary measures**. Creating a climate change plan without a price on pollution would be like designing a car without a seatbelt because it has an airbag; the airbag might work on its own, but the combination of measures is far more effective.

[Pricing greenhouse gas \(GHG\) emissions offers the most cost-effective policy lever to reduce emissions](#) by providing a financial incentive to reduce emissions in whichever way is most efficient for the end user. It also increases demand for clean products and services, as companies and individuals look for ways to reduce their emissions.

Regulations like the [Clean Fuel Standard \(CFS\)](#), [Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations](#), and [methane emissions reduction requirements](#) pick up the slack in areas that require more of a push in order to achieve emissions reductions.

Clean Energy Canada recognizes that the Pan-Canadian Framework on Clean Growth and Climate Change (PCF) is a good start, but we will need to do more to reach our Paris targets and pull our weight on the global stage. **By ECCC’s own estimates, when combined with Canada’s other emissions reduction efforts, the measures under the PCF will only yield [a net reduction of 19% below 2005 levels \(223 Mt CO₂ eq\)](#), leaving a notable gap to meeting Canada’s Paris agreement target of 30% below 2005 levels by 2030.**

With this gap in mind, we encourage the federal government to develop and implement a clear plan that would close the gap to Canada’s Paris target. The federal government must continue to raise the price of pollution beyond the current schedule, while actively incentivizing the adoption of cleaner technologies and solutions.

Ultimately, **Canada should aim to surpass its current emissions reductions target, in keeping with its commitment to raise ambition, as set out in the Paris Accord. Given [Canada’s position as a top ten global emitter](#), we must lead by example if we expect others—especially developing countries—to take action on climate.** Climate change is a global problem, but like in so many global crises before, Canada can and should lead the way in finding solutions.

In order to achieve these critical emissions reductions, climate policies must be durable, with broad-based support from companies and the public. This will require the federal government to continue engaging Canadians and the private sector, but it will also require a coherent and realistic vision for transitioning to a low-carbon economy. This vision must be an inclusive one, where economic sectors and hard-working Canadians are a key part of the solution and are not left behind.

Key Policy Recommendations

- Develop and implement a clear plan that would close the gap to Canada’s Paris target, transition the country to a lower-carbon economy and ensure that economic sectors and hard-working Canadians are not left behind.
- Continue to raise the price of pollution beyond the current schedule, while actively incentivizing the adoption of cleaner technologies and solutions.
- Continue to develop and implement durable complementary measures to cut carbon pollution, such as the Clean Fuel Standard.
- Aim to surpass Canada’s Paris Agreement emission reduction targets, taking action proportional to Canada’s position as a top ten global emitter.

GREENING GOVERNMENT

As the FSDS acknowledges, the federal government must do its part to reduce its own emissions while contributing to the broader economy-wide plan. The government's Greening Government Strategy to reduce GHG emissions from federal operations 40% by 2030 (with an aspirational goal to achieve this target by 2025) and 80% by 2050 relative to 2005 levels is a strong step in the right direction. This ambitious goal requires the federal government to rethink the way it constructs, retrofits and operates its buildings; transports its employees; procures products and services; and powers itself. The following are Clean Energy Canada's recommendations on how the FSDS and federal government's commitments can be targeted and strengthened to achieve these goals.

SUPPORTING CLEAN TECH THROUGH OUTCOMES-BASED PROCUREMENT

Under the PCF, the Government of Canada—together with provincial and territorial governments—has committed to “modernize procurement practices, adopt clean energy and technologies, and prioritize opportunities to help Canadian businesses grow, demonstrate new technologies and create jobs.” While seemingly a tall order, it's an important step toward Canada's goal of building a resilient economy based on clean growth.

Governments wield a tremendous amount of economic heft through the volume of goods and services they purchase. [Procurement by all levels of government accounts for close to 33 percent of government expenditures across this country, or slightly more than 13 percent of Canada's entire GDP.](#) This creates demand, and demand helps create markets.

The FSDS states that “[d]epartments will adopt clean technology and undertake clean technology demonstration projects.” While this indicates that the federal government is making the connection between procurement and supporting cleaner technologies, the specific approach the government takes will matter.

