Quebec Hydroelectricity Export Restrictions : Compliance vis-à-vis Article XX GATT

Emma Robert

Faculty of Law,

McGill University, Montreal

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TABLE OF CONTENTS

i. **Conditions for GATT compliance of hydroelectricity export restrictions**
    1. Condition 1: A critical situation
        a. Requirements of GATT exception clauses
        b. Policy recommendation
    2. Condition 2: No reasonable= alternatives
        a. Requirements of GATT exception clauses
        b. Policy recommendation
    3. Condition 3: An environmentally conscious population
        a. Requirements of GATT exception clauses
        b. Policy recommendation

ii. **Negotiating for policy space under international trade law**
    1. Inadequacy of Article XX of the GATT 1994 for (hydro)electricity trade matters
        a. The purpose of Article XX of the GATT 1994
        b. Quebec policy making space
    2. Negotiating for policy space under international trade law
        a. At WTO level
            i. Trade law rationale
            ii. Sustainable development
            iii. Energy security
        b. At CUSMA level
            i. The question of proportionality
            ii. Side-letter on energy
            iii. Widening the interpretation of Article XX

Abstract (English)

Quebec's ambition is to become the "battery" of Northeast America, positioning itself as the leading supplier of clean energy through increased hydroelectricity exports. This ambition, however, is challenged on many fronts. Quebec's ability to meet both domestic and export demand is empeded by competing federal objectives, such as extending Hydro-Quebec's grid towards other domestic provinces, and concerns about water resource sufficiency. In this context, I examine in this thesis whether Canadian authorities can restrict hydroelectricity exports to prioritize domestic supply in accordance with international trade law, specifically under the General Agreement on Tariffs and Trade (GATT) 1994. By analyzing Article XI:1 of GATT, I argue that export restrictions would likely violate the prohibition on quantitative restrictions, and that tentative justifications to such restrictions based on Article XI:2(a) are unlikely to be successful, as the WTO may not recognize a critical shortage of hydroelectricity. Consequently, in the absence of a specific energy security exception, Canada must justify the GATT inconsistency of hydroelectricity export restrictions under one of the grounds of Article XX: the GATT's environmental exception clause. Specifically, I argue that Canada could seek to justify the inconsistency under Article XX(g) and XX(j), though this is challenging because hydroelectricity does not easily fit within the exceptions. To have the best chance at successfully justifying restrictions under Article XX, I recommend that the Quebec government specifies the conditions under which it can ban exports of hydroelectricity, particularly by explicitly citing low water levels in its recently enacted Bill 69. Finally, given the difficulties associated with fitting hydroelectricity into Article XX exceptions, I advocate that Canada negotiates an explicit energy security exception at the international level, especially during CUSMA's 2026 review.

Résumé (Français)

Le Québec aspire à devenir la « batterie » de l'Amérique du Nord-Est en se positionnant comme le principal fournisseur d'énergie propre de la région grâce à l'augmentation des exportations d'hydroélectricité. Cependant, cette ambition rencontre des obstacles majeurs. Les objectifs fédéraux concurrents, tels que l'extension du réseau d'Hydro-Québec vers d'autres provinces domestiques, ainsi que les préoccupations concernant la suffisance des ressources en eau, compliquent la capacité du Québec à répondre aux demandes intérieures et à l'exportation. Dans ce contexte, cette thèse examine si les autorités canadiennes peuvent restreindre les exportations d'hydroélectricité pour privilégier l'approvisionnement domestique, conformément au droit commercial international, notamment l'Accord Général sur les Tarifs Douaniers et le Commerce (GATT) de 1994. En analysant l'article XI:1 du GATT, cette thèse soutient que les restrictions à l'exportation violeraient probablement l'interdiction des restrictions quantitatives. Les tentatives de justifier la conformité de telles restrictions en vertu de l'article XI:2(a) sont peu probables, car l'OMC pourrait ne pas reconnaître une pénurie critique d'hydroélectricité. Par conséquent, en l'absence d'une exception spécifique pour la sécurité énergétique, le Canada devra justifier l'incompatibilité des restrictions à l'exportation d'hydroélectricité avec le GATT en se fondant sur l'une des exceptions prévues à l'article XX, connu comme la clause d'exception environnementale du GATT. Plus précisément, cette thèse soutient que le Canada pourrait tenter de justifier cette incompatibilité en vertu des articles XX(g) et XX(j), bien que cela soit difficile car l'hydroélectricité ne s'aligne pas facilement avec les exceptions prévues. Pour maximiser les chances de succès, le gouvernement du Québec devrait préciser les conditions sous lesquelles il peut refuser les exportations d'hydroélectricité, en citant notamment explicitement les niveaux d'eau bas dans le récent projet de loi 69. Enfin,

compte tenu des difficultés associées à l'intégration de l'hydroélectricité dans les exceptions de l'article XX, cette thèse recommande que le Canada négocie une exception explicite pour la sécurité énergétique au niveau international, en particulier lors de la révision de l'Accord Canada-États-Unis-Mexique (ACEUM) prévue en 2026.

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Abbreviations

GATT	: General Agreement on Trade and Tariffs
US	: United States of America
NAFTA	: North American Free Trade Agreement
CUSMA	: Canada-United States-Mexico Agreement

I. Introduction

Quebec's ambition is to become the "battery" of Northeast America,[1] positioning itself as the leading supplier of clean energy in the region through increased exports of hydroelectricity down south. However, this goal is challenged on many fronts. First, there are competing federal objectives, such as the extension of Hydro-Quebec's grid towards the Atlantic Loop rather than Northeast America, which could require Quebec to compromise between exporting to Northeast America and supporting national carbon-neutral goals. Notably, under the *Canadian Energy Regulator Act 2019*, the federal government can deny permits or certificates for hydroelectricity exports. Second, there is a question of whether the province has enough water to cater to both domestic and Northeast American demand at a time when both are expected to rise sharply. Indeed, Quebec is currently facing the end of its hydroelectricity surplus era, expected to occur as soon as 2027.[2] As Quebec demand for electricity is expected to grow,[3] the province will need to make difficult choices about the allocation of its hydroelectricity at times of low water levels. Under Quebec's *Loi sur l'exportation d'électricité*, the provincial government must authorise electricity exports.

In this context, this thesis will examine whether Canadian authorities, including both the federal and Quebec governments, can restrict hydroelectricity exports to prioritize domestic supply, in accordance with international trade law. As will be demonstrated, exercising the implicit power to refuse authorisation for hydroelectricity exports would likely violate Article

[1] Government of Québec, "2030 Plan for a Green Economy: Framework Policy on Electrification and the Fight Against Climate Change" at 7, online (pdf): *Government of Québec* <https://cdn-contenu.quebec.ca/cdn-contenu/adm/min/environnement/publications-adm/plan-economie-verte/plan-economie-verte-2030-en.pdf?1635262991>

[2] Gabriel Giguère, *Quebec's Uncertain Energy Future* (Montreal Economic Institute, May 2023), online: <https://www.iedm.org/quebecs-uncertain-energy-future/>; Hydro-Québec, *Strategic Plan 2022-2026* (2022) at 9, online (pdf): <https://www.hydroquebec.com/data/documents-donnees/pdf/strategic-plan.pdf?v=2022-03-24>

[3] Hydro-Québec, Strategic Plan 2022-2026 (2022), online (pdf): <https://www.hydroquebec.com/data/documents-donnees/pdf/strategic-plan.pdf?v=2022-03-24>

XI:1 of the General Agreement on Tariffs and Trade (GATT) 1994, which aims to minimise quantitative restrictions between trading partners. In such a scenario, Canadian authorities would need to argue that their export restrictions on Quebec hydroelectricity: (1) comply with Article XI:1 of the GATT 1994 because they fall under the scope of Article XI:2(a), or, (2) that their inconsistency with Article XI:1 is justified under the GATT's exception clauses, particularly Article XX.

I contend that Canada is unlikely to successfully justify hydroelectricity export restrictions as compliant with the GATT under Article XI:2(a), which requires such measures to be temporary and aimed at alleviating a critical shortage of an essential product. The WTO is unlikely to recognize a 'critical' shortage, given that Canada has alternative options to increase its electricity supply, such as developing other energy sources. As a result, any restriction on Quebec's hydroelectricity exports would likely violate Article XI:1 of the GATT. In the absence of a specific energy security exception, Canada would therefore be compelled to justify the inconsistency of its export restrictions under one of the grounds provided in Article XX, the GATT's environmental exception clause.

I will argue that Canada could first attempt to justify the GATT inconsistency of export restrictions under Article XX(g), claiming that they relate to the conservation of an exhaustible natural resource and that such restrictions are enacted in conjunction with restrictions on domestic production or consumption of that resource. In essence, I will argue that hydroelectricity can be considered an 'exhaustible natural resource' because it is intrinsically linked to water, which can be considered 'exhaustible' rather than renewable, if the extraction rate exceeds the replenishment rate, which has been the case in recent years.

I will also argue that Canada could justify export restrictions under Article XX(j) if they are essential for the acquisition or distribution of products that are in local or short supply. A significant challenge for Canada will to prove that no WTO-consistent (or less WTO-

inconsistent) alternatives exist to achieve the desired level of supply protection. This thesis contends that the unique nature of hydroelectricity means that no other alternatives can provide electricity as reliably or as sustainably. Measures such as constructing new dams, developing new energy sources, or importing electricity are either insufficient or impractical for meeting the province's needs as effectively and promptly as domestic hydroelectricity.

Finally, I acknowledge that there is always the risk that the WTO argues that export restrictions are not an optimal solution and that alleviating a low supply of hydroelectricity is better achieved through other alternatives, including increased cross-border electricity trade. Therefore, given the challenges associated with justifying hydroelectricity export restrictions under Article XX's general exceptions, I will argue that it is urgent for Canada to negotiate for the inclusion of an energy security exception at the WTO level. This would provide Canada with greater policy options to protect its natural resources under international trade law. In so doing, Canada could position itself as a global leader by defining the legal framework for energy in the 21st century.

The underlying aim of this thesis are twofold:

First, the area of electricity trade law, and especially hydroelectricity trade law, is under-researched, and this thesis aims at filling this gap by providing a comprehensive analysis of Quebec's unique situation. Notably, electricity trade disputes have not yet been addressed at the WTO level, but with growing global energy concerns, our analysis is crucial for uncovering critical questions the WTO panel will soon need to address. Specifically, in the context of hydroelectricity, I seek to demonstrate how Canada could intelligently affirm the policy space accorded by Article XX to protect its hydroelectric resources. Being one of the first to consider the application of Article XX in the context of (hydro)electricity, I hope to pave the way for fresh insights and discussions in international trade law.

Second, I argue that the Quebec government, in its recently tabled Bill 69, *An Act to ensure the responsible governance of energy resources and to amend various legislative provisions* (hereinafter referred to as "Bill 69"),[4] should specify the conditions under which it can refuse exports of hydroelectricity, notably by explicitly citing low water levels. In so doing, this research aims at providing clear guidance for hydro-rich countries to shape their policies to manage resources effectively while abiding to the GATT's Article XX environmental exception.

To this aim, my analysis is set as follows:

In Chapter 1, I start by examining Quebec's hydroelectricity trade policy, that is to become the "battery" of Northeast America. I will discuss the strategy's expected benefits, before explaining how it might be limited by the exhaustible nature of Quebec's water resources essential for hydroelectricity production. Indeed, without enough water available, Quebec might not live up to its promise to deliver hydroelectricity to *both* foreign and domestic consumers in the future. In such a case, as I shall elaborate, Quebec or the federal Canadian government could consider prioritising the delivery of hydroelectricity to domestic consumers by imposing restrictions on exports – but such a scenario could result in Canada violating Article XI:1 of the GATT 1994, which prohibits quantitative restrictions.

In Chapter 2, I will analyse the challenges that Canadian authoritites might face in attempting to justify restrictions on exports of Quebec hydroelectricity under the GATT's exception provisions. First, I will examine the difficulties in justifying compliance with Article XI:2(a). Next, I will explore how Canadian authorities could justify a violation of Article XI:1 under Article XX, specifically Article XX(g) and Article XX(j), and how these clauses could

[4] Bill n° 69: *An Act to ensure the responsible governance of energy resources and to amend various legislative provisions*, 1st Sess, 43th Leg, Quebec, 2024 (presented 6 June 2024)

apply to (hydro)electricity trade. The process of justification under Article XX is particularly challenging because hydroelectricity, with its unique characteristics, does not easily fit within the exceptions provided by this article.

Finally, in Chapter 3, I will argue that to overcome these difficulties and enact hydroelectricity export restrictions in compliance with the GATT, Canadian authorities must portray themselves as an environmentally conscious nation for whom the restrictions are the only viable solution to address a critical situation. I further contend that the Quebec government should specify the conditions under which it can refuse exports of hydroelectricity, particularly by explicitly citing low water levels, in its recently enacted Bill 69. Finally, given the uncertainty of whether such arguments would be accepted at the WTO level, I will argue that it is urgently necessary for Canadian authorities to negotiate for explicit policy space at the international level to safeguard their sovereignty over natural resources, especially during CUSMA's forthcoming review in 2026.

II. Chapter 1: Quebec's hydroelectricity trade policy

In this Chapter, I will lay out the nature and implications of Quebec's hydroelectricity trade policy. There are two limits to Quebec becoming the "battery" of Northeast America : (1) competing federal objectives and (2) low water levels in the province restricting the amount of hydroelectricity available for export. What if Quebec was compelled to restrict hydroelectricity exports to Northeast America? Would such an action be compliant with the GATT 1994?

