

Water security needs water intelligence

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Sean
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Opinion



In Canadian cities, new homes and highways crowd out wetlands and industrial expansion takes a toll on already diminishing groundwater supplies. Large prairie cities reliant on snowmelt from the Rockies are often scrambling to cope with dwindling supplies,

all while infrastructure ages and human population expands. As our forests burn and permafrost thaws in the North, water quality is degraded, challenging our municipal works and Indigenous communities who have long struggled to secure clean drinking water. Abandoned, existing, and future mines that support energy transition have far-reaching impacts on our water that we struggle to balance with the economic opportunities they provide. All of this is occurring while recent rumblings from our American neighbours about diverting Canadian water south leads to heightened anxiety. Golf courses in the deserts of Arizona and Nevada need to be kept green.

You cannot manage what you do not measure, and we simply measure less about freshwater than we used to in Canada. This decline in our water intelligence has occurred in concert with the rise of digital data and automation, with many different stake-

holders recording, storing and documenting data in different formats that are often challenging to navigate and interoperate. The lack of coordination is diminishing the power of the freshwater data we do collect and squanders resources. This can't happen considering the challenges we face.

There are, however, signs of hope with new developments that may lead to improved decision making and water security for Canadians. The newly established Canada Water Agency is investing \$650-million over 10 years in the Freshwater Action Plan. Ecosystem initiatives have been identified, yet these regional projects have limited potential to support long term data collection and target critical yet arguably narrow priorities. There are emerging plans to coordinate those who hold water data, yet the process and pathway is far from clear and many years away. In 2023, the Canadian Foundation for Innovation boldly supported the

Global Water Futures Observatories project, a trusted pan-Canadian network of environmental monitoring supersites, deployable systems such as aerial and underwater drones, and cutting-edge laboratories all within a shared data management system to support rapid decision making for water management.

In Yukon, where I focus my research, Wolf Creek Research Basin is now part of Global Water Futures Observatories, has 32 years of continuously collected water and climate data, and provides dozens of users' critical real-time information while documenting the pace of change. This, and other long-term data, are the foundation upon which numerical water models guide future planning and risk assessments. While Global Water Futures Observatories provides exciting opportunities, the requirement to find 60 per cent of its budget through matching funds puts this program at risk of closing in 2025. This would mothball almost \$100-million of

new equipment, release 50 highly skilled staff who operate these observatories and manage their freely available data, and most concerning, degrade Canada's ability to secure a sustainable water future in an era of rapid environmental and geopolitical change. We rarely disagree about the critical value of water in sustaining our collective prosperity. Now is the time for provincial and federal bodies to work together to support existing critical infrastructure to secure this investment in Canada's water future.

Much of Canada's historical strength in environmental management was in the collection of high quality, comprehensive and actionable data for decision makers. We need to coordinate and fund water observations and research to restore our strength and prepare for a future that will require all the water intelligence we can muster, so that we can defend our water security against challenges posed by the climate, our activities, and from our neighbours.

Dr. Sean Carey is a professor in the school of earth, environment and society at McMaster University and the acting director of the McMaster Centre for Climate Change. He has a particular interest in long-term research projects, cold environments, and working with companies and communities to better steward water resources.

The Hill Times

WATER POWER | CANADA'S ELECTRICITY POWERHOUSE

Hydropower is a key reason why Canada's electricity grid produces over 80% of its power from renewable energy. Canada has harnessed the strength of our water resources to produce electricity for nearly 150 years. This non-emitting power source balances intermittent power sources like solar and wind power and allows our grids to work reliably, preventing surges or shortfalls in our national power supply.

Provinces that took advantage of their natural watersheds and built out hydropower facilities are largely protected from rising fuel prices and the impacts of global markets on commodities like oil and gas.

Furthermore, thanks to the installed capacity of hydropower, Canada has been able to make progress towards its clean energy goal of reducing national emissions by 35 per cent, by 2035.

By using our natural landscape to generate dispatchable power, Canadians will have predictable energy prices for years to come and use hydropower to offset rising prices of other generation sources.

REGULATORY ALIGNMENT IS CRUCIAL TO SUPPORT THE RAPID CLEAN ENERGY EXPANSION OUR COUNTRY NEEDS

Achieving growth in Canada's energy production to meet future demand will require unprecedented, concerted, and sustained efforts to build out our grids across the country. While the electrification process will take time, the need to begin is urgent and concrete policy actions are required today.

Canada's current regulatory environment is not conducive to meeting these challenges.

Canada has tens of thousands of megawatts of hydropower potential, but complex federal regulatory processes, many of which duplicate requirements at the provincial level, hinder the progress of expansions and refurbishments. These requirements increase costs to Canadian families and businesses by hundreds of millions of dollars.

WaterPower Canada members are reinvesting in their existing assets and pursuing new hydropower and pumped storage facilities to meet growing demands for reliable generating capacity. **To incent these investments and allow rapid growth of clean electricity generation and transmission, federal policies need to be aligned across the whole of government.**

Currently, processes under the *Fisheries Act*, the *Migratory Birds Regulations*, and the *Impact Assessment Act* take more than half a decade to complete and add to regulatory uncertainty. Submissions for routine and small footprint activities are often met with demands for 'more study' and 'more detail' instead of specific guidance towards approval. This runs counter to our stated clean energy targets.

POLICY MAKERS NEED TO TAKE ACTION NOW

Federal and Provincial governments need to urgently take concrete policy actions to achieve meaningful progress to meet Canada's electricity needs:

- 1. Develop clear strategies** to drive the electrification of Canada's economy, including incentives, codes, and standards.
- 2. Eliminate constraints and duplication in programs** to expedite investment in clean electricity projects.
- 3. Harmonize environmental assessment, permitting processes and policies** and explicitly recognize the overarching importance of renewable energy projects. Find ways to reduce clean energy project approval timelines by half.

WaterPower Canada and its members are committed to responsible development and to work with governments, Indigenous groups, and communities to power Canada to a cleaner future.

We must start by making our regulatory framework match our goals to create jobs and increase clean energy production.

CANADA'S COMPETITIVENESS DEPENDS ON IT.

WATER POWER IS HERE TO LEAD THE CHARGE TO A CLEAN ENERGY FUTURE. LEARN MORE AT WATERPOWERCANADA.CA