In September of 2017, Clean Energy Canada convened a representative group of stakeholders and experts on the issue of procurement that, with subsequent interviews and a review of relevant literature on procurement, led to the development of our paper [The Power of Procurement: Cutting the federal government's carbon emissions](#), published in January 2018.

This process identified four key outcomes for a successful procurement policy:

Value for money

Procurement policy must ensure that the government receives value for money for all contracts. Currently, value for money is a major factor in the way governments run procurements, and that shouldn't be abandoned. Value for money plays a significant role. The concept of value, however, needs to be rigorously defined and take climate change and GHG emissions reductions clearly into account when determining value.

Economic Development

The government has an essential role to play in transitioning Canada to a low-carbon economy, and that role includes helping our economy grow

and prosper.

Regardless of their market orientation, small- and medium-sized enterprises (SMEs) in the clean technology sector are an example of economic development that could be supported through procurement.

The government should include a role for these clean technology SMEs in providing solutions to government, including the areas of mitigation and adaptation, an emerging field of opportunity

Spurring Clean Tech Innovation

The global market for low-carbon goods and services is worth over \$5.8 trillion, and it's projected to grow 3% per year. In other words, Canada has an opportunity to leverage its strengths in clean technology. Procurement can help the government support its goal to spur clean technology innovation and help Canada remain economically competitive.

Sustainability in Buildings

Buildings represent a unique challenge in procurement policy. It's a challenge worth tackling, as 89% of the government's emissions come from the energy required for buildings (including office space, laboratories and warehouses) compared to 11% from its fleet vehicles.

Buildings require long term thinking when it comes to design as their lifespan can be anywhere from 40 to 60 years or greater. This long life span makes them ideal to showcase the durability of new, clean building material (ie. low-carbon concrete).

With these principles in mind, **it is important that the federal government adopt a more strategic approach to procurement, moving from a prescriptive model of procurement to an outcomes-based model.** This model of procurement sets a clear outcome for the good or service but does not stipulate a specific technology. Rather, it allows for emissions reductions to be baked into the procurement while providing vendors the flexibility to provide goods and services in an innovative way. This approach will not adopt clean technologies as one-off demonstration or pilot projects; instead, it will choose the best, most competitive clean technologies and support them on their path to commercialization.

BUILDING DOMESTIC MARKETS TO SUPPORT CLEAN GROWTH

The global market demand for clean technology is on track to be worth [\\$2.5 trillion in 2020](#). Indeed, improvements in energy and resource efficiency alone are estimated to be worth \$3.8 trillion by 2030. And this global demand for innovative solutions can be met by the hundreds of Canadian cleantech companies, [80% of which are export-oriented already](#).

The FSDS correctly identifies cleantech exports as a critical path for the commercialization of Canadian clean technologies and the growth of Canada's low-carbon economy. However, we must supplement our efforts to open up new markets abroad by also building domestic markets via procurement.

The trajectory of BC-based [Corvus Energy](#) illustrates why creating domestic markets for Canadian clean tech matters. Corvus provides battery power to hybrid and all-electric ferries around the world. Despite its success internationally, Corvus sees very little demand for its products at home. Without local buyers, [companies like Corvus have followed their markets, opening new factories abroad instead of at home in Canada.](#)

For clean growth to work for Canada, the federal government needs to nurture these companies and help them grow—and not just by providing them grants through Sustainable Development Technology Canada (SDTC) or other funds, but also through strategic policy development such as leveraging the government’s procurement power. This approach would help Canadian clean companies prosper and create good jobs in Canada rather than abroad.

INTEGRATING LIFECYCLE ASSESSMENT (LCA) INTO GOVERNMENT DECISION MAKING

The Government of Canada has prioritized increasing infrastructure investment and cutting pollution across the country. The 2016 federal budget saw the launch of the Investing in Canada Plan, the federal government’s long-term infrastructure strategy. This plan marks a historic new investment of \$180 billion over the next 12 years in five key priority areas: public transit, green and social infrastructure, trade and transportation, and rural and remote communities. This investment a key opportunity to get our public infrastructure spending right. If we don’t, we risk being locked in to the wrong path for decades – with expensive retrofits being our only option to later cut pollution and ensure our buildings and bridges can stand up to increasingly severe weather events.

