

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

**By: Evolugen (Brookfield Renewable in Canada)**

## **List of Recommendations**

- **Continue to prioritize achieving Canada's climate objectives through investments that support economic recovery and create jobs in the near-term while positioning Canada for a low-carbon future.**
- **Continue to support electrification and the deployment of renewables in Canada consistent with recommendations put forward by Water Power Canada and the Canadian Renewable Energy Association.**
  - **Allow Canada's existing renewable electricity resources to benefit from federal economic recovery measures.**
- **Take action to ignite a new low-carbon hydrogen economy in Canada by supporting policies that encourage the production and use of low-carbon hydrogen and providing funding to encourage investments in this sector. In particular:**
  - **Move forward with implementing a strong Clean Fuel Standard to establish the market conditions for scaling up clean fuel production and use.**
  - **Establish a new program and/or modify existing programs to enable capital investments in commercial scale low-carbon hydrogen production projects.**

## **Body of Submission**

August 7, 2020

The Honourable Wayne Easter,  
Chair of the House of Commons Standing Committee on Finance

### **RE: Pre-Budget Consultation Submission by Evolugen (Brookfield Renewable in Canada)**

Evolugen appreciates the opportunity to provide input to the House of Commons Standing Committee on Finance in advance of Budget 2021.

Evolugen is Brookfield Renewable's Canadian business. Part of the Brookfield Asset Management family, Brookfield Renewable is a global developer, owner and operator of renewable energy resources. Worldwide, Brookfield Renewable businesses and affiliates have a portfolio of over 19,000 MW of installed capacity and approximately \$48 billion in assets under management. In Canada, Evolugen owns and operates 3 wind farms and 33 hydropower facilities in Quebec, Ontario and British Columbia, representing 1,770 MW of installed capacity. Beyond our existing assets, we continuously evaluate opportunities to expand our role across Canada as an investor, developer and owner/operator of low carbon and renewable assets.

Budget 2021 comes at a particularly uncertain time for Canada and the world. Canadian governments have acted swiftly in response to the health and initial economic impacts of the coronavirus pandemic but must now turn their attention to Canada's longer-term recovery. In so doing, it is crucial that we stay focused on our climate change objectives. The Government has laid out ambitious targets to reduce GHG emissions 30% by 2030 and achieve net-zero emissions by 2050. The current situation provides a unique opportunity to make investments that will help to revitalize the Canadian economy while positioning the country for a low-carbon future.

A global energy transition is underway shaped by evolving technology, customer preferences, and policy. This transition presents both challenges and opportunities. As an energy leader, Canada is well positioned to succeed in the future, given its wealth of experience, skilled workforce, existing energy infrastructure and network, and strategic location with access to growing markets. However, repositioning our economy for the low-carbon future is critical to maintain Canada's leadership.

### ***Clean Electricity***

Canada is blessed with an abundance of natural resources, including an enviable supply of clean electricity. In the years to come, clean electricity will be the foundation of Canada's decarbonization efforts, with 82% of electricity generation already non-emitting and vast opportunities for electrification across the economy. In this regard, we support the recommendations of Water Power Canada (WPC) and the Canadian Renewable Energy Association (CanREA) for targeted actions to support further electrification and deployment of renewables in Canada.

At the same time, it is important to ensure that reinvestment occurs in Canada's existing stock of renewable electricity resources. These resources require millions of dollars of investment annually to maintain their reliable and safe operation. In the case of hydropower resources, which represent 60% of Canada's electricity generation, maintaining these long-lived, flexible resources is also crucial to integrating additional intermittent renewables onto the grid. Evolugen alone has identified nearly \$200 million in capital expenditures across dozens of projects within its portfolio over the next 5 years. As such, **we recommend that the Government allow existing renewable electricity resources to benefit from any economic recovery measures targeting the electricity sector** in order to maintain Canada's clean electricity leadership for the decades to come.