In order to address these questions, I will start by contextualising within the framework of the green economy, to better understand Quebec's ambition to increase exports of hydroelectricity south of the border. Then, I will comment upon the expected advantages of Quebec's policy, highlighting the province's potential to help Northeast America reach regional energy sustainability goals. Finally, I will raise the concerns associated with the policy, and aim to examine whether a change in policy could affect Quebec's compliance under international trade law.

A. What is Quebec's hydroelectricity trade policy?

In this section, I lay out the context and nature of Quebec's hydroelectricity trade policy.

Background

Demand for electricity in the 21st century

The rise in demand for power[5] has become the infrastructural challenge of the century due to the limited capacity of our power lines.[6] By 2050, Canada expects to double its current electricity generation capacity to meet urban consumption requirements,[7] while the United States (US) will need to triple the transmission capacity of its power grid, often referred to as the "world's largest machine."[8] "The sheer scale of the infrastructure that must be revamped, demolished or replaced"[9] is really 'unprecedented.'[10] Governments must address this challenge promptly, as the failure to provide adequate electric grid capacity for delivery to citizens could result in a loss of political credibility.

The importance of access to renewable sources of energy

The challenge of meeting energy demand extends beyond the mere sufficiency of supply; such supply of energy is also expected to be green. Indeed, the global commitment to decarbonize economies[11] requires a significant transition in the energy sector,[12] shifting from fossil fuels to non-emitting 'green' or renewable sources for electricity generation.[13] In Canada, the federal government has pledged to decarbonise its electricity grid by 2035, a forehead of

[5] ISO New England, *Vision in Action – ISO New England's Strategic Plan* (2022) at 3, online (pdf): <https://www.iso-ne.com/static-assets/documents/2022/10/2022-strategic-plan-vision-in-action.pdf>
[6] Christopher Frey, *World Trade Law and the Emergence of International Electricity Markets* (Springer 2022) 25 European Yearbook of International Economic Law Monographs – Studies in European and International Economic Law, at 13
[7] Government of Canada, *Powering Canada Forward: Building a Clean, Affordable, and Reliable Electricity System for Every Region of Canada* (2023) at 6, online (pdf):<https://natural-resources.canada.ca/sites/nrcan/files/electricityVisionPaper/Electricity%20Paper_ENGLISH.pdf>
[8] Canadian Electricity Association, *The North American Grid – Powering Cooperation on Clean Energy & the Environment* (2016) at 7, online (pdf): <https://www.electricity.ca/wp-content/uploads/2017/05/CEA_16-086_The_North_American_E_WEB.pdf>
[9] Derek Brower, Amanda Chu & Myles McCormick "The Energy Transition will be Volatile" *The Financial Times* (29 June 2023), online: <https://www.ft.com/content/86d71297-3f34-48f3-8f3f-28b7e8be03c6?shareType=nongift>
[10] Government of Canada, *supra* note 8 at 3
[11] *Paris Agreement*, 12 December 2015 at Art 2, online: <https://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf>
[12] Christopher Frey, *supra* note 7 at 20
[13] Kateryna Holzer, "Green Electricity and the GATT" in Michael Faure (ed) *Elgar Encyclopedia of Environmental Law* (Edward Elgar Publishing 2023) at 257; Christopher Frey, *supra* note 7 at 4

its entire economy attaining carbon neutrality by 2050.[14] Quebec's grid is arguably 'already' decarbonised since over 99% of its electricity input is generated from a renewable source of energy, that is hydropower,[15] and it has "one of the lowest per capita emission rates in North America."[16] The other provinces of Canada, which currently rely on fossil fuel energy, will bear the most difficulty in switching to renewable energy. South of the border, the US is also aiming for a net-zero economy by 2050,[17] and individual states have set targets for decarbonising their power grid. For instance, the state of New York aims to decarbonise its grid by the year of 2040,[18] mostly through development of wind and solar sources of energy. Importantly, policymakers frame such decarbonisation policies as opportunities not only to solve the climate crisis, but also "to take advantage of climate change in order to develop a green economy and create jobs,"[19] both within and outside the electricity sector.[20] As ever more companies eagerly market their products as 'green,'[21] the Canadian government describes the use of renewable energy through a decarbonised grid as the "'price of entry' for marketing

[14] Canadian Net Zero Emissions Accountability Act, SC 2021, c 22, s6; Government of Canada – Natural Resources Canada, *Minister Wilkinson Launches Canada Electricity Advisory Council to Help Build Canada's Clean Electricity Future* (5 May 2023) online: <https://www.canada.ca/en/natural-resources-canada/news/2023/05/minister-wilkinson-launches-canada-electricity-advisory-council-to-help-buildcanadas-clean-electricity-future.html>

[15] Hydro-Quebec, *Partnering for a Clean Energy Future in the Northeast*, online (pdf): <https://www.hydroquebec.com/data/documents-donnees/pdf/partnering-clean-energy-future-northeast-en.pdf>

[16] Government of Québec, *supra* note 1 at 2

[17] United States Department of State and United States Executive Office of the President, *The Long-Term Strategy of the United States: Pathways to Net-Zero Greenhouse Gas Emissions by 2050* (Washington DC, November 2021) at 3, online (pdf): <https://www.whitehouse.gov/wp-content/uploads/2021/10/us-long-term-strategy.pdf>

[18] New York ISO, *Achieving a Reliable Zero-Emissions Grid by 2040: A Guide for the Climate Action Council* (November 2020), online (pdf): < https://www.nyiso.com/documents/20142/17122673/Guide-for-the-Climate-Action-Council.pdf/38f2e3c1-7112-61e9-0381-d2f0e2763a72>; New York ISO, *The Path to a Reliable, Greener Grid for New York* (Power Trends 2022: The New York ISO Annual Grid & Markets Report) (2022), online (pdf): <https://www.nyiso.com/documents/20142/2223020/2022-Power-Trends-Report.pdf>

[19] Anton Ming-Zhi Gao in Kim Talus (ed), *Research Handbook on International Energy Law* (2014) at 408

[20] Government of Canada, *Powering Canada Forward: Building a Clean, Affordable, and Reliable Electricity System for Every Region of Canada* (2023) at 7-8, online (pdf): <https://natural-resources.canada.ca/sites/nrcan/files/electricityVisionPaper/Electricity%20Paper_ENGLISH.pdf>

[21] Government of Canada, *supra* note 8 at 2

products internationally."[22] So, for Canada, the pursuit of net-zero "is the greatest economic opportunity of our time" on top of being a "scientific and moral imperative."[23]

In this context, what is Quebec's pronounced hydroelectricity trade policy?

Quebec's hydroelectricity trade policy

Quebec as the "battery" of Northeast America

Quebec's ambition is to become the 'battery' of Northeast America by increasing its cross-border exports of hydroelectricity, thereby consolidating its status[24] as a leader in clean energy worldwide. Indeed, for Quebec this strategy serves as a real "means of supporting the decarbonisation of Northeast America while generating wealth."[25] The reasoning is that with the current trends towards electrification, Hydro-Quebec exports to Northeast America could be the key to building the resilience of Quebec's economy on a guaranteed source of revenue,[26] thereby pursuing 'green' growth at a time where other blocs (most notably Europe) struggle to access renewable energy at an affordable price. In line with this strategy, Quebec has recently signed long-term hydroelectricity export contracts which include two big transmission line projects: the Champlain Hudson Power Express (CHPE), designed to supply New York,[27] and the New England Clean Energy Connect (NECEC), designed to supply New England.[28] The

[22] Government of Canada, *supra* note 8 at 2
[23] *Ibid*
[24] Government of Québec, *supra* note 1 at 7
[25] *Ibid* at 30
[26] *Ibid* at 14
[27] Hydro-Québec, *Powering New York City with Hydropower from Québec and New York based Renewable Energy*, online (pdf): <http://news.hydroquebec.com/media/filer_private/2021/09/14/2021g423-maj-2021-09-13-onepagercleanhydro-acc-epr1.pdf>
[28] Hydro-Québec, "Exportations vers la Nouvelle-Angleterre: Un jury du Maine donne le feu vert au New England Clean Energy Connect" (20 April 2023), online: <http://nouvelles.hydroquebec.com/fr/communiques-

contracts are signed for a supply of 20 years. Supplying New York with hydroelectricity strengthens Quebec's soft power and international recognition as a province "*qui sait faire,*"[29] an arguably important symbolic position for the only French-speaking region in North America. While Hydro-Quebec is required to reserve 165 TWh annually of heritage pool electricity for domestic consumption in Quebec at a low fixed price, it can sell its surplus electricity to Northeast American consumers at a rate that is higher than the one charged Quebecers, but also competitively priced for the U.S. market. This surplus was roughly equivalent to 40 TWh per year,[30] of which it sold 35.6 TWh in 2021.[31]

Economic rationale for exports

The economic rationale driving Quebec's hydroelectricity exports to Northeast America primarily revolves around the expected financial returns for the province. Indeed, in the case of electricity trade between Hydro-Quebec and Northeast America, the US is a net importer and Canada a net exporter.[32] The US and Canadian electric grid system, which is "overseen by many institutions,"[33] operate on a frequency of 60Hz,[34] with cooperation between the two

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de-presse/1945/exportations-vers-la-nouvelle-angleterre-un-jury-du-maine-donne-le-feu-vert-au-new-england-clean-energy-connect/>

[29] Stéphane Savard, *Hydro-Québec et l'État Québécois 1944-2005* (Septentrion, 2013) at 295

[30] François Normand, "Exporter de l'électricité est une mauvaise idée, selon l'IDQ", *Les Affaires* (14 June 2022), online: <https://www.lesaffaires.com/secteurs-d-activite/ressources-naturelles/exporter-de-lelectricite-est-une-mauvaise-idee-selon-lidq/633832>; Alain Dubuc et Daniel Denis, *L'électricité renouvelable, un levier de creation de richesse écoresponsable pour le Québec: Rapport Long* (Institut du Québec, Juin 2022), online (pdf): <https://institutduquebec.ca/wp-content/uploads/2022/06/IDQ-202206-Electricite-propre-LONG.pdf>

[31] Hydro-Québec, "Annual Report 2021" (2021) at 29, online (pdf): *Hydro-Québec* <https://www.hydroquebec.com/data/documents-donnees/pdf/annual-report-2021-hydro-quebec.pdf?v=20220322>

[32] American Bar Association, *Proceedings of the Fourth Annual Conference on Canada-US Trade in Energy* (Washington D.C., 1989) at 125

[33] Maya Domeshek, "Institutional Strategies for State-Level Decarbonization of the Electricity Grid in the Wake of the Inflation Reduction Act" *Resources* (18 May 2023), online: <https://www.resources.org/archives/institutional-strategies-for-state-level-decarbonization-of-the-electricity-grid-in-the-wake-of-the-inflation-reduction-act/>

[34] Christopher Frey, *supra* note 7 at 10

"happening through voluntary arrangements"[35] mostly consisting of long-term contracts for exports of Canadian electricity to Northeast American states.

Exports of hydroelectricity out of the Quebec province by Hydro-Quebec, whose sole shareholder is the Quebec government, starkly increased in the 20th century. This increase in exports is attributable to both to the finalisation of the James Bay Project, which doubled HQ's generating capacity, and to the increase in oil prices in the 70s, which placed Hydro-Quebec in a competitive position to deliver clean energy across the northeast American region at low cost.[36] In fact, Hydro-Quebec's electricity rates are striking low as compared to that of rival American utility companies:[37] while Montreal residential consumers paid an average of 7.59 cents per kWh for their electricity in 2022, New York residential consumers paid 36.03 cents per kWh on average.[38] In this context, the US has enacted a Clean Power Plan under which imports of Canadian electricity could triple as they are integrated into the country's CO2 reduction strategy.[39] The question from the US perspective is: "why, if the goal is to reduce carbon emissions, should [we] be forced to pay for less efficient and more costly solar or wind based power when equally carbon free hydroelectric power is available for less?"[40]

Political rationale for power grid integration

[35] Christopher Frey, *supra* note 7 at 59
[36] Jean-Thomas Bernard, "United States' Electricity Imports from Quebec and the Fair Trade Issue" (1998) 31:1 Canadian Public Administration 43, at 46.
[37] Government of Québec, *supra* note 1 at 67
[38] Hydro-Quebec, *Comparison of Electricity Prices in Major North American Cities* (2022) at 4, online (pdf): <https://www.hydroquebec.com/data/documents-donnees/pdf/comparison-electricity-prices.pdf?v=2022>
[39] Canadian Electricity Association, *supra* note 9 at 12
[40] Harvey L. Reiter, "When is Renewable not Renewable? The Constitutionality of State Laws Denying New Large Canadian Hydroelectric Projects Treatment as Renewable Resources" (2015) 5 Harv. Bus. L. Rev. 76, at 85