Each time we build infrastructure, whether in the form of a building or a road, we generate GHGs. Generally speaking, the GHGs generated will fall into one of two camps: (1) those that come from the operation of the infrastructure, such as heating a building or running traffic lights and signals on a road; or (2) those that come from the construction of infrastructure, the process used to create the materials used in construction, and how the materials travelled to get to the construction site. Respectively, these are known as operational GHGs and embodied carbon.

As discussed in our report [Building the Future: How smart public infrastructure decisions can cut pollution, save money, and support a clean economy](#), reducing the embodied carbon in our buildings and infrastructure will not only reduce emissions, it will also decrease construction and maintenance costs, boost the local economy and improve the resilience of our communities to the impacts of climate change.

The FSDS states that government procurement will “use lifecycle assessment principles to reduce the environmental impact and ensure best value in government procurement decisions.” With respect to real property, the FSDS commits to “prioritiz[ing] low-carbon investments based on integrated design principles, life-cycle analysis and total- cost-of-ownership assessments” and “[m]inimiz[ing] embodied carbon and the use of harmful materials in construction and renovation.” We applaud this decision as a step in the right direction.

To achieve these higher level goals, a more detailed plan with measurable targets is required. The federal government could start by **undertaking a baseline study of the embodied carbon in its existing buildings and infrastructure and use this baseline as a benchmark for setting targets to reduce the government of Canada’s embodied footprint.**

In addition, the right tools and technical resources must be put in place to allow for adoption of LCA by industry. Industry and experts widely agree that an important first step is the creation of an open and scientifically sound national Life-Cycle Inventory (LCI) database to allow for fair comparison of tendered projects both in terms of lifecycle GHG emissions and the total cost of asset ownership over project lifespans. The database would be accompanied by user-friendly tools and an accessible methodology on how to measure, evaluate, and track the full life-cycle of carbon emissions in buildings and other forms of public infrastructure.

Finally, the creation of these tools must support a shift in government policy and decision-making. In other words, they need to be made mandatory and applied broadly across all public infrastructure programs. There is little to be gained in GHG reductions, cost savings, or innovation without taking this vital step. **We recommend that the Government of Canada work with other levels of government and stakeholders to: set a target for when this new LCI database will be rolled out; ensure sufficient financial support is available to fund the technical infrastructure required; and explore ways to effectively integrate LCA into government policy and decision-making.**

CREATIVE SOLUTIONS TO GOING 100% RENEWABLE

As set out in the FSDS and Greening Government Strategy, the federal government has committed to 100% clean electricity use by 2025. This goal is laudable but will require creative solutions to overcome geographic constraints in some cases, as the federal government must plug directly into whatever electricity grid is nearby. For instance, in the provinces of Quebec and British Columbia, federal government operations would not require many changes, as these provincial grids are already low-carbon. But in provinces like [Alberta, Nova Scotia, and Saskatchewan](#), [significant and unrealistic changes to the provincial electricity generation mix](#) would be required to meet the 100% clean electricity goal. This structural issue can be overcome through the purchasing of Renewable Electricity Credits (RECs).

RECs are a commodity that represents the value and advantages of using renewable energy sources, including electricity sourced from wind turbines, biomass, or solar panels. One REC represents a megawatt-hour (mWh) of electricity produced by a renewable energy facility.

When a federal department purchases RECs equivalent in value to the department's electricity consumption, the [department offsets the electricity they've sourced from the provincial grid by contributing green energy to the shared power grid](#).

The procurement of RECs allows the federal government to bypass limitations in provincial utilities and grids, and deal directly with individual power producers to secure credits to offset electrical grid associated emissions. This direct purchase of RECs from renewable power projects also allows the government to green its operations faster than a utility can shrink the carbon intensity of its total grid capacity.