### ***Emerging Opportunities – Hydrogen***

Low-carbon hydrogen is emerging globally as a pathway to reduce emissions, particularly in instances where achieving emissions reductions through other means is challenging. Certain forecasts project that global hydrogen demand will increase from approximately 73 million tonnes per year today to over 500 million tonnes per year by 2050<sup>1</sup>. Further, while almost all hydrogen today is produced using natural gas (generating significant GHG emissions), it is expected that most future production will employ low- or non-emitting production processes<sup>2</sup>.

Canada is ideally positioned to participate in this emerging industry. Domestically, there are near-term opportunities to reduce the carbon intensity of our natural gas distribution network through hydrogen blending, to use low-carbon (mainly renewable) hydrogen as a feedstock in industrial process, and to use hydrogen in the production of alternative fuels that can be blended with gasoline or diesel. Longer term, fuel cell vehicles represent an alternative to electric vehicles and may be more appropriate for long-range and heavy-duty applications. Internationally, there are opportunities to supply Canadian technologies and expertise abroad, as well as export Canadian produced hydrogen.

The Government has taken important steps to realizing this vision, most recently by working towards the completion of a federal hydrogen strategy. Several provinces are also undertaking similar strategy exercises. In the private sector, multiple companies have identified opportunities to build large-scale hydrogen production facilities, including Evolugen, which is currently advancing a project to build an up to 200 MW hydrogen electrolyzer at its Masson, Quebec hydroelectricity facility leveraging its existing electricity infrastructure.

However, challenges remain in getting low-carbon hydrogen production projects off the ground. Among these are the high capital costs, which although declining with technological improvement, are still significantly more expensive than traditional natural gas steam methane reforming. High electricity costs are also an obstacle to electrolyzer projects that use electricity and water to produce hydrogen. Together, these factors mean that low-carbon hydrogen produced today is more expensive than its fossil-fuel based counterpart. A fact that dissuades fuel users from switching to low-carbon hydrogen unless there is a clear regulatory incentive to do so. Beyond the cost of producing the commodity, hydrogen is also challenging to transport, requiring significant compression or liquefaction due to its low density. This has

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<sup>1</sup> Hydrogen Council.

<sup>2</sup> Examples include steam methane reforming with the addition of carbon capture technology or electrolysis, in which hydrogen is produced from electricity and water.

historically meant that hydrogen is used close to where it is produced. Transportation barriers will need to be overcome for wide-spread hydrogen adoption in existing and new end-use applications.

Many Governments worldwide are supporting the deployment of low-carbon hydrogen production projects with an eye towards getting in on the ground floor of this emerging industry and understanding that this support is necessary to drive future cost declines. At the same time, forward-thinking jurisdictions are creating strong market and regulatory signals for fuel users to switch to cleaner alternatives through the adoption of Low Carbon Fuel Standards.

A similar opportunity exists for the Government of Canada to ignite a new low-carbon hydrogen economy in Canada by supporting policies that encourage the production and use of low-carbon hydrogen and providing funding to encourage investments in this sector.

Ensuring Canada has a clear, straightforward and responsive policy and regulatory framework for hydrogen production, distribution and end-use is crucial to driving investment in this space. The Government of Canada can show leadership in this area by implementing the necessary frameworks within its jurisdiction and working collaboratively with other levels of government on provincial and local requirements. In particular, **we recommend that the federal government move forward with implementing a strong Clean Fuel Standard (CFS)**. The CFS will provide the market signal to fuel users to buy clean fuels and create sustainable revenue streams for clean fuel producers that can be used to finance project investments.

In the near-term, funding will also be required to offset the capital costs of hydrogen projects. In the current circumstances, this provides a unique opportunity to deliver economic stimulus and create jobs while positioning Canada for an emerging sector. No other energy opportunity provides nationwide benefits comparable to hydrogen, from Western Canada with its abundant natural gas resources and carbon capture expertise to Eastern Canada with its vast hydroelectricity resources. As such, **we recommend that that Government establish a new program and/or modify existing programs to enable capital investments in commercial scale hydrogen production projects**. Federal support for these projects will act to unleash private sector investment and catalyze future development.

Evolugen would be pleased to provide more information on our submission to the Committee. Thank you again for the opportunity to provide feedback.