The economic rationale supporting Quebec's hydroelectricity exports to Northeast America hinges upon the unique kind of hydraulic nationalism in Quebec society,[41] "*où l'identité de l'entreprise publique et celle de la société Québécoise se confondent*."[42] Quebecers hail the successes of Hydro-Quebec, created in 1944 by the Bourassa Government's *projet de loi 17,*[43] as their own direct successes.[44] The Bourassa Government's rationale was that exports would ultimately benefit Quebecers through lowered domestic electricity prices and increased tax revenue for the Government,[45] which could be used to fund Quebec's health and education sectors.[46] Exporting electricity also builds Quebec's soft power on a world scale. As Quebec developed its capacity to effectively transport its electricity over long distances to the South of the Canadian border, Hydro-Quebec became the first operator to build and operate a 735kv high-voltage power line,[47] thus setting Hydro-Quebec as a world leader in its field of expertise. Moreover, Quebec takes pride in achieving energy self-sufficiency, being the real "*maîtres de chez nous*,"[48] providing American cities with clean energy while remaining completely independent of imports from America.[49] New England and New York "do rely substantially on imports"[50] of Hydro-Quebec electricity, which are deemed to have contributed to lowering their CO2 emissions by 7 million tonnes in the year 2019.[51] Today, Quebec effectively stands as the world's fourth largest hydropower producer,[52] with its economic success being directly linked

[41] Daniel Macfarlane, "Hydro Diplomacy: Canada-U.S. Hydroelectricity Exports and Regulations Prior to the NEB" (2021) 51:4 American Rev Can Studies 508 at 526
[42] Stéphane Savard, *Hydro-Québec et l'État Québécois 1944-2005* (Septentrion, 2013) at 19
[43] *Ibid* at 40
[44] *Ibid* at 279
[45] Danny Bélanger, Jean Thomas Bernard & Yvon St-Amour, "Electricity Exports Under Financial Regulatory Constraints: the Case of Québec (1993) 3:2 Utilities Policy 137, at 138
[46] Daniel Macfarlane, *supra* note 44 at 508
[47] Stéphane Savard, *supra* note 45 at 51
[48] *Ibid* at 14
[49] Daniel Macfarlane, *supra* note 44 at 526
[50] Christopher Frey, *supra* note 7 at 54
[51] Hydro-Quebec, *supra* note 18
[52] Government of Québec, *supra* note 1 at 30

to its exports of hydropower beyond its borders.[53] In fact, exports of hydroelectricity to the US amounted to 24% of Hydro-Quebec's net income in 2021.[54]

Having set out Quebec's hydroelectricity trade goals in the context of a green economy, it might be useful to highlight the benefits associated with this policy.

Benefits of Quebec's hydroelectricity trade policy

Infrastructure challenge

Quebec's policy of augmenting exports to Northeast America offers a pragmatic solution to the infrastructure challenge of grid decarbonisation in the 21st century by leveraging existing transmission lines and minimising the need for costly new infrastructure. Indeed, electricity is entirely network dependent,[55] its distribution to consumers being possible only "via immovable physical infrastructure,"[56] in stark contrast to fossil fuel sources of energy which are comparatively 'easily' transportable via roads or air. This need for physical infrastructure for transmission of energy means that electric power is very costly, both at the initial stage of construction of the infrastructure and at any point afterwards owing to the maintenance costs.[57] Moreover, centres of renewable electricity generation are by default scarce and unevenly distributed away from urban centres of consumption,[58] entailing the need to build considerably long transmission lines to link the two. In the US, this poses a real challenge: its Wind Belt

[53] Philip Raphals, "Energy Policy in Quebec – Electric Generation" (May 2000) Helios Centre for Sustainable Energy Strategies at 3, online (pdf): <https://centrehelios.org/wp-content/uploads/2000_EN_Energy_Policy_in_Quebec.pdf>
[54] Hydro-Québec, *supra* note 34 at 41
[55] Rafael Leal-Arcas, Dr. Ehab Abu Gosh & Andrew Filis, *supra* note 13 at 107
[56] Christopher Frey, *supra* note 7 at 12
[57] Rafael Leal-Arcas, Dr. Ehab Abu Gosh & Andrew Filis, *supra* note 13 at 107
[58] Stephan W. Schill in Kim Talus (ed), *Research Handbook on International Energy Law* (2014) at 47

stretches on the offshore of its east coast, and its solar production capacity is mostly located in the sparsely populated Southwest.[59] Moreover, constructing such long transmission lines comes with particular technical challenges,[60] since electricity is "lost during transmission, and the greater the distance it has to be transported, the greater the losses."[61] These losses, however, have been mitigated with time and thanks to new technologies. In this context, an increase in existing cross-border electricity trade relations resulting in further integration of regional power grids can help two neighbouring states to decarbonise more rapidly and at lower overall economic and environmental costs.[62] Advantages include reduced costs for building, operating and maintaining the power grids.[63] Another advantage is reduced damage to the environment by the construction of as less infrastructure around as possible.[64] Quebec's strategy has the potential to maximize efficiency and reduce the environmental footprint of constructing new transmission lines, provided the province effectively capitalizes on upgrading the existing infrastructure connecting to Northeast America.

Network stability (intermittency) challenge

Quebec's hydroelectricity trade policy also offers a pragmatic solution to the intermittency challenge associated with 'green' power grids. Indeed, for stability in an electric system, "the

[59] Christopher Frey, *supra* note 7 at 20
[60] Massachusetts Institute of Technology, *The Future of the Electric Grid: An Interdisciplinary MIT Study* (2011) at 11, online (pdf): <https://energy.mit.edu/wp-content/uploads/2011/12/MITEI-The-Future-of-the-Electric-Grid.pdf>
[61] Akhil Gupta, "An Anthropology of Electricity From the Global South" (2015) 30:4 *Cultural Anthropology* 555, at 556 online: <https://journal.culanth.org/index.php/ca/article/view/ca30.4.04/203>
[62] Stephen G. Breyer & Paul W. MacAvoy, *Energy Regulation by the Federal Power Commission* (The Brookings Institution, Washington D.C. 1974), at 93
[63] Emil Dimanchev, Joshua Hodge & John Parsons, "Two-Way Trade in Green Electrons: Deep Decarbonization of the Northeastern U.S. and the Role of Canadian Hydropower" (2020) Massachusetts Institute of Technology Center for Energy and Environmental Policy Research Working Paper No 2020-003 at 46 ;
[64] Orlando Federico Cabrera-Colorado, "Increasing U.S.-Mexico Cross-Border Trade in Electricity by NAFTA's Renegotiation" (2018) 5:2 The Energy Bar Association 79 at 89- 93;

sum of generation and load must be zero,"[65] meaning that there must at all times be a perfect balance between the amount of electricity that is input into the network (generated) and consumed at the other end (load). In practice, this effectively means that the exact amount of electricity that we use at any point in time, for instance for cooking, needs to be input into the system at the exact same time that we are cooking. The problem encountered when switching to renewable sources of energy such as wind and solar then, is that "they cannot generate electricity when the air is still or the sun is not shining."[66] Their intermittent nature leads to situations of either a shortage or surplus of generation depending on the weather conditions[67] that make it difficult to match the demand for electricity on a 24/7 basis. For this reason, wind and solar based energy sources can be referred to as variable renewable energy sources (VRES), whose unreliability (from a system operator's point of view) requires addressing through energy storage.[68] Surplus energy should be stored when there is an excess of wind or sun in comparison to actual consumption, and then used when the sun or wind is down at a time where consumption is high. However, energy storage remains extremely expensive[69] and impractical.[70] A small scale illustration is our smartphones: they cannot store more than a day's worth of battery energy, and by the same logic storing a whole region's worth of energy demand is incredibly logistically difficult.[71] For states in the US Northeast, "an additional option is the use of hydropower reservoirs in neighbouring Quebec."[72] Indeed, a stark advantage of hydropower, in contrast to wind and solar sources of energy, is that its reservoirs effectively function as electricity storage, providing system operators with extreme flexibility to

[65] Christopher Frey, *supra* note 7 at 11
[66] David Gelles, "A Fight Over America's Energy Future Erupts on the Canadian Border" *The New York Times* (6 May 2022), online: <https://www.nytimes.com/2022/05/06/climate/hydro-quebec-maine-clean-energy.html>
[67] Christopher Frey, *supra* note 7 at 44
[68] *Ibid* at 11
[69] Orlando Federico Cabrera-Colorado, *supra* note 64 at 81
[70] Christopher Frey, *supra* note 7 at 15
[71] Mohammad Hasan Balali et al, "An Overview of the Environmental, Economic and Material Developments of the Solar and Wind Sources Coupled with the Energy Storage Systems" (2017) 41:14 Int. J. Energy Res. 1949 at 1952
[72] Emil Dimanchev, Joshua Hodge & John Parsons, *supra* note 66 at 2

adequately match electricity demand at any time of the day.[73] Moreover, different behavioural habits between regions leading to different peak load profiles entail that regions trading (especially renewable types of) electricity between them benefit from complementing the other region's profile (as it would benefit their own).[74] Therefore, by leveraging hydropower reservoirs as a form of electricity storage, Quebec's hydroelectricity trade policy not only addresses the intermittency issue of renewable energy storage but also provides system operators with the flexibility needed to maintain a stable and reliable electric system. For this reason, the Canadian Electricity Association highlights that any reasonable power planning for the future by Northeast American states should include Hydro-Quebec.[75]

Québec's hydroelectricity trade policy undoubtedly has benefits, such as providing the opportunity maintain a stable power grid in a manner most effective as possible. However, what might be the limits to Quebec's hydroelectricity trade policy?

B. Limits to Quebec's hydroelectricity trade policy

In this section, I explain that the efficacy of Quebec's hydroelectricity trade policy is constrained by two factors. First, competing federal objectives may require Quebec to compromise between exports to Northeast America and the expansion of its grid to the Atlantic Loop to support national carbon neutrality objectives. Second, the finite nature of the water resources upon which hydroelectric generation relies may influence the direction of Quebec's

[73] Rafael Leal-Arcas, Dr. Ehab Abu Gosh & Andrew Filis, *supra* note 13 at 308; Massachusetts Institute of Technology, *supra* note 63 at 66
[74] Jean Thomas Bernard, "L'exportation d'Électricité par le Québec" (1982) 8:3 Canadian Public Policy 321, at 321; Christopher Frey, *supra* note 7 at 42, 53
[75] American Bar Association, *supra* note 35 at 135

policy decisions, potentially requiring setting up restrictions on hydroelectric exports in the future. I explain these elements in turn.

Competing federal objectives

Competing federal objectives might lead Canadian authorities to set restrictions on the exports of Quebec hydroelectricity. The need for strategic allocation of resources in Canada means that the federal Government is pushing towards carbon neutrality by integrating more renewable energy sources, like hydroelectricity, into the national grid underscores the need for strategic resource allocation. Upon deciding whether to authorize electricity exports, the Commission[76] considers their impact on adjacent provinces and fair market access for Canadians.[77] Moreover, the Canadian federal government has an Electricity Advisory Council to advise on how best to go about revamping the Canadian electric grid.[78] In this context, a major objective is to extend Hydro-Quebec's grid towards the Atlantic Loop rather than focusing on exports to Northeast America. By directing Hydro-Quebec's output towards the Atlantic Loop, Canadian authorities could enhance domestic energy security and sustainability. This redirection might restrict hydroelectricity exports to Northeast America, impacting Quebec's traditional trading markets. However, integrating regional power systems through cross-border electricity trade can also contribute to energy security. In contrast with the EU, where Article 194 TFEU mandates a shared commitment to energy security, Canada and the US lack a unified framework and binding commitment to mutual energy security despite their

[76] We are here referring to the Commission of the Canadian Energy Regulator's. See sections 10(1) and 26(1) of the Canadian Energy Regulator Act, SC 2019, c 28.
[77] Canadian Energy Regulator, *Export and Import of Energy* (2 May 2023), online: <https://www.cer-rec.gc.ca/en/about/who-we-are-what-we-do/responsibility/export-import-energy.html>
[78] Government of Canada – Natural Resources Canada, *Minister Wilkinson Launches Canada Electricity Advisory Council to Help Build Canada's Clean Electricity Future* (5 May 2023) online: <https://www.canada.ca/en/natural-resources-canada/news/2023/05/minister-wilkinson-launches-canada-electricity-advisory-council-to-help-buildcanadas-clean-electricity-future.html>

highly interdependent electricity grids. Thus, whether restricting exports contributes to or detracts from Canada's energy security is debatable. The question remains whether a member state can lawfully choose not to export under the GATT framework.

Quebec water resources

Hydropower: a renewable resource?