RECs provide a flexible, cost-effective, and scalable mechanism for the federal government to achieve its stated goal of having 100% of its electricity needs met by clean sources by 2025.

Moreover, new and significant demand for RECs would drive additional investment in renewable energy generation, which would support the federal government's commitment to securing a 90% percent non-emitting electricity grid in Canada.

MOVING BEYOND LIGHT DUTY VEHICLES IN FLEET COMMITMENTS

The FSDS commits to ensuring that 75% of all new light-duty administrative fleet vehicle purchases and all new executive vehicle purchases will be zero-emission vehicles (ZEVs) or hybrid. It also commits to ensuring that at least 80% of its administrative fleet is made up of 80% ZEVs by 2030, and mandates that departments develop a strategic approach and take actions to decarbonize their fleets (including on-road, air, and marine). These fleets present significant potential to decarbonize the operations of the federal government, while simultaneously providing an incentive for original equipment manufacturers (OEMs) to make more ZEVs available in the Canadian market.

Canada is home to four manufacturers of electric buses ([New Flyer](#), [Lion Electric Co.](#), [Nova Bus](#), and [Green Power Motor Company](#)) who supply both Canadian and international markets. These companies produce zero emission vehicles that serve a variety of HDV and MDV transport niches. Why shouldn't parliamentarians and their staff move about Ottawa on a [Lion M Electric Mini-bus](#), instead of the diesel-powered ones currently in use? The federal government would be setting a better example if ECC's "Envirobus" was, for instance, a [Green Power Motor Company EV Star](#) instead of a gasoline-powered panel van. **A FSDS commitment to have 75% of the government of Canada's MDV and HDV passenger fleets being made up of zero emissions vehicles by 2030¹ would provide a reliable market for these Canadian companies and show real leadership in the transportation sector.** As with all other vehicle types, departments should develop a strategic approach and take actions to decarbonize their fleets.

As we note in our recent report [Will Canada Miss the Bus?](#), GHG emissions are not the only thing that is saved by the purchase of a battery electric bus; serious operational savings in terms of fuel and maintenance are gained as well. The City of Edmonton, [in its study](#) on the adoption of electric buses, estimates that e-bus operational expenses are between 41% to 44% cheaper than their diesel counterparts.

Canadian-made clean transportation does not stop at buses either: Lion Electric just recently launched its [Lion 8 Urban Class 8 Truck](#), which is aimed at moving goods in urban centers or at large facilities like airports emission-free. This MDV transport truck is an example of the Canadian ingenuity that the federal government can support and benefit from through a modern low-carbon procurement process.

[Our research](#) shows that these companies see their primary market as the United States, where local and state governments have thrown their buying power into the decarbonization of the HDV and MDV sector. If the FSDS does not include commitments to procure these vehicles, Canada may see the jobs associated with the production of zero-emissions MDV and HDV vehicles continue to flow south to those markets.

¹ This would include all non-light-duty-vehicle passenger vehicles such as buses, shuttles, etc., barring those vehicles required for the operational mandate of the Canadian Armed Forces, Royal Canadian Mounted Police, or other national security elements.

Key Policy Recommendations

- Use outcome-based procurement policies to stimulate demand for clean technologies and provide domestic markets for Canada’s clean growth sector.
- Undertake a baseline study of the embodied carbon in existing federal government buildings and infrastructure and set future targets for embodied carbon reduction.
- Support a national Lifecycle Inventory Database and associated tools to integrate LCA into government policies and decision-making.
- Explore the purchase of Renewable Energy Certificates as a means of achieving the federal government’s 100% renewable electricity target.
- Set a target of electrifying 75% of the government of Canada’s MDV and HDV passenger fleets by 2030.

MODERN AND RESILIENT INFRASTRUCTURE

As the FSDS clearly states “green infrastructure... protects the natural environment, supports health and resilient communities, drives economic growth, and improves our quality of life.” It also has massive potential to reduce Canada’s GHG emissions and save costs. The following are Clean Energy Canada’s recommendations for how the FSDS can better achieve climate change mitigation and adaptation goals through infrastructure.

