Winds of change: opportunities and risks surrounding hydrogen projects in Canada

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Background

On August 23, 2022, Canada and Germany entered into a joint declaration of intent with respect to investing in hydrogen projects and satiating the burgeoning global demand for clean and renewable energy. Specifically, this “hydrogen alliance” foresees the two countries investing in hydrogen, establishing a "transatlantic Canada-Germany supply corridor" and exporting hydrogen by 2025. This agreement comes on the heels of a recent outpour of various governmental plans and strategies to invest in hydrogen, such as the federal Hydrogen Strategy for Canada and B.C.’s Hydrogen Strategy, as well as private ventures such as the Air Liquide green hydrogen site in Québec, which opened in 2021.

During the announcement of the agreement, German Chancellor Olaf Scholz emphasized Germany’s interest in the wind corridors in Eastern Canada and the potential for wind farms – a type of green hydrogen. Green hydrogen is a form of hydrogen that has significantly lower carbon emissions than other forms of hydrogen, such as grey hydrogen. Historically, green hydrogen has not been prevalent, in large part due to the high cost of production. However, as a result of increasing governmental interest and the decreasing cost of necessary technologies (*e.g.* electrolyzers), international and Canadian companies have an unprecedented opportunity to develop green hydrogen projects in Canada.

In his speech, Prime Minister Justin Trudeau also pronounced that the new hydrogen projects will be subject to the rigours of Canada’s regulatory regime, in order to ensure the long-term success of the hydrogen alliance. This regulatory responsibility is shared by both the federal government and the provinces. Interested companies should thus be aware of the regulatory landscape across the Canadian provinces and federally, to ensure their investments proceed with minimal disruption.

Risks

Environmental

Canada and its provinces have relatively strict environmental standards, with each jurisdiction having its own specific rules and agencies relating to the enforcement of breaches. For example, Newfoundland and Labrador has approximately 24 separate government agencies that may require approval for projects relating to the environment. As a result, prospective investors should prepare for potentially lengthy reviews and approval processes. The Piapot Wind Farm Project located in the Piapot Indian Reserve 75 (Saskatchewan), for example, has remained in progress since its start date in February 2020 while it currently seeks public commentary pursuant to the regulatory rules.

Water disruption

Given that many hydrogen projects involve the use and/or disruption of water (*e.g.* electrolysis projects), project proponents must be aware of the various obligations relating to water. While every province has their own regulatory regimes for water usage, a snapshot of the British Columbia rules offer an example of the large scope of water-related approvals required for water-based hydrogen projects.

In British Columbia, projects involving the use, diversion, or storage of water (including groundwater) require:

- that a person diverting water make "beneficial" or efficient use of the diverted water, and every three years, submit a declaration to the Comptroller for Water Rights that the person has indeed made beneficial use of the water;
- various regulatory licenses and certificates for the use, diversion or storage of water;
- use and/or change approvals by the Ministry of Forests, Lands and Natural Resource Operation for water users who wish to make changes in and about a stream or wetland, or divert or use water from a stream; and
- proof of authorization to use Crown land should the project proponent wish to use Crown land with a commercial or power-related purpose as a part of its water project (or if there is a potential of flooding onto Crown land).

Investors should also prepare for future amendments to the *Water Sustainability Act*, S.B.C. 2014, c. 15 to account for hydrogen production.

Environmental Assessments

Environmental project proponents are also required to properly apply and liaise with the relevant environmental assessment agencies (federal and/or provincial), and follow any conditions they set. For projects taking place on federal land or which are otherwise designated by the federal Minister of the Environment, project proponents are governed by the *Impact Assessment Act*, S.C. 2019, c. 28, c. 1 [*IAA*]. Under the IAA, proponents are required to provide proposals of projects to the Minister, engage with the general public and consult affected Indigenous groups, and follow any conditions set by the Minister following an impact assessment (if required). Federally, proponents of renewable energy projects may also be subject to additional requirements set by the National Energy Board.

Each province throughout Canada also has their own set of environmental assessment rules, for projects under provincial jurisdiction. In British Columbia, for example,

environmental projects are governed by the *Environmental Assessment Act*, S.B.C. 2018, c. 51. A project proponent is responsible for bringing a reviewable project to the attention of the Environmental Assessment Office. If the Executive Director considers that a project may have significant adverse environmental, economic, social, heritage or health effects, the Executive Director may issue an order requiring the project to undergo an environmental assessment before the project may proceed.

If an assessment is required, the Environmental Assessment Office will review the application, which may include engagement with scientific professionals, Indigenous groups, the public, local governments, and federal and provincial agencies. Based upon the information received during the review, the Environmental Assessment Office may propose conditions for the environmental assessment certificate, or terminate the project altogether. If an environmental assessment certificate is issued, the proponent must abide by the conditions set out therein for the entire life of the project, unless otherwise released from such conditions.

Animals, plants and noise

Hydrogen projects, particularly wind power and other green hydrogen projects, which affect animal life, plant life and cause noise to nearby residents are required to comply with environmental rules surrounding the same. In Ontario, for example, renewable energy projects which cause serious harm to human health (by way of noise) and/or serious and irreversible harm to plant life, animal life, or the natural environment may be prohibited or require significant alterations.

For example, a major wind energy project in Ontario was initially cancelled in 2019 due to concerns held by the Minister of Environment that the project would cause serious and irreversible harm to a certain species of bats. However, this finding was ultimately overturned by the Ontario Superior Court of Justice the following year which found that the harms to the bats were negligible. In Alberta, another major wind farm was approved by the Alberta Utilities Commission, but was subjected to a significant number of conditions, following complaints by a group of 170 neighbouring landowners and companies about noise, view disruption and shadow flicker, bird mortality, and interference with crop spraying. The wind farm was thereafter required to make alterations to its project with respect to road usage, consultation with neighbours about shadow flicker, shutting off turbines when requested by farmers during times of crop spraying, *etc.*

Additional requirements

Prospective investors may also be subject to a number of additional requirements, depending on the specific details of their projects. For example, legislation and regulations relating to oil and gas and transportation of dangerous goods (which governs the transportation of hydrogen fuel cells) may be applicable.

Lobbying

Organizations investing in green hydrogen projects in Canada should also be aware of lobbying rules if they wish to engage with officials from the federal or provincial governments about their potential projects. Companies meeting with government

officials are required to register with the relevant lobbying registries (*i.e.* the federal lobbying registry or the relevant provincial registry) typically within 10 days to two months of the date that they arrange to meet a government official to discuss their hydrogen projects. Thereafter, companies in some jurisdictions may be expected to maintain their registrations on a monthly basis for up to six months..

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