An inherent limitation to Quebec's hydroelectricity trade policy lies in the finite nature of its water resources. It is important to nuance hydropower's status as a 'renewable' resource, as it is only as renewable as its water supply, which may become exhaustible if the extraction rate surpasses natural replenishment.[79] Climate change will inevitably affect the generation potential of hydropower, including through sedimentation "filing up reservoirs, obstructing intakes and deteriorating turbines."[80] In this context, it is notable that Canada's 1907 Electricity and Fluids Exportation Act aimed to ensure that exports of hydroelectricity to the US were really "surplus to Canadian needs,"[81] strictly requiring export licences to be renewed every year, with the possibility of being unconditionally and unilaterally revoked by Canada.[82] The rationale behind this was that making Canadian resources available for American use "would result in their premature exhaustion."[83] These laws have been modified to prioritise legal certainty for long-term contracts, in particular with the deregulation of the electricity wholesale market. For the purposes of this thesis, therefore, I assume that Quebec's water stock will

[79] Alexandre Stamford da Silva & Fernando Menezes Campello de Souza, "The Economics of Water Resources for the Generation of Electricity and Other Uses" (2008) Annals of Operations Research 41, at 41, at 43
[80] Ludovic Gaudard and Franco Romerio in Raphael J. Heffron & Gavin F. M. Little (eds), *Delivering Energy Law and Policy in the EU and the US* (Edinburgh University Press, 2016), at 310
[81] American Bar Association, *supra* note 35 at 132
[82] *Ibid* at 132
[83] Helmut J. Frank & John J. Schanz, *US-Canadian Energy Trade: A Study of Changing Relationships* (1978) Westview Special Studies in Natural Resources and Energy Management, at 30

inevitably decrease with time due to insufficient water inflow combined with rising demand for the resource.[84] This already seems to be the case: the year of 2023 has seen a record shortfall in water inflow to Hydro-Québec's reservoirs.[85]

The end of the surplus era

Due to low water levels, Quebec currently faces the end of its hydroelectricity surplus era, expected to occur as soon as 2027.[86] This poses a direct challenge for Quebec. First, this challenges the myth that Quebec has an unlimited supply of hydroelectricity to share with its neighbours. Second, Quebec has until now been exporting electricity that was surplus to its domestic needs. In 2019, this surplus was evaluated at 40 TWh,[87] of which Quebec exported 33.7 TWh.[88] But, in the future, Quebec demand for electricity will rise to a point that it might need this energy for delivery to Quebec consumers in order to avoid power cuts. The question then becomes: what will be Quebec's course of action if, at any point in the future, Quebec's hydroelectricity generation capacity is insufficient to cover both domestic needs and the needs of foreign consumers reliant on Quebec hydroelectricity exports at the same time? It has been reported that, following exceptional shortfalls in water inflow into Hydro-Quebec's reservoirs, sources at the state company are quoted in an internal report for considering themselves grateful for not having to honour the obligations of delivering hydroelectricity to Northeast America as

[84] Alexandre Stamford da Silva & Fernando Menezes Campello de Souza, *supra* note 82 at 44
[85] Thomas Gerbet, "Le Québec Perd 1 G$ à cause d' « un énorme déficit énergétique »" *Radio-Canada* (26 January 2024), online: <https://ici.radio-canada.ca/nouvelle/2043931/hydro-quebec-dividendes-energie-reservoirs>; Hydro-Québec, *Un Avenir à Bâtir: Rapport Annuel 2023* (2024) at 30, online (pdf): <https://www.hydroquebec.com/data/documents-donnees/pdf/rapport-annuel-2023-hydro-quebec.pdf>
[86] Gabriel Giguère, *supra* note 2; Hydro-Québec, *supra* note 3 at 9
[87] François Normand, "Exporter de l'électricité est une mauvaise idée, selon l'IDQ", *Les Affaires* (14 June 2022), online: <https://www.lesaffaires.com/secteurs-d-activite/ressources-naturelles/exporter-de-lelectricite-est-une-mauvaise-idee-selon-lidq/633832>; Alain Dubuc et Daniel Denis, *L'électricité renouvelable, un levier de creation de richesse écoresponsable pour le Québec: Rapport Long* (Institut du Québec, Juin 2022), online (pdf): <https://institutduquebec.ca/wp-content/uploads/2022/06/IDQ-202206-Electricite-propre-LONG.pdf>
[88] Hydro-Québec, "Hydro-Québec: North America's Leading Provider of Clean Energy", online: <https://www.hydroquebec.com/clean-energy-provider/>

per their export contracts as of yet, claiming that "*le mot d'ordre pour 2024, est d'énormément moins exporter, pour préserver les grands reservoirs."*[89]

Legal impact of delivery shortfalls

As Quebec is considering restricting its hydroelectricity exports, a key issue is whether such restrictions can be set while upholding its obligations to Northeast American consumers. This includes honoring export contracts and complying with the provisions of the General Agreement on Tariffs and Trade (GATT) 1994. It might be useful to note from the outset that due to the inherently fluctuating nature of electricity flows, Hydro-Quebec's electricity export contracts already include provisions pertaining to potential delivery shortfalls by Quebec. For instance, the Power Purchase Agreement for NECEC line outlines procedures for addressing such shortfalls, acknowledging instances where Quebec may need to prioritise domestic delivery during peak demand periods, such as during the winter. However, the contract also imposes a general obligation on Quebec to fulfil its agreed-upon hydroelectricity delivery commitments. The central question here, then, pertains to a scenario in which Quebec would be imposing restrictions on hydroelectricity exports beyond routine adjustments that are considered 'business as usual' in the electricity market. In other words, I am here essentially contemplating a scenario where Quebec exercises its right to implement prolonged pauses in hydroelectricity exports, potentially breaching contractual obligations with American counterparts.

Quebec's hydroelectricity trade policy faces a significant constraint due to the finite nature of its water resources, which are vital for hydroelectricity production. While Quebec's

[89] Thomas Gerbet, *supra* note 88

official policy emphasizes increased exports, practical considerations arising from low water levels in its reservoirs may compel Quebec to reduce exports in the future.

C. Hydroelectricity export restrictions – legal framework

Both the Quebec Government and the federal Canadian Government must approve exports of Quebec hydroelectricity, as each has the authority to authorise or refuse such exports. I will outline the relevant laws conferring these powers and evaluate whether a refusal to allow for exports could lead Canada into non-compliance with international electricity trade laws under the General Agreement on Tariffs and Trade (GATT).[90]

Federal powers for hydroelectricity exports

The regulatory framework for authorizing international exports of hydroelectricity in Canada, under the *Canadian Energy Regulator Act 2019*[91] grants the federal government the power to authorise the operation of international power lines (or not), whether through a permit issued under s248 or a certificate issued under s262 of the Act.[92] According to s248, the Canadian Energy Regulator's Commission[93] must issue a permit for international power lines upon application, subject to regulatory compliance. At this stage, the Commission may recommend to the Minister[94] that an international power line be designated by order of the Governor in Council under s258,[95] for instance if it is of large scale. The governor may then,

[90] Note: This thesis examines all relevant legislation in its original language.
[91] Canadian Energy Regulator Act, SC 2019, c 28
[92] *Ibid*, s 247
[93] *Ibid*, s 10(1) and 26(1)
[94] See Canadian Energy Regulator Act, SC 2019, c 28, s 8; The Minister is designated by order of the Governor in Council.
[95] Canadian Energy Regulator Act, SC 2019, c 28, s 257

based on s258, designate that an international power line project be authorised by a certificate under s262 CERA 2019 rather than a permit under s248. In such a context, for a certificate to be issued, the considerations must notably include environmental effects, impacts on the rights of Indigenous peoples, and the extent to which the power line's effects would hinder or contribute to Canada's ability to meet its environmental obligations and commitments regarding climate change.[96] In other words, the Commission can choose *not* to authorise specific projects if they fail to meet national standards. This ensures that hydroelectricity exports, especially large-scale ones, align with Canada's regulatory, environmental, and socio-economic objectives.

Provincial powers for hydroelectricity exports

I begin by examining the relevant provisions already established within Quebec law. My analysis focuses notably on two key pieces of legislation: (1) the *Loi sur la Régie de l'énergie*[97] and (2) the *Loi sur l'exportation d'électricité*,[98] including potential amendments introduced by Bill 69. For better clarity, the provisions will be set out in full here, as they are subject to change and as this thesis seeks to inform the Bill's development and scrutiny.

First, Article 71.1 of the *Loi sur la Régie de l'énergie* currently provides that:[99]

[96] Canadian Energy Regulator Act, SC 2019, c 28, s 262(2)
[97] Loi sur la Régie de l'énergie, R-6.01
[98] Loi sur l'exportation d'électricité, E-23
[99] Loi sur la Régie de l'énergie, R-6.01, Article 71.1

Article 71.1, *Loi sur la Régie de l'énergie* :

"La fourniture d'électricité est destinée exclusivement à la satisfaction des besoins des marchés Québécois.

Ces besoins sont satisfaits en priorité par la fourniture d'électricité autre que patrimoniale vendue au distributeur d'électricité, puis lorsque cette fourniture est écoulée, par l'électricité patrimoniale."

However, Article 42 of the recently tabled Bill 69 intends to repeal this provision. Rather, Article 45 of Bill 69 replaces Article 74.1 of the *Loi sur la Régie de l'énergie* by precising that :

Article 42, Bill 69 *An Act to ensure the responsible governance of energy resources and to amend various legislative provisions* (replacing Article 74.1 of the *Loi sur la Régie de l'énergie) :*

Le distributeur d'électricité doit assurer par tout moyen les approvisionnements requis pour la satisfaction des besoins en électricité des marchés québécois excédant l'électricité patrimoniale.

Lorsque le distributeur d'électricité conclut un contrat d'approvisionnement en électricité aux fins de l'application du premier alinéa, il doit, dans les cas et aux conditions que la Régie détermine par règlement, demander à cette dernière d'autoriser un tel contrat. La Régie peut assortir l'autorisation de conditions.

Cette autorisation n'est toutefois pas requise :

1° […]

2° lorsque le distributeur d'électricité conclut un contrat d'approvisionnement en électricité en raison d'une situation d'urgence ou pour une durée d'au plus trois mois; […]

Upon reading this provision, it is clear that Hydro-Quebec must ensure the supply of hydroelectricity « by any means » (« par tout moyen »), including concluding contracts under its determined terms and conditions. In particular, « approvisionnement » in the first paragraph appears to encompass the supply of hydroelectricity, whether by increasing imports and production or restricting exports to prioritise domestic availability. Moreover, this supply of hydroelectricity must align with Hydro-Quebec's newly phrased mission. Indeed, Bill 69's Article 111, modifies Hydro-Quebec's mission in Article 22 of the *Loi sur Hydro-Québec* by specifying that the supply of electricity to meet the needs of the Quebec market must be made « de manière suffisante, sécuritaire, fiable et au meilleur coût », with the objective of meeting the electricity supply target set out by the Integrated Resource Management Plan.[100] This is a new feature introduced by Bill 69. The bill amends the *Loi sur le Ministère de l'économie et de l'innovation*[101] by adding Article 14.2, which mandates that the Minister must establish an Integrated Resource Management Plan every 6 years to promote Quebec's energy development from a decarbonisation perspective.[102] Consequently, it is implicitly understood that Quebec can exercise its authority to withhold authorization for hydroelectricity exports if it deems this necessary to meet its supply targets. These targets, as analyzed below, must be sufficient, safe, reliable, and cost-effective to fulfill its obligations under Quebec law.

It is noteworthy that "approvisionnement" in the second paragraph appears to refer exclusively to contracts for the purchase or import of electricity intended to meet the needs of the Quebec market, to the exclusion of export contracts. Hydro-Québec requires government approval to conclude such purchase contracts unless otherwise specified in the third paragraph,

[100] Bill n° 69: An Act to ensure the responsible governance of energy resources and to amend various legislative provisions, 1st Sess, 43th Leg, Quebec, 2024 (presented 6 June 2024), Article 111 modifying Article 22 of the *Loi sur Hydro-Québec*, H-5.
[101] *Loi sur le Ministère de l'économie et de l'innovation,* M-14.1
[102] Bill n° 69: An Act to ensure the responsible governance of energy resources and to amend various legislative provisions, 1st Sess, 43th Leg, Quebec, 2024 (presented 6 June 2024), Article 4

such as in cases of emergency or for purchase contracts with a duration of less than three months. This suggests that the Quebec government anticipates situations where Hydro-Québec might need to secure electricity supplies urgently or for short-term periods without prior approval. For instance, this could occur due to low water levels in the province, resulting in a short supply of hydroelectricity. I return to this point below.

Moreover, the *Loi sur l'exportation de l'électricité* provides:

Loi sur l'exportation d'électricité :

Article 1: "Tout bail, vente ou cession de forces hydrauliques qui appartienent au Québec ou dans lesquelles il a des droits de propriété ou autres doit contenir une clause prohibant l'exportation d'électricité hors du Québec."

Article 2: "Tout contrat, permis ou concession autorisant l'installation ou le passage de lignes de transmission ou l'implantation d'un parc éolien sur le domaine de l'État doit également contenir une clause prohibant l'exportation d'électricité hors du Québec." […]

Article 6: "Malgré les articles 1 et 2, le gouvernement peut, aux conditions et dans les cas qu'il détermine, autoriser tout contrat d'exportation d'électricité hors du Québec."

Article 6.1: "Tout contrat relatif à l'exportation d'électricité par Hydro-Québec doit être soumis à l'autorisation du gouvernement dans les cas et aux conditions que ce dernier peut alors déterminer."

Article 6.2 : "Un décret pris en vertu de l'article 6 ou de l'article 6.1 est déposé à l'Assemblée nationale dans les 15 jours de sa prise, si l'Assemblée nationale est en session, ou si elle ne siège pas, dans les 15 jours de l'ouverture de la session suivante ou de la reprise des travaux."

The baseline in Quebec law therefore is that exports of electricity out of the province are Quebec are prohibited but can be authorised by the government as an exception to this baseline. These provisions must now be read together with Article 143 of the Bill 69, which states :

> **Article 143, Bill 69** ***An Act to ensure the responsible governance of energy resources and to amend various legislative provisions***:
>
> Jusqu'à la prise par le gouvernement du premier décret en vertu de l'article 6.1 de la Loi sur l'exportation de l'électricité (chapitre E-23), l'autorisation du gouvernement est requise afin de permettre à Hydro-Québec de conclure, de renouveler ou de prolonger un contrat d'exportation d'électricité qui comporte l'une des caractéristiques suivantes :
>
> 1° le contrat est d'une durée de cinq ans et plus;
>
> 2° le contrat prévoit l'exportation de trois térawattheures ou plus;
>
> 3° le contrat prévoit l'exportation de 1 000 mégawatts ou plus.
>
> Les contrats d'exportation d'électricité conclus par Hydro-Québec avant le (*indiquer ici la date de la sanction de la présente loi*) sont réputés avoir été autorisés par le gouvernement en vertu de l'article 6.1 de la Loi sur l'exportation de l'électricité.

