

Brief for the Standing Committee on Industry, Science and Technology study of the Canadian Response to the COVID-19 Pandemic

Submitted by Energy Storage Canada

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Introduction

Energy Storage Canada appreciates the opportunity to provide feedback to the Standing Committee on Industry, Science and Technology which has been tasked to review the Government of Canada's response to COVID-19.

Energy Storage Canada is the national industry association representing the broad range of companies engaged in the energy storage business across Canada. Our membership represents all players along the energy storage value chain -- technology providers, project developers, investors and operators, electricity distribution companies and NGOs. We represent some of the largest energy companies in Canada as well as some of the smallest and most innovative clean-tech organizations.

The Covid-19 crisis has impacted the energy storage sector across the value chain. Energy storage is a critical ingredient in ensuring a low-carbon economy via electrification. It has the unique ability to extract more value from existing zero-carbon assets, such as nuclear, solar, wind and hydro. It is also unique in its capacity to provide multi-service benefits, including flexible capacity, peak capacity, ancillary services, deferral of additional investments in generation, transmission and distribution, improved reliability of the grid, and empowerment of customers. These optimization services will become even more important as stimulus dollars are invested in energy assets; if stimulus dollars are used to reinforce existing systems, it will hamper Canada's economic recovery and competitiveness, and result in higher ratepayer costs. Critically, it will also slow Canada's transition to a low-carbon economy.

The key issue inhibiting broader deployment of energy storage is risk mitigation and the ability to access capital, made considerably worse due to the Covid-19 crisis. Despite the acknowledged benefits that storage can bring to an electricity system, as a new entrant in the market, energy storage is disadvantaged against traditional market incumbents who are already built and operating.

Our recommendations that follow are a mix of short-term injections and long-term investments, totaling \$1.25B over 5 years, that will help stimulate the energy storage sector across the value chain. If implemented, it will help spur planning, development and construction of energy storage facilities, in front of and behind the meter, that will in turn create employment, provide energy system benefits, GHG reductions and provide ratepayer value across the country.

Recommendations:

- \$1.25B in capital grants, subsidies, financial backstops, or tax credits (in that order) spread over five years
- Similar to what other jurisdictions have in place, this ***Energy Storage Sector Stimulus Package*** would cover:
 - Transmission (Tx) Connected / Grid Scale
 - Distribution (Dx) Connected
 - Remote Communities – Hybrid
 - Behind the Meter – Commercial/Industrial
 - Behind the Meter – Residential
 - Manufacturing and R&D – Domestic Market

Total annual funding by government could follow this model:

Total Annual Funding (*)

2020	\$187,500,000	15%
2021	\$287,500,000	23%
2022	\$362,500,000	29%
2023	\$300,000,000	24%
2024	\$87,500,000	7%
2025	\$25,000,000	2%
TOTAL	\$1,250,000,000	100%

*money can be carried over if not spent in any given year

Total Funding Commitments

TX Connected/ Grid Scale	Dx Connected	Remotes	BTM – C&I	BTM - Residential	R&D / Manufacturing	Total
\$400M	\$200M	\$ 150M	\$ 200M	\$50M	\$250M	\$1.25B

Benefits of Energy Storage Sector Stimulus Package

- This package would provide stimulus to the following economic activities:
 - Project development (legal, financial and project developers)
 - EPC (engineering, procurement, and construction)
 - Operations
 - Manufacturing and R&D
- Depending on the maturity of the market and projects, the level of economic activity will vary. For more mature markets such as BTM C&I, Dx and Tx Connected projects, the stimulus would solidify and expand the supply chain, as currently due to the COVID-19 crisis these projects are stalling due to the financial uncertainty which reverberates all across the value chain.
- For the more nascent markets like serving remote communities and the Residential market, currently there are no incentives to help grow and serve those sectors. This package would help create new economic opportunities for existing and new businesses.
- If the proposed stimulus package were to also focus on the domestic energy storage manufacturing market it could spur growth in the manufacturing of energy storage technologies in Canada, where very few exist today.
- Overall, the following recommendations, if implemented by the Federal Government, will help stimulate economic activity in the energy sector which would include the creation of jobs and related skills in the market that will be around well into the future.

