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Re: Development of National Water Security Strategy

WaterPower Canada (WPC) is pleased to provide comments regarding the development of a National Water Strategy for Canada.

As the national trade association representing Canada's hydropower industry—including 70 public and private power producers, equipment manufacturers, and engineering firms—WaterPower Canada's members represent over 95% of Canada's installed waterpower capacity and operate more than 600 facilities nationwide.

Hydropower alone provides more than half of Canada's electricity, forming the backbone of one of the cleanest and most reliable electricity grids in the world and enabling the integration of variable renewable energy sources. Hydro is not just one source of electricity, among others. Hydroelectric assets provide firm, non-emitting generation, grid reliability services, long-duration energy storage, and system flexibility that will be essential as Canada works toward the objective of doubling electricity infrastructure by 2050. Canada's hydropower fleet is also cost-effective, with the oldest facilities in Canada generating electricity for over a century.

As noted in the Public Engagement document issued by the Agency, provincial and territorial governments have primary responsibility for water within their borders. For our industry, provincial water resources legislation and licensing are also the primary vehicles that govern the operation of Canada's hydroelectric facilities. Facilities operating on international waterways, such as the Columbia River and the St. Lawrence River, are notable exceptions.

At the federal level, the hydroelectric industry is subject to water management conditions outlined in the *Fisheries Act.*

A similar crossover in jurisdiction exists for effluent standards, where provincial water resources legislation and regulations co-exist with federal fish-related standards and requirements.

Given the shared jurisdiction between provincial/territorial and federal authorities, we agree with the Agency's premise that a federal water security strategy must be built on a foundation of co-operation, collaboration, and partnership.

We would therefore expect the federal government's approach to mirror that used in other initiatives, such as the National Electricity Strategy, where the federal government provides a supporting and enabling role.

Considering these overarching comments, following are our comments in relation to the survey questions:

1. What water-related challenges and opportunities do you see or expect in your region, community, and/or sector?

   For the hydroelectric sector, increased variation in precipitation and changes to average precipitation arising from climate change represent major challenges. At the same time, new forecasting tools and the use of artificial intelligence to improve inflow and electricity demand forecasting and plant dispatch represent new opportunities for our industry.

   Given our industry's requirement to store and manage water releases, stakeholders sometimes look to our industry to mitigate the effects of climate change through changes to water management. This is not likely a reasonable outcome, as climate change is also impacting our sector, and operators must retain the ability to meet the energy requirements of the markets they serve.

2. How well does the following definition of water security reflect WPC's understanding of the concept:

   > *"Our collective capacity to safeguard and sustain freshwater ecosystems; support reliable access to an adequate supply of safe, clean water for human health and well being, and economic security; and to manage water-related risks—today and for future generations."*

   While we believe this definition is fair, it may be difficult to achieve in practice, whether as an industry or collectively with the network of water-related industries and stakeholders.

   As noted above, it is unlikely that individual or collective action will mitigate the effects of climate change on Canada's freshwater ecosystems. Our ability to offset the impacts of drought, changes in water temperature, and other climate-related effects is limited by our requirement to store water for peak demand periods, and releasing additional water during drought conditions would likely compromise our ability to have water available for peak demand periods.

   It is therefore likely that climate change will require freshwater ecosystems to adapt to changing conditions. A water security strategy is not likely to change summer water temperature levels in rivers and streams, nor is it likely to undo an extended drought. A strategy could help focus attention on fish species and populations that are better able to cope with these changed conditions.

   Similarly, adaptation for human populations should be highlighted in the strategy as well. Supporting the efficient use of our precious resource should be a highlight in the strategy.

   It is also not likely that water-related risks will be 'managed' but rather their effects will be mitigated through adaptation. We therefore suggest adjusting the definition as follows:

   > *"Our collective capacity to safeguard and sustain freshwater ecosystems; support reliable access to an adequate supply of safe, clean water for human health and well being, and economic security; and to mitigate water-related risks through adaptation —today and for future generations."*

3. Do you know any initiatives or examples of efforts that are helping to improve water security in Canada?

   Hydroelectricity producers safeguard the freshwater reserves that are required to produce electricity, frequently across watersheds. Our industry's approach to production planning prioritizes the management of water in our reservoirs to avoid spillage and to maintain reserves for production during dry seasons and periods of drought.

   Also, through continuous improvements and refurbishments, operators are taking steps to produce more electricity from their existing facilities. This enables capacity expansions without significant impact on the water resources that drive them.

4. Is there anything we haven't covered that you feel is important to consider regarding water security in Canada?

   As a shared resource used in multiple sectors, regions, provinces, and communities, decisions regarding water usage require balanced decision making. Consequently, provincial and territorial governments will need to carefully weigh the needs of various users when making water management decisions.

   The Government of Canada can enhance water security through supporting adaptation to climate change, technology development and deployment, and through encouraging the efficient use of water by all Canadians.

We thank the Agency for this opportunity to provide our comments and feedback, and we would be pleased to discuss this submission or any other item of interest at your convenience.

Sincerely,



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Lorena Patterson
President and CEO