From a combined reading of the above provisions, it seems that the Quebec government now has two opportunities to deny authorization for hydroelectricity exports to Northeast America. Firstly, the government can issue an interim authorization for large-scale export contracts— i.e. contracts exceeding five years, 3 TWh, or 1000 MW—under Article 143 of Bill 69. Unlike the authorization required under Article 6.1 of the *Loi sur l'exportation de l'électricité*, this interim authorization does not require presentation to Parliament as stipulated by Article 6.2. The official authorization under Article 6.1 is the only one subject to parliamentary review. This change means that Hydro-Québec can finalize electricity supply contracts more swiftly, thus aligning with the Government's legislative goal to reduce

bureaucratic hurdles to securing electricity supply. Secondly, the Government can deny authorisation to any type of export contract under Article 6.1 of the *Loi sur l'exportation d'électricité.*

It is noteworthy that neither Quebec's *Loi sur l'exportation de l'électricité* nor Bill 69 specifies the reasons or circumstances under which an authorization to export electricity might be denied. This lack of clarity stands in stark contrast to Bill 69's Article 42, which clearly states that government approval is not required for Hydro-Québec to conclude electricity purchase contracts in urgent situations or for contracts lasting less than three months. The absence of specified criteria for denying export authorizations suggests that the Government retains broad discretion to deny such authorizations. In this context, it can reasonably be inferred that the Government may deny authorisation to exports if necessary to comply with its energy policy objectives, particularly to ensure a sufficient, safe, reliable, and cost-effective electricity supply.

Having acknowledged the legal provisions for authorizing hydroelectricity exports at both the provincial and federal levels, I will now evaluate how the utilization of this policy space to revoke authorization for hydroelectricity exports would align with international trade law.

Electricity export restrictions under international electricity trade law

In this section, I aim to establish that restrictions on exports of Quebec hydroelectricity imposed by Canadian authorities could amount to a breach of its obligations under the GATT 1994.

Electricity in WTO Agreements

There is actually no specific section of the WTO Agreements dedicated specifically to the trade of energy,[103] nor do they specify whether 'electricity' should be considered a good or a service. However, the trade of electricity is covered by these Agreements[104] and is classified as a good in the WTO tariff schedule.[105] Thus, in the Ontario FIIT case, neither party contested the classification of electricity as a good.[106] This is significant because, while electricity originates as a natural resource, or good, its trade relies heavily on various services.[107] This thesis thus adopts the precedent as categorical confirmation that electricity is treated as a good under international trade law, despite the complexity of its transmission and distribution. As a result, the GATT applies to the regulation of electricity exports.

A breach of Article XI:1 of the GATT 1994

This thesis submits that restrictions on exports of Quebec hydroelectricity, whether imposed by the federal or provincial government, would potentially violate Article XI:1 of the GATT 1994, which states:

[103] Christopher Frey, *supra* note 7 at 88
[104] Orlando Federico Cabrera-Colorado, *supra* note 64 at 87
[105] *Ibid* at 91
[106] Christopher Frey, *supra* note 7 at 105
[107] *Ibid* at 96

Article XI of the GATT 1994– General Elimination of Quantitative Restrictions:

1. No prohibitions or restrictions other than duties, taxes or other charges, whether made effective through quotas, import or export licences or other measures, shall be instituted or maintained by any contracting party on the importation of any product of the territory of any other contracting party or on the exportation or sale for export of any product destined for the territory of any other contracting party. […]

To establish a violation of Article XI:1 of the GATT 1994, following the Panel in *EU – Energy Package,* it must be shown that the decision by the Quebec or federal government ("Canadian authorities") to restrict exports of hydroelectricity can constitute an 'other measure' within the meaning of Article XI:1, and that such 'measure' is a restriction or prohibition on the export of hydroelectricity to the south of the Quebec border.[108] Under this Article then, any Quebec export restrictions imposed by legislation could constitute an 'other measure' that runs contrary to the GATT 1994. The WTO has established that all sorts of government actions influencing trade flows could fall under the scope of Article XI's residual category,[109] so any decision not to renew or authorise a hydroelectricity export contract would definitely constitute a "measure" for the purposes of Article XI. To qualify as a restriction or prohibition, it must further be shown that the measure has the effect of limiting the export of hydroelectricity.[110]

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[108] *European Union and its Member States – Certain Measures Relating to the Energy Sector* (*Complaint by Russia)* (2018), WTO Doc WT/DS476/R (Panel Report) at para 7.243, online (pdf): <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/WT/DS/476R.pdf&Open=True>

[109] *Argentina – Measures Affecting the Export of Bovine Hides and the Import of Finished Leather (Complaint by the European Communities* (2000), WTO Doc WT/DS155/R (Panel Report) at para 11.17, online (pdf): <https://www.wto.org/english/tratop_e/dispu_e/155r_e.pdf>

[110] *Argentina – Measures Affecting the Importation of Goods (Complaint by the European Union, the United States and Japan)* (2015), WTO Doc WT/DS438/AB/R, WT/DS444/AB/R, WT/DS445/AB/R (Appellate Body Report) at para 5.217, online (pdf): <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/WT/DS/438ABR.pdf&Open=True>; *China – Measures Related to the Exportation of Various Raw Materials (Complaint by the United States, the European Union and Mexico)* (2012), WTO Doc WT/DS394/AB/R, WT/DS395/AB/R, WT/DS398/AB/R (Appellate Body Report) at paras 319-320, online:

Importantly, the limiting effects of the measure do not need to be quantified. Instead, they can be demonstrated through an analysis of the design and structure of the decision or legislation, considered in its broader context,[111] including the policy's intended outcome.[112] In other words, it is possible that Canada might be in breach of Article XI:1 of the GATT 1994 simply due to the existence of a law authorising hydroelectricity export restrictions to be imposed. The question then arises: if restrictions on exports of Quebec hydroelectricity are deemed to violate Article XI:1 of the GATT 1994, could such violation be justified under the same Agreement, for instance by citing their necessity during periods of low water levels?

Justifying a breach of Article XI:1 of the GATT 1994

Canada cannot simply invoke an exception on the grounds of 'energy security' if it is accused of breaching its obligations under Article XI of the GATT 1994 by imposing restrictions on Quebec hydroelectricity exports. Indeed, Article XXI of the GATT 1994, known as the "security" exception, justifies breaches only in cases related to military interests or national security, not energy security. The narrowly worded provisions of Article XXI make it unlikely that a WTO panel would interpret them broadly enough to cover energy security. Therefore, Canada would likely fail to justify such a violation under Article XXI. Instead, Canada would need to advocate for the inclusion of an energy security exception clause within the WTO framework, which I will discuss further in this thesis.

<https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/WT/DS/398ABR.pdf&Open=True>; *European Union and its Member States – Certain Measures Relating to the Energy Sector* (*Complaint by Russia)* (2018), *supra* note 144 at paras 7.974-7.975

[111] *Argentina – Measures Affecting the Importation of Goods (Complaint by the European Union, the United States and Japan)* (2015), *supra* note 116 at para 5.217; *China – Measures Related to the Exportation of Various Raw Materials (Complaint by the United States, the European Union and Mexico)* (2012), *supra* note 116 at paras 319-320; *European Union and its Member States – Certain Measures Relating to the Energy Sector* (*Complaint by Russia)* (2018), *supra* note 114 at paras 7.974-7.975

[112] *Indonesia – Measures Relating to Raw Materials (Complaint by the European Union)* (2022), WTO Doc WT/DS592/R (Panel Report) at para 7.28, online (pdf): <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/WT/DS/592R.pdf&Open=True>

Given the absence of an 'energy security defence', Canada will have to argue that :

(1) its restrictions on exports of Quebec hydroelectricity are consistent with Article XI:1 of the GATT 1994, because they fall under the ambit of Article XI:2(a), or, alternatively,

(2) that the inconsistency of their export restrictions with Article XI:1 is nevertheless justified under Article XX GATT (the 'environmental exception').

I take these arguments in turn.

Article XI:2(a) of the GATT 1994

If the US complains about Canada's restrictions on exports of hydroelectricity, Canada's first argument should be that such restrictions are consistent with Article XI:1 of the GATT 1994, because they fall under the ambit of Article XI:2(a), which provides:

Article XI:2(a) of the GATT 1994

2. The provisions of paragraph 1 of this Article shall not extend to the following:

(a) Export prohibitions or restrictions temporarily applied to prevent or relieve critical shortages of foodstuffs or other products essential to the exporting contracting party; […]

In other words, Article XI:1 is restricted by Article XI:2(a). So, if the restriction of exports of hydroelectricity imposed by Canadian authorities can be proven to fall within the ambit of Article XI:2(a), then it would not violate Article XI:1.[113] For this, Canadian authorities

[113] *Argentina – Measures Affecting the Importation of Goods (Complaint by the European Union, the United States and Japan)* (2015), *supra* note 116 at para 5.219; *China – Measures Related to the Exportation of*

would need to prove that their export restriction or prohibition applies to a product that is essential to its territory, and applied only temporarily to prevent or relieve a critical shortage of this essential product.[114] Should Canadian authorities fail to prove this, then restrictions on exports of Quebec hydroelectricity would be deemed to violate Article XI:1 of the GATT 1994. In such a case, could Canada argue that such violation is nevertheless justified for environmental purposes?

Article XX of the GATT 1994

If any restriction on exports of Quebec hydroelectricity is deemed to constitute a violation of Article XI:1 of the GATT 1994, Canadian authorities could seek to have this violation justified under the GATT's main exception clauses as necessary for environmental reasons, such as low water levels in the province. The most relevant exception clause is Article XX of the GATT 1994, also known as the GATT's "environmental exception",[115] designed "to harmonize the relationship" between trade law and environmental policy aims, which provides:

Various Raw Materials (Complaint by the United States, the European Union and Mexico) (2012), *supra* note 116 at para 334

[114] *General Agreement on Tariffs and* Trade 1994, Article X1:2(a); *Indonesia – Measures Relating to Raw Materials (Complaint by the European Union)* (2022), *supra* note 118 at para 7.22

[115] Manjiao Chi, "'Exhaustible Natural Resource' in WTO law: GATT Article XX(g) Disputes and Their Implications" (2014) 48:5 Journal of World Trade 939, at 940

Article XX of the GATT 1994 - General Exceptions

Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures:

[…]

(g) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption;

[…]

(i) involving restrictions on exports of domestic materials necessary to ensure essential quantities of such materials to a domestic processing industry during periods when the domestic price of such materials is held below the world price as part of a governmental stabilization plan; *provided* that such restrictions shall not operate to increase the exports of or the production afforded to such domestic industry, and shall not depart from the provisions of this Agreement relating to non-discrimination;

(j) essential to the acquisition or distribution of products in general or local short supply; *provided* that such measures shall be consistent with the principe that all contracting parties are entitled to an equitable share of the international supply of such products, and that any such measures, which are inconsistent with the other provisions of the Agreement shall be discontinued as soon as the conditions giving rise to them have ceased to exist.

[…]

In cases where energy export restrictions violate Article XI:1 of the GATT 1994, the most relevant exceptions under Article XX can arguably be found in paragraphs (g), (h), (i), and

(j).[116] Moreover, the wording of NAFTA's Chapter 6 on Energy, specifically Article 605, suggests that countries aiming to justify energy export restrictions would primarily rely on Articles XI:2(a), XX(g), (i), or (j) of the GATT 1994, while CUSMA remains silent on the subject.

I will here focus my analysis on the potential justification to restrictions on exports of Quebec hydroelectricity under Article XX(g) and (j) of the GATT 1994, as these grounds seem to be the most relevant for the purposes. Indeed, Article XX(i) is limited to the purpose of ensuring 'essential quantities of such materials to a domestic processing industry'. However, in the case of Canada, the federal and provincial governments would be seeking to ensure the availability of electricity not merely for a domestic processing industry but for all types of industries, and most importantly for residential use by its population. In other words, I here choose not to consider Article XX(i) because it is too narrow for our context and unsuited for hydroelectricity.

In summary, it can be concluded from this section (and chapter) that while Quebec's hydroelectricity trade policy, while offering advantages, it is constrained by competing federal objectives and the finite nature of its water (and hence hydraulic) resources. This factor may impact its policy trajectory, potentially requiring Canadian authorities to restrict its hydroelectricity exports. In this event, such restrictions are likely to be deemed to violate Article XI of the GATT. In such a case, might Canadian authorities justify this violation under the GATT 1994? We answer this question in the next chapter, in which we will examine whether

[116] Wen-Chen Shih, "Energy Security, GATT/WTO, and Regional Agreements" (2009) 49 Natural Resources Journal 433, at 459

restrictions on exports of Quebec hydroelectricity could ever be justified under the GATT's relevant exception clauses.