Specific Program Details:

The following could be stimulated via capital grant/subsidy/financial backstop or the creation of an “Investment Tax Credit” specifically for energy storage:

Tx Connected/Grid Scale - \$400 – Enhanced “Energy Storage Investment Program”

As per our pre-Budget submission on the “Energy Storage Investment Program” – an enhanced grant program/subsidy to remove the financial risk associated with building **Tx Connected/Grid Scale** energy storage projects.

Dx Connected - \$200M

A **transmission and distribution** partial grant and partial backstop focused at providing capacity and grid balancing for renewables deployed across the country to eliminate curtailment and constraint issues. These options would also include Power-to-Gas solutions.

Local area reliability and EV charging infrastructure project to be run in conjunction with all LDCs and utilities across Canada. There would be two components to this project. The first is to provide energy storage units at strategic points throughout the distribution grids so that EVs, when charging during peak periods, do not unduly tax the feeder. The second is a home retrofit where homes are provisioned electrically so that a revenue-grade meter is installed at a dedicated EV circuit in the home that the utility can control and measure energy use from. It would be done in such a way that the EV could take or provide power to the home at no additional cost to the ratepayer.

Utility-led distributed **Non-Wires Alternative (NWA) Programs** that would include distribution connected and BTM resources strategically located in utility-identified areas of need for congestion management and/or reliability (see Residential Battery Incentive in BTM category). By incenting LDCs to partner with their unregulated affiliates and the private sector, these projects could scale quickly (navigate regulatory barriers) and ensure costs, risks, and benefits (tapping into the full value stack of storage) are more evenly shared across the system with Bring Your Own Device (BYOD) and Demand Response (DR) programs.

Remote Communities - \$150M

Grant program/subsidy to remove the financial risk associated with building energy storage projects to help remote communities reduce reliance on diesel generation. These energy storage projects may be electricity focused or be based on compressed natural gas storage.

Behind the Meter – Commercial/Industrial Customers - \$200M

Behind the Meter – Residential - \$50M

Grant/subsidy for **Commercial & Industrial Companies to continue to invest in behind-the-meter (BTM) energy storage projects** - backstop measure to cover systems installed and operational on or before May 1st, 2021 to spur short-term economic and employment activity.

A **Residential Battery Incentive (ORBI)** program will rapidly increase the market uptake and penetration of distributed energy resources (DERs), helping to meet local energy needs in an unobtrusive way. Residential storage systems can dramatically increase homeowner energy security – more important than ever with people working from their homes - while making distribution systems more resilient and efficient, when facilitated through an LDC. When controlled in aggregate

(e.g. as a virtual power plant (VPP)), these resources can deliver clean peaking capacity and flexibility, leading to meaningful electricity cost savings to customers and reduced carbon emissions. The program could be expanded to include hybrid functions.

Alternatively, consider government-backed loans to install **BTM energy storage systems** with the principal and interest secured only against the asset and to be paid back as part of a shared savings program. This would a) get money spent immediately on engineering and design work, b) assist businesses with energy costs / competitiveness 1 – 10-year time frame, and c) help ensure these advanced energy assets are carbon free.

R&D and Manufacturing (\$250M)

To be distributed to **grant bodies** that have funded energy storage companies (SDTC, IRAP, OCE, FedDev). Proportion could be prorated based on size of grants already awarded to energy storage companies.

Immediate **50% match of whatever grant** the energy storage company has received from the grant body as a one-time capital injection, intended to provide working capital to prevent layoffs, and in fact turn this into an opportunity to do some hiring of some of the talent that has become available as the result of job cuts.

Federal government should build on its existing **Greening Government initiatives** and establish a program to act as a lead-buyer for energy storage + cleantech projects to serve its load. For example – government offtake in whole or in part for 500MW of combined renewable + storage projects located in Canada to serve aggregate federal loads. This does not require up front investment from the federal government (beyond the above contribution) and would be entirely financed by the private sector with the offtake commitment from the federal government. This would also provide a regulatory sandbox to ensure permitting pathways are clear for these types of projects (which has been an objective of ISED and Clean Growth Hub).

To provide **integration funding** for provincial system operators to upgrade system tools (such as IESO's Dispatch Scheduling & Optimization tool) equipment, processes and system operator capacity building to help enable the full integration of energy storage resources into the electricity system.

We appreciate this opportunity and look forward to your report. If you have any question, please do not hesitate to contact us.

Sincerely,



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