INFRASTRUCTURE THAT REALLY MOVES US

In a [recent survey](#) Clean Energy Canada conducted with Abacus Data, a majority of Canadians said that, if it were up to them, electric cars would become the majority of vehicles that consumers drive at some point in the future. And even more (72%) say that this is bound to happen at some point. When asked how long it will take for this shift to occur, 71% predict it will happen in 15 years or less, including 56% who say it will happen in 10 years or less.

Among the factors that would be important in influencing more people to consider an electric vehicle, at the top of the list is knowing that there are more charging stations and that charging time is quick.

Canadian’s don’t just want to drive cleaner cars, they want to ride cleaner transit too. [Recent studies found that 70% of riders say their experience is improved by e-buses compared to old buses, with 64% even saying they would pay more for the privilege.](#) The drivers are happier too, as e-buses reduce their daily exposure to toxic diesel fumes.

The FSDS makes a commitment to support growing demand for electrified transportation options through green infrastructure and its Electric Vehicle and Alternative Fuel Deployment Program, among other things. Specifically, it commits to:

- “Improving the capacity, quality, safety and accessibility of public transit infrastructure throughout Canada, to support the transition to a low-carbon economy and reduce air

pollution and greenhouse gas emissions demonstrating innovative wood-based building products and systems that support greenhouse gas emissions reductions”

- “Ensuring that between 2018 and 2024, 900 electric vehicle charging stations, as well as 15 natural gas and 12 hydrogen refueling stations, are planned, under development or completed under Phase 2 of the Electric Vehicle and Alternative Fuel Infrastructure Initiative”

We applaud the FSDS’s commitment to build out Canada’s network of alternative fueling stations through *the Electric Vehicle and Alternative Fuel Infrastructure Initiative*. This commitment will go a long way to alleviating concerns about available charging infrastructure and further incent the adoption of ZEVs by more and more Canadians.

Building on these commitments, we believe the federal government could do more to promote the electrification of public transit and accelerate the adoption of electric buses.

Working with willing provincial and municipal governments, transit authorities, and businesses, **the federal government should lead the development of a roadmap for increasing the production and use of zero emission medium- and heavy-duty vehicles across Canada—including a specific focus on buses.**

The federal government has invested \$3.4 billion in transit since 2016, and has committed another \$20 billion over the next decade, which will be invested through bilateral agreements with provinces and territories. To ensure this next generation of investment maximizes long-term pollution reduction and cost-savings, it should include a focus on zero-emission public transit fleets and associated fuelling infrastructure, complemented by innovative financing that bridges the higher capital cost of e-buses with the long-term cost-savings they deliver. The accelerated capital cost write-offs for LDV, MDV and HDV ZEV purchases by businesses proposed in Budget 2019 is an example of an innovative financing mechanism that could be explored.

Finally, while electrification will be an important part of reducing Canada’s significant transportation associated emissions, conventional hydrocarbons will continue to be part of the transportation energy mix for sometime. As such, further efforts are needed to reduce the carbon intensity of transportation fuels in Canada. **The FSDS should continue to support efforts like the Clean Fuel Standard and Innovation Challenge Funds, which can help Canadian innovators develop cleaner solutions for heavy transportation and air transport.**

Key Policy Recommendations:

- Create a roadmap for 100% zero-emission bus fleets.
- Support zero-emission public transit fleets and associated fuelling infrastructure, including by exploring innovative financing options that bridge the higher capital cost of e-buses with the long-term cost-savings they deliver.
- Continue pushing forward with the Clean Fuel Standard and Innovation Challenge funds to further develop clean fuels in Canada.

ALL THINGS CONNECTED

Canada's draft FSDS sets out aspirations for a clean and sustainable future and recognizes that the transition to a clean economy is an opportunity for all Canadians. We at Clean Energy Canada are encouraged by this great start.

Now is not the time for meekness when it comes to setting our priorities, goals and targets. Canada must be bold and take the leadership position that Canadians expect: action that is in-line with our position as a top-ten global emitter of GHGs.

We hope these recommendations in this submission will help to further advance the development of the FSDS and guide an interconnected set of policies and actions designed to promote clean growth and deep decarbonization.

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