III. Chapter 2: Justifying restrictions on exports of Quebec hydroelectricity under the GATT 1994

This chapter aims to examine whether Canadian authorities could reasonably justify the GATT violation of imposing restrictions on exports of Quebec hydroelectricity to Northeast America under the GATT's exception provisions, particularly during periods of significantly low water levels. To this aim, I will break out in depth how Canadian authorities might argue that:

(1) their restrictions on exports of Quebec hydroelectricity are consistent with Article XI:1 of the GATT 1994, because they fall under the ambit of Article XI:2(a), or, alternatively,

(2) that the inconsistency in their export restrictions with Article XI:1 is nevertheless justified under Article XX(g) and/or XX(j) of the GATT 1994.

A. Violation of Article XI:1 of the GATT 1994

As seen previously, the baseline in Quebec law is that exports of electricity out of the province are prohibited, but can be authorised by the Government as an exception under Article 6.1 of the *Loi sur l'exportation d'électricité*. Moreover, the federal Government could deny a permit or a certificate for an export of hydroelectricity under s248 or 262 of the *Canadian Energy Regulator Act 2019*, as required for by s247 of the Act.

The exercise of this implicit power to deny authorisation for exports of hydroelectricity, as demonstrated, could violate Article XI:1 of the GATT 1994 prohibiting quantitative restrictions. Indeed, the mere existence, in law, of a right to unilaterally restrict exports of

hydroelectricity, could amount to a breach of Article XI:1 of the GATT 1994 if it can be shown that the measure has the effect of limiting the export of hydroelectricity.[117] In this context, I take it that a WTO panel could duly consider such a clause to have the effect of limiting the exportation of hydroelectricity, since both the federal and provincial Governments have the right to deny authorisation to exports of hydroelectricity. In such a case, how could Canadian authorities seek to justify this violation ?

B. Justifying restrictions on exports of Quebec hydroelectricity under the GATT

WTO law

General rules of analysis

It is important to note that the burden of proof lies with the Canadian authorities invoking a GATT exception to demonstrate that the conditions for applying the exception clause are met in their case.[118] My analysis will follow the rules of WTO dispute settlement. Following Article 3.2 of the Dispute Settlement Understanding (DSU), provisions will be interpreted "in accordance with customary rules of interpretation of public international law," in particular the rules of interpretation laid down in the Vienna Convention on the Law of Treaties (VCLT).[119]

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[117] *Argentina – Measures Affecting the Importation of Goods (Complaint by the European Union, the United States and Japan)* (2015), *supra* note 116 at para 5.217; *China – Measures Related to the Exportation of Various Raw Materials (Complaint by the United States, the European Union and Mexico)* (2012), *supra* note 116 at paras 319-320; *European Union and its Member States – Certain Measures Relating to the Energy Sector* (*Complaint by Russia)* (2018), *supra* note 144 at paras 7.974-7.975

[118] *Turkey – Restrictions on Imports of Textile and Clothing Products (Complaint by India)* (1999), WTO Doc WT/DS34/R (Panel Report) at para 9.57, online (pdf): <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/WT/DS/34R.pdf&Open=True>

[119] *Japan – Taxes on Alcoholic Beverages* (*Complaint by Canada and the European Communities)* (1996), WTO Doc WT/DS8/AB/R, WT/DS10/AB/R, WT/DS11/AB/R (Appellate Body Report) at 10*,* online: <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/WT/DS/8ABR.pdf&Open=True>; I. Van Damme, Treaty Interpretation by the WTO Appellate Body (Oxford: Oxford University Press, 2009) at 22; Manjiao Chi, *supra* note 121 at 948

Indeed, the WTO's Appellate Body has confirmed the "customary rules of interpretation" referred to in Article 3.2 of the DSU include Article 31, 32,[120] and also Article 33 VCLT.[121]

Rules of interpretation

Following Article 31 VCLT, an analysis of GATT provisions must be made "in good faith, in accordance with the ordinary meaning to be given to terms of the treaty in their context and in the light of its object and purpose."[122] We must take the text of the treaty read in its context as a starting point for interpretation.[123] In this sense, "context" can include, for instance, the preamble to the Treaty,[124] as well as the subsequent agreements and practices of the concerned Party countries.[125] What we must be careful to avoid, according to Article 19.2 DSU, is to wrongly "add or diminish the rights and obligations provided in the covered agreements," as this would be contrary to the signatories' intention under the GATT.[126] What we are called to engage in, is an "objective assessment" of the hypothetical case before us, including its facts and applicability to WTO Agreements.[127]

Justifying export restrictions under Article XI:2(a) of the GATT 1994

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[120] *United States – Standards for Reformulated and Conventional Gasoline (Complaint by Brazil and Venezuela)* (1996), WTO Doc WT/DS2/AB/R (Appellate Body Report) at 16-17, online (pdf): <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/WT/DS/2ABR.pdf&Open=True >; *United States – Import Prohibition on Certain Shrimp and Shrimp Products (Complaint by India, Malaysia, Pakistan and Thailand)* (1998), WTO Doc WT/DS58/AB/R (Appellate Body Report) at para 114, online (pdf): <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/WT/DS/58ABR.pdf&Open=True>

[121] *United States – Final Countervailing Duty Determination With Respect to Certain Softwood Lumber From Canada* (2004), WTO Doc WT/DS257/AB/R (Appellate Body Report) at para 59, online (pdf): < https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/WT/DS/257ABR.pdf&Open=True>

[122] United Nations, *Vienna Convention on the Law of Treaties* (Vienna 1969), Article 31(1)

[123] *United States – Import Prohibition of Certain Shrimp and Shrimp Products (Complaint by India, Malaysia, Pakistan, Thailand)* (1998), *supra* note 126 at para 114

[124] United Nations, *Vienna Convention on the Law of Treaties* (Vienna 1969), Article 31(2)

[125] *Ibid*, Article 31(3)

[126] WTO, *Understanding on rules and procedures governing the settlement of disputes (DSU),* Marrakesh Agreement Establishing the World Trade Organization (1994) at Article 19.2, online: <https://www.wto.org/english/tratop_e/dispu_e/dsu_e.htm>

[127] *Ibid* at Article 11

First, I will examine whether Canadian authorities could justify denying authorisation to Quebec hydroelectricity exports under Article XI:2(a) of the GATT 1994, if such actions potentially breach Article XI:1. In line with the *Indonesia – Raw Materials* case, it must be determined whether the decision to restrict Quebec hydroelectricity exports satisfies the conditions of Article XI:2(a).[128] If it does, the restrictions will be considered compliant with Article XI:1 and, consequently, with the GATT 1994. If not, the decision to restrict exports is likely to be deemed inconsistent with Article XI:1.

So, would Canadian authorities' decision to restrict exports of Quebec hydroelectricity meet the conditions of Article XI:2(a) of the GATT 1994?

To prove that their decision meets the conditions of Article XI:2(a) of the GATT 1994, following *Indonesia – Raw Materials*, Canadian authorities must show that their export restriction or prohibition concerns a product that is essential to their territory and that the measure is applied only temporarily to prevent or relieve a critical shortage of this essential product.[129]

Quebec would therefore need to prove the following elements: that its export revocation powers are (a) temporarily applied to prevent or relieve (b) a critical shortage of (c) an essential product. I take these elements in turn, taking account that our analysis should consider "the nexus between the different elements contained in Article XI:2(a)"[130] since they "impart meaning to each other." [131]

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[128] *Indonesia – Measures Relating to Raw Materials (Complaint by the European Union)* (2022), *supra* note 118 at para 7.25
[129] *General Agreement on Tariffs and* Trade 1994, Article X1:2(a); *Indonesia – Measures Relating to Raw Materials (Complaint by the European Union)* (2022), *supra* note 134 at para 7.22
[130] *China – Measures Related to the Exportation of Various Raw Materials (Complaint by the United States, the European Union and Mexico)* (2012), *supra* note 116 at para 328
[131] *Ibid*

Ambit

To fall under the ambit of Article X1:2(a) of the GATT 1994, Canadian authorities' restrictions on exports of hydroelectricity must be taken only to "relieve critical situations with respect to the supply of electricity", and must not simply consist of a restrictive measure with the more general aim of "safeguarding the security of the national electricity system".[132] Of course, the act of relieving a critical (hydro)electricity supply situation can be an act to safeguard the security of a national power grid. But could the measure meet the conditions of Article XI:2(a) to show that it is not just a general safeguard but rather a real measure taken temporarily to relieve a critical situation?

An essential product

For Canadian authorities' export revocation powers to fall within the scope of Article XI:2(a), it must first be proved that electricity is an 'essential' product. This limb of the test should not cause much trouble to Canada. First, as seen previously, electricity is considered a 'good' under WTO law and 'good' and 'product' could be interchangeable. Indeed, a product is defined as "a thing generated or produced by, or as if by, nature or a natural process."[133] It must therefore be proven that Quebec hydroelectricity is an 'essential' product. The essentialness of a product must be determined on a case-by-case basis.[134] Nevertheless, a

[132] Christopher Frey, *supra* note 7 at 194
[133] *China – Measures Related to the Exportation of Various Raw Materials* (*Complaint by the United States, the European Union and Mexico)* (2011), WTO Doc WT/DS394/R, WT/DS395/R, WT/DS398/R (Panel Report) at para 7.274, online (pdf): <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/WT/DS/398R.pdf&Open=True>
[134] *Ibid* at para 7.277
[134] *Ibid* at para 7.279

product that is 'essential' is one that is 'important', 'necessary' or 'indispensable' to a Member[135] at the time that it imposed the trade restrictive measure that it seeks to justify under the GATT. In the present case, it is arguably no doubt that hydroelectricity is a product 'essential' to Canadian authorities. Indeed, we now depend upon electricity for almost all aspects of our everyday lives,[136] as it powers crucial sectors including healthcare, education, government operations, residential areas, and businesses. Indeed, while "for centuries the only sources of energy were the muscles of man and beast,"[137] the use of energy power, most especially electricity, has contributed to the rise of living standards. Electricity effectively became "the 'oxygen' of the economy,"[138] a tool that could be used to promote the creation of jobs and the status of women,[139] and crucially, a tool access to which is increasingly deemed to be an enforceable human right.[140]

A critical shortage

For a GATT-inconsistent measure to be justified under Article XI:2(a), it needs to be proven to be designed "to prevent or relieve critical shortages"[141] of an essential product. This second limb of the test is harder to meet than the first.

First, when can a Canadian authority's decision to deny authorisation of exports of hydroelectricity be said "to prevent or relieve" some type of situation from a given burden? Since these verbs have been found to refer, respectively, to the acts of 'stopping from

[135] Christopher Frey, *supra* note 7 at 188; *China – Measures Related to the Exportation of Various Raw Materials* (*Complaint by the United States, the European Union and Mexico)* (2011), *supra* note 139
[136] Christopher Frey, *supra* note 7 at 3
[137] Environmental Policy of the Division Legislative Reference Service of the Library of Congress, *The Economy, Energy and the Environment – A Background Study Prepared for the use of the Joint Economic Committee Congress of the United States,* (US Government Printing Office, Washington 1970) at 1, online (pdf): <https://files.eric.ed.gov/fulltext/ED075163.pdf>
[138] Rafael Leal-Arcas, Dr. Ehab Abu Gosh & Andrew Filis, *supra* note 13 at 16
[139] *Ibid* at 15
[140] Stephen Tully, "The Human Right to Access Electricity" (2006) 19:3 The Electricity Journal 30, at 30
[141] *General Agreement on Tariffs and* Trade, 1944, Article XI:2(a)

happening' or 'raising our of some trouble,'[142] Article XI:2(a) has been found to include "preventive or anticipatory measures adopted to pre-empt an imminent critical shortage."[143] But what exactly constitutes a critical shortage?

The term 'a critical shortage' has been interpreted by the WTO Appellate Body to be "those deficiencies in quantity that are crucial […] or that reach a vitally important or decisive stage, a turning point."[144] The shortage should be "grave", or even rising to the level of a "crisis.""[145] In Quebec, situations of critical shortage of electricity generation capacity can occur, due for instance to "exceptionally low water levels in hydro reservoirs."[146] In such scenarios, there is little doubt that these shortages could be considered 'grave' or constitute a 'crisis,' given the severe impact of power cuts on those affected.

The 'critical shortage' limb of the Article XI:2(a) test must be understood in the context of the other clauses in the GATT to better understand its object and purpose. Indeed, this contextual interpretation should help to ensure a comprehensive understanding of how trade restrictions are evaluated and applied in different ways within the framework of the GATT. On one side, Article XX(j) refers to 'short supply' which has been found to be "similar" to 'shortage'.[147] However, in the Appellate Body's opinion, the adjective 'critical' in Article XI:2(a) renders its grounds narrower than that of Article XX(j).[148] The 'critical shortage' under Article XI:2(a) does not simply refer to a situation where hydropower resources are 'scarce,'

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[142] *China – Measures Related to the Exportation of Various Raw Materials (Complaint by the United States, the European Union and Mexico)* (2012), *supra* note 116 at para 327
[143] *Ibid* at para 327
[144] Christopher Frey, *supra* note 7 at 188; *China – Measures Related to the Exportation of Various Raw Materials (Complaint by the United States, the European Union and Mexico)* (2012), *supra* note 116 at para 324
[145] *China – Measures Related to the Exportation of Various Raw Materials* (*Complaint by the United States, the European Union and Mexico)* (2011), *supra* note 139 at para 7.296
[146] Christopher Frey, *supra* note 7 at 189
[147] *China – Measures Related to the Exportation of Various Raw Materials (Complaint by the United States, the European Union and Mexico)* (2012), *supra* note 116 at para 325
[148] *Ibid*

but rather one that is truly 'critical,' meaning Quebec would be at genuine risk of power cuts unless export restrictions were imposed to address the shortage.

The relevant question is not whether a critical shortage of Quebec hydroelectricity can occur, but rather what level of shortage is required for Quebec to qualify under the clause. An intriguing aspect is whether Canada can justify restricting Quebec electricity exports due to a critical shortage in Ontario. In such a case, the critical shortage would not pertain to Quebec's hydroelectricity, which is the focus, but rather to Ontario's energy supply. However, since Canada is making its case at the federal level, with the federal government holding authority over electricity exports and representing all provinces, it could reasonably argue before a WTO panel that a critical shortage in Quebec, Ontario, or any other province falls within the scope of Article XI:2(a).

Moreover, when interpreting 'critical shortage' alongside the term 'temporarily applied,' it is important to note that the WTO panel in *China – Raw Materials* agreed with the argument presented by the EU that:

"if there is no possibility for an existing shortage ever to cease to exist, it will not be possible to "relieve or prevent" it through an export restriction applied on a temporary basis. If a measure were imposed to address a limited reserve of an exhaustible natural resource, such measure would be imposed until the point when the resource is fully depleted."[149]

Thus, here there is a clear distinction between the avenue under Article XI:2(a) and the one under Article XX(g). If an export restriction pertains to an exhaustible natural resource, it cannot satisfy Article XI:2(a)'s requirement of being 'temporary.' In such cases, the only

[149] *China – Measures Related to the Exportation of Various Raw Materials* (*Complaint by the United States, the European Union and Mexico)* (2011), *supra* note 139 at para 7.297

recourse to justify the violation of Article XI is Article XX(g). Conversely, if the export restriction does not involve an exhaustible natural resource, recourse may be made to Article XI:2(a).

This quote is interesting when interpreted and applied to the context of electricity. Although hydroelectricity is not an exhaustible natural resource, being the product of a human process, its source—water—undeniably is an exhaustible natural resource. Indeed, despite water being renewable according to biological laws, the critical factor is the ratio of extraction relative to the regeneration rate. If the rate of extraction exceeds the rate of regeneration, the resource is exhaustible. Therefore, the sustainability of hydroelectricity depends on maintaining a balance between water extraction and its natural replenishment.

So, in the case of a critical shortage of Quebec hydroelectricity, is there a possibility that such a shortage would ever cease to exist, thanks to the relief provided by the export restrictions? The answer would seem to depend on a range of factors, including the demand for hydroelectricity, the management of Hydro-Quebec dams and river water levels, and potential changes to the hydraulic cycle brought by climate change which would impact Quebec water levels. On this basis, then, it is unclear whether a situation of critical shortage of Quebec hydroelectricity could ever be ‘relieved’ by the export revocation, especially if such revocation of exports is not correlated with a restriction on hydroelectricity generation. In this context, Quebec may struggle to prove the existence of a 'critical shortage' of electricity within its borders.

Temporarily applied

A measure temporarily applied addresses a 'passing need,'[150] to which there is no associated time-limit.[151] In other words, a measure falling under the ambit of Article XI:2(a) may include long-term export restrictions if they are 'temporarily applied'.[152] In the present case, neither the provincial nor federal hydroelectricity export revocation powers specify how long they can be imposed for. In any case, the amount of time that Quebec needs to prevent or relieve a critical shortage of hydroelectricity is directly linked to the hydraulic cycle. Indeed, the water replenishment rate is entirely dependent on both the extraction and refuellling rates at a given geographical location.[153] Thus, the time needed for replenishment of water reserves is directly linked to that water replenishment rate, which importantly, cannot be ascertained. Accordingly, then, and in consideration of the fact that Canada's domestic demand for electricity will only rise in the future, relieving or preventing the critical shortage of electricity available for use by domestic consumers would require the export ban to be applied for an unspecified amount of time. Would this be consistent with Article XI:2(a)?

It might be useful here to contrast Quebec's situation with China's in the case of *China - Raw materials*, where China's export ban on refractory-grade bauxite was applied for over a decade "with no indication of when it will be withdrawn and every indication that it will remain in place until the reserves have been depleted,"[154] and therefore not 'temporarily'. In this case, the panel found grounds to believe that China's estimate of a 16 year reserve for refractory-grade bauxite was not enough to constitute a 'crisis' situation, most notably because of a strong possibility, in its view, of China encountering new reserves due for instance to advancements

[150] *China – Measures Related to the Exportation of Various Raw Materials (Complaint by the United States, the European Union and Mexico)* (2012), *supra* note 116 at para 323
[151] *Ibid* at para 331
[152] *Ibid* at para 332
[153] Alexandre Stamford da Silva & Fernando Menezes Campello de Souza, *supra* note 82 at 43
[154] *China – Measures Related to the Exportation of Various Raw Materials* (*Complaint by the United States, the European Union and Mexico)* (2011), *supra* note 139 at para 7.350

in extraction techniques.[155] If Canada were to claim a critical shortage, there is a strong possibility that a WTO Panel would determine that the end of its hydroelectricity surpluses does not constitute a 'crisis,' as Canada has the option to increase its electricity supply, for example, by building new dams or developing alternative energy sources to address the shortage. In other words, meeting this 'critical shortage' limb of the Article XI:2(a) test does not represent an easy task for Canada.

Noting that it is uncertain whether Canadian authorities would meet the requirements of Article XI:2(a), they could seek to invoke Article XX of the GATT to justify the inconsistency of their export revocation powers with Article XI:1 when recourse to Article XI:2(a) fails.[156]

Justifying export restrictions under Article XX of the GATT 1994

Framework for Article XX analysis

Could Canadian authorities' violation of Article XI:1 of the GATT 1994 through the restriction on exports of Quebec hydroelectricity nevertheless be justified under the GATT 1994 through its exception provisions contained in Article XX(g) or (j)?

As a reminder, Article XX of the GATT 1994 provides:

[155] *China – Measures Related to the Exportation of Various Raw Materials* (*Complaint by the United States, the European Union and Mexico)* (2011), *supra* note 139 at para 7.351
[156] Christopher Frey, *supra* note 7 at 189; *China – Measures Related to the Exportation of Various Raw Materials (Complaint by the United States, the European Union and Mexico)* (2012), *supra* note 116 at para 334

Article XX of the GATT 1994 – General Exceptions

Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures: […]

(g) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption; […]

(j) essential to the acquisition or distribution of products in general or local short supply; *provided* that any such measures shall be consistent with the principle that all contracting parties are entitled to an equitable share of the international supply of such products, and that any such measures, which are inconsistent with the other provisions of the Agreement shall be discontinued as soon as the conditions giving rise to them have ceased to exist. […]"

At this stage, it is useful to note that an analysis under Article XX of the GATT 1994 is two-tiered, including firstly an examination of whether a 'measure' is one that falls within the ambit of any of Article XX's subparagraphs, and secondly a ruling on whether the measure would satisfy the requirements of the 'chapeau' of Article XX of the GATT 1994 (or, in other words, to the requirements of Article XX's opening paragraph).[157] In other words, to meet the requirements of Article XX of the GATT 1994, the application of a measure justified under any of Article XX's subparagraphs must not constitute arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on trade.

[157] *United States – Standards for Reformulated and Conventional Gasoline* (*Complaint by Brazil and Venezuela)* (1996), *supra* note 126 at 22; *United States – Import Prohibition of Certain Shrimp and Shrimp Products (Complaint by India, Malaysia, Pakistan, Thailand)* (1998), *supra* note 126 at paras 119-121

Article XX(g) of the GATT 1994

Canada might argue that restrictions on exports of Quebec hydroelectricity deemed inconsistent with Article XI:1 are nevertheless justified under Article XX(g) of the GATT 1994. For this, it would need to argue that its restrictions are (1) related to the conservation of an exhaustible natural resource, and (2) enacted in conjunction with restrictions on domestic consumption of that resource.[158] I take these elements in turn.

A measure 'relating to' the conservation of an exhaustible natural resource

It must first be proven that Canadian authorities' restrictions on the exports of Quebec hydroelectricity relate to the conservation of an exhaustible natural resource. For this, a WTO panel can be expected to examine the design and structure[159] of the decision to restrict or not to allow exports, to rule on whether the measure is 'primarily aimed at' the conservation of an exhaustible natural resource.[160] In other words, Canada would need to prove that there is a real relationship of ends and means between its decision to restrict exports and its aim to conserve an exhaustible natural resource. For the purposes of our analysis, I adopt the definition of "conservation" as established by the Panel in the leading case of *China – Rare Earths,* which defines it as "the act of preserving and maintaining the existing state of something."[161] It may

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[158] *China – Measures Related to the Exportation of Various Raw Materials (Complaint by the United States, the European Union and Mexico)* (2012), *supra* note 116 at para 460
[159] Simon Lester, Bryan Mercurio & Arwel Davies, *World Trade Law: Text, Materials and Commentary* (3rd edn, Hart Publishing 2018) at 379
[160] *China – Measures Related to the Exportation of Rare Earths, Tungsten, and Molybdenum* (*Complaint by the United States, the European Union and Japan)* (2014), WTO Doc WT/DS431/R, WT/DS432/R, WT/DS433/R (Panel Report) at para 348, online (pdf): <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/WT/DS/431R.pdf&Open=True>
[161] *China – Measures Related to the Exportation of Rare Earths, Tungsten, and Molybdenum* (*Complaint by the United States, the European Union and Japan)* (2014), *supra* note 166 at para 348, online (pdf): <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/WT/DS/431R.pdf&Open=True>; *China –*

be useful to note, in this context, that respect of living natural resources, the act of 'conservation' "may encompass not only limiting or halting the activities creating the danger of extinction, but also facilitating the replenishment of that endangered species."[162] So, can Canada prove that a decision to restrict exports of hydroelectricity is primarily aimed at the conservation of an exhaustible natural resource?

Frey argues that "electricity itself cannot be qualified as an 'exhaustible natural resource' as […] [it] lacks the qualities of a *natural* resource."[163] Accepting this argument, I propose that Canada might rather argue that the *source* of hydroelectricity, water, is an exhaustible natural resource. Indeed, it has been confirmed that an 'exhaustible natural resource' may include renewable resources, such as clean air.[164] By analogy, it would therefore seem reasonable to assume that dammed Quebec rivers could be deemed, as air, to be an exhaustible natural resource that can be depleted if its water replenishment rate exceeds its water extraction rate.

So, can Canadian authorities' decision to restrict exports of Quebec hydroelectricity be said to 'relate to' the conservation of its local (damned) rivers? Is there a real relationship of ends and means between Canadian authorities' decision to restrict exports of Quebec hydroelectricity and the aim of conserving its rivers? To determine this, the design and structure of the measure itself must be examined.[165] In *China – Raw Materials*, the Panel held that the

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Measures Related to the Exportation of Various Raw Materials (*Complaint by the United States, the European Union and Mexico)* (2011), *supra* note 139 at para 7.372; *United States – Import Prohibition of Certain Shrimp and Shrimp Products (Complaint by India, Malaysia, Pakistan, Thailand)* (1998), *supra* note 126 at para 153

[162] *China – Measures Related to the Exportation of Rare Earths, Tungsten, and Molybdenum* (*Complaint by the United States, the European Union and Japan)* (2014), WTO Doc WT/DS431/AB/R, WT/DS432/AB/R, WT/DS433/AB/R (Appellate Body Report) at para 5.113, online (pdf): <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/WT/DS/431R.pdf&Open=True>

[163] Christopher Frey, *supra* note 7 at 190

[164] *United States – Standards for Reformulated and Conventional Gasoline* (*Complaint by Brazil and Venezuela)* (1996), *supra* note 126 at 22

[165] *China – Measures Related to the Exportation of Various Raw Materials* (*Complaint by the United States, the European Union and Mexico)* (2011), *supra* note 136 at para 7.418

measure in question did not "refer to the goal of conservation."[166] Rather, the measure seemed only directed at ensuring a security of supply of electricity on the market, without taking any account of environmental conservation objectives. Moreover, the Panel in *China – Raw Materials* was concerned that any type of export restriction "may have long-term negative effects on conservation due to the increased demand from the downstream sector."[167] In other words, the Panel took the view that the possibility of export restrictions negatively affecting conservation through increasing domestic consumption constitutes a real possibility. In such cases, then, an export restriction could not be deemed to relate to a conservation objective. In the words of the Panel: "a policy of restricting extraction would be more in line with a policy to achieve conservation than one confined to restricting exports. For conservation of a resource, it is not relevant whether the resource is consumed domestically or abroad; what matters is its pace of extraction."[168]

In sum, given the above, Canadian authorities might have real difficulty in proving that their decision to restrict exports of Quebec hydroelectricity 'relates to' the 'conservation' of an exhaustible natural resource. However, I will still take the time to address the second question of whether Canadian authorities' decision to restrict exports of Quebec hydroelectricity can be said to be 'made effective in conjunction with restrictions on domestic production or consumption'.

Enacted in conjunction with restrictions on domestic production or consumption

[166] *China – Measures Related to the Exportation of Various Raw Materials* (*Complaint by the United States, the European Union and Mexico)* (2011), *supra* note 136 at para 7.418
[167] *Ibid* at para 7.430
[168] *China – Measures Related to the Exportation of Various Raw Materials* (*Complaint by the United States, the European Union and Mexico)* (2011), *supra* note 136 at para 7.428

Can Canadian authorities prove that their decision to restrict exports of Quebec hydroelectricity is made effective in conjunction with restrictions on domestic production or consumption? This limb of the Article XX(g) test requires that, for export restrictions to fall under XX(g), "effective restrictions must also be imposed on domestic production or consumption"[169] and "such restrictions must be 'real' rather than existing merely 'on the books.'"[170] In this context, I note that Hydro-Québec has recently strongly emphasised the importance of energy efficiency measures, which it has integrated in its Strategic Plan.[171] It is also marketing, for instance, the Hilo service, which enables Hydro-Quebec customers to save energy in exchange for rewards, for instance by reducing their consumption of electricity at times of peak demand.[172] Through such efforts of pursuing energy efficiency, Hydro-Quebec projects that Quebec could save 8.2 TWh of energy by the year of 2029.[173]

Firstly, the Quebec Government seeks to promote an efficient use of existing energy by Quebecers in order not to waste any MW of electricity.[174] In fact, Hydro-Quebec might have a very large margin to promote efficient energy use by Quebecers. First, Quebec has been reported to waste around 49% of the energy that it used in 2020.[175] Moreover, the province ranks "first in Canada for per capita electricity consumption and consumed 60% more than the

[169] *China – Measures Related to the Exportation of Rare Earths, Tungsten, and Molybdenum* (*Complaint by the United States, the European Union and Japan)* (2014), WTO Doc WT/DS431/AB/R, WT/DS432/AB/R, WT/DS433/AB/R at para 5.136, online (pdf): <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/WT/DS/431ABR.pdf&Open=True>
[170] *China – Measures Related to the Exportation of Rare Earths, Tungsten, and Molybdenum* (*Complaint by the United States, the European Union and Japan)* (2014), *supra* note 166 at para 5.136
[171] Hydro-Québec, *supra* note 3 at 21
[172] Hydro-Québec, "A Smart Home That Gives You More", online: <https://www.hiloenergie.com/en-ca/our-service/>
[173] Hydro-Québec, *supra* note 3 at 21
[174] *Ibid*
[175] Francis Hébert-Bernier, "Le Québec Gaspille la Moitié de son Énergie" *Pivot* (14 February 2023), online: <https://pivot.quebec/2023/02/14/le-quebec-gaspille-la-moitie-de-son-energie/#:~:text=a%20perdu%20environ%20960%20pétajoules,année%2C%20explique%20l%27analyse>

national average."[176] But also, in 2021, the average electricity consumption per person in Quebec amounted to 191 gigajoules, a figure significantly higher than the global average of 54 gigajoules per person. Quebec's high electricity consumption rate is said to be due to its aluminium smelters.[177] However, the burden does not only fall on industrial consumers to take measures to improve energy efficiency: Hydro-Quebec has begun to market its app called Hilo,[178] which enables users to save money on their electricity bill by responding to challenges on the app, which could include, for instance, the challenge of not using electricity-heavy appliances at peak times. In marketing Hilo as a new "virtual power plant […] powered by consumers,"[179] Hydro-Quebec seems confident in the potential of the scheme to generate energy savings. Moreover, Bill 69 adds to this framework by providing that the Régie de l'énergie will have the legal obligation, from April 2026 onwards, to provide financial incentives, through a tariff structure, to consumers to lower their domestic consumption at peak times.[180]

Can such efforts by Hydro-Quebec be deemed to be 'restrictions on domestic consumption' for the purposes of Article XX(g) of the GATT 1994? I posit that it is unclear whether a panel might rule against Quebec, contending that its energy efficiency measures are not enough to constitute 'real' restrictions on domestic consumption in the absence of legally mandated energy saving habits. Furthermore, Quebec is grappling with a pronounced surge in electricity

[176] Canada Energy Regulator, *Provincial and Territorial Energy Profiles – Quebec,* online: <https://www.cer-rec.gc.ca/en/data-analysis/energy-markets/provincial-territorial-energy-profiles/provincial-territorial-energy-profiles-quebec.html>
[177] Youri Chassin, *Quebec's Energy Reality* (Montreal Economic Institute, Economic Note April 2013) at 3, online (pdf): <https://www.iedm.org/files/note-energy-quebec13.pdf>
[178] Hydro-Québec, "Hilo's Mission", online: <https://www.hiloenergie.com/en-ca/our-mission/>
[179] *Ibid*
[180] Bill n° 69: *An Act to ensure the responsible governance of energy resources and to amend various legislative provisions*, 1st Sess, 43th Leg, Quebec, 2024 (presented 6 June 2024), Article 130

demand, and, despite disagreements with former Hydro-Quebec CEO Sophie Brochu,[181] Prime Minister Legault has not ruled out the construction of new dams.[182] Further, it is unclear whether 'domestic production or consumption' should refer only to the Quebec market or to the whole of the Canadian market. Given all the above, it is unclear how Quebec might prove that a decision to restrict exports of hydroelectrity is "made effective in conjunction with restrictions on domestic production or consumption." Moreover, I note that Canada would have difficulty making this argument in relation to the whole of its territory, which, given its size, is effectively composed of multiple provincial electricity markets.

In sum, justifying the inconsistency of a decision to deny authorization for Quebec hydroelectricity exports with Article XI:1 of the GATT 1994 under Article XX(g) presents its challenges. To qualify under this exception, a measure must genuinely relate to the conservation of an exhaustible natural resource, rather than primarily focusing on securing a stable electricity supply without explicit environmental conservation objectives. Additionally, it is unclear how Canada might justify that its restrictions on Quebec hydroelectricity exports are "enacted in conjunction with restrictions on domestic production or consumption," considering the specific market and Quebec's hydroelectricity consumption habits.

Article XX(j) of the GATT 1994

Canada might seek to justify the inconsistency of its restrictions on exports of Quebec hydroelectricity with Article XI:1 of the GATT 1994 under Article XX(j) of the GATT 1994.

[181] Alexis Riopel, "Hydro-Québec: où se situaient les désaccords entre Sophie Brochu et le gouvernement?" *Le Devoir* (14 January 2023), online: <https://www.ledevoir.com/societe/777811/crise-energetique-hydro-quebec-ou-se-situaient-les-desaccords-entre-sophie-brochu-et-le-gouvernement>
[182] Ministère de l'Économie, de l'Innovation et de l'Énergie du Québec, "Hydroélectricité" (5 December 2022), online: <https://www.economie.gouv.qc.ca/bibliotheques/le-secteur/hydroelectricite>

Following the Appellate Body in *India – Solar Cells*, to justify its measure under Article XX(j), Canada would first need to establish that its export restrictions, through their design and structure, are capable of addressing "the acquisition or distribution of products in local or short supply."[183] Secondly, Canada would need to prove that its measure is 'essential' to the acquisition or distribution of products in local or short supply.[184] I therefore take these elements in turn, due regard being given to the fact that application of Article XX(j) is subject to the requirement that the measure "shall be consistent with the principle that all Members are entitled to an equitable share of the *international supply* of such products."[185] In interpreting Article XX(j), then, my analysis will, as required by *India – Solar Cells*, seek to be "holistic in nature."[186]

Limb 1: Could Canada successfully argue, firstly, that its export restrictions are capable of addressing "the acquisition or distribution of products in general or local short supply"?

It must firstly be established that there are, in our scenario, products in general or local 'short supply'. Following *India – Solar Cells,* the wording of 'short supply' would entail that the products at hand must be "available only in limited quantity,"[187] and refers to products of which there is, essentially, a shortage.[188] Establishing that there is a shortage of electricity under Article XX(j) should be easier than under Article XI:2(a), where the shortage had to be 'critical'

[183] *General Agreement on Tariffs and* Trade 1994, Article XX(j)
[184] *India – Certain Measures Relating to Solar Cells and Solar Modules (Complaint by the United States)* (2016), WTO Doc WT/DS456/AB/R (Appellate Body Report) at para 5.57, online (pdf); <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/WT/DS/456ABR.pdf&Open=True>
[185] *General Agreement on Tariffs and* Trade 1994, Article XX(j)
[186] *India – Certain Measures Relating to Solar Cells and Solar Modules (Complaint by the United States)* (2016), *supra* note 191 at para 5.64
[187] *Ibid* at para 5.65; *China – Measures Related to the Exportation of Various Raw Materials (Complaint by the United States, the European Union and Mexico)* (2012), *supra* note 116 at para 325
[188] *India – Certain Measures Relating to Solar Cells and Solar Modules (Complaint by the United States)* (2016), *supra* note 191 at para 5.65

to fall within the provision's ambit. However, the threshold for a 'short supply' still has to be met. Would Canadian authorities' imposition of export restrictions meet this condition?

There is firstly a geographical element to this. The Appellate Body in *India – Solar Cells* established that, in examining whether there is in fact a shortage of general or local supply, one must not only consider the production capacity for electricity within the Quebec market, but also consider the quantity of electricity that is available for purchase on other markets that could be used to satisfy domestic demand for the product.[189] There is also a temporal element to this. Indeed, Article XX(j) provides that measures inconsistent with the GATT and seeking to be justified under Article XX(j) must be "discontinued as soon as the conditions giving rise to them have ceased to exist."[190] In interpreting this provision, the Appellate Body in *India – Solar Cells* expressed the view that an interpreter should not only consider "whether there is a mathematical difference at a single point in time between demand and the quantity of supply that is "available" for purchase in a particular geographical area or market."[191] Rather, the analysis should contain a "holistic consideration of trends in supply and demand as they evolve over time, as well as whether the conditions giving rise to short supply have ceased to exist."[192]

Regarding the availability of electricity in foreign markets, it is noteworthy that Hydro-Quebec is considering converting its new transmission lines to the U.S. to allow for two-way electricity flows, thereby making import of electricity from Northeast America to Quebec possible. However, the eventual return of Donald Trump as US president this year of 2024,

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[189] *India – Certain Measures Relating to Solar Cells and Solar Modules (Complaint by the United States)* (2016), *supra* note 191 at paras 5.68-69
[190] *General Agreement on Tariffs and* Trade 1994, Article XX(j)
[191] *India – Certain Measures Relating to Solar Cells and Solar Modules (Complaint by the United States)* (2016), *supra* note 191 at para 5.70
[192] *Ibid*

raises the question of whether the credits afforded to US companies under the IRA will stand.[193] It is therefore also unclear to what extent Northeast America will be able to develop its own renewable sources of energy which it could then export to Quebec within the amount of time necessary to remedy Quebec's short supply problem. In this sense, it is unclear whether the international supply of electricity that Quebec might technically have access to is actually "stable and accessible."[194] It is also difficult to assess what price Quebecers would have to pay for such imported electricity; while it can safely be assumed that this price would be higher than the one they are currently paying, the question remains: how much higher? In this sense, Quebec might have a real chance to argue that there is, in fact, a short supply of electricity in the province since the accessibility of electricity on other markets cannot be relied upon. The above considerations, combined with our analysis of the 'temporarily applied' element under Article XI:2(a) of the GATT 1994, may lead a WTO Panel to conclude that it is unclear when the conditions would be met for the shortage to cease to exist.

To sum up, it is likely that a WTO Panel would find that Canadian authorities' decision to deny authorisation of hydroelectricity exports is not capable of addressing the acquisition or distribution of products in general or local short supply. Where this first limb of the test is not met, following *India – Solar Cells,* a measure cannot be justified under Article XX(j) of the GATT 1994 and it would not be necessary for a panel to conduct an analysis of whether the measure is in fact 'essential' to the acquisition or distribution of products in general or local short supply.[195] However, I engage in this discussion for the purposes of our analysis.

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[193] Jaime Smyth and Aime Williams, "Donald Trump Would Gut Joe Biden's Landmank IRA Climate Law if Elected" *The Financial Times* (22 November 2023), online: < https://www.ft.com/content/ed4b352b-5c06-4f8d-9df7-1b1f9fecb269 >

[194] *India – Certain Measures Relating to Solar Cells and Solar Modules (Complaint by the United States)* (2016), *supra* note 191 at para 5.71

[195] *India – Certain Measures Relating to Solar Cells and Solar Modules (Complaint by the United States)* (2016), *supra* note 191 at para 5.60

Limb 2: Could Canadian authorities successfully argue that its measure is 'essential' to the acquisition or distribution of products in general or local short supply?

As the Panel in *India – Solar Cells*, I here assume that a WTO panel would be likely to at least accept that there is a "risk of disruption"[196] in the supply of electricity in Quebec. The key question, then, is whether Canadian authorities can successfully argue that restricting hydroelectricity exports is 'essential' to the acquisition or distribution of products in general or local short supply, and whether this decision effectively reduces the risk of electricity supply disruptions in Quebec.[197] It would not, in the Panel's view, be necessary to show that such risks are "imminent."[198]

The Appellate Body in *India – Solar Cells* interpreted that "the threshold for establishing that a measure is "essential" under Article XX(j) is at least the same as for establishing that a measure is "necessary"" as interpreted under Article XX(a), XX(b) and XX(d) of the GATT 1994.[199] In the WTO's view, a measure is "necessary" or "essential" if it is 'indispensable' rather than simply 'making a contribution to'[200] a certain objective. Here, the key question for Canadian authorities in terms of whether their decision to restrict exports of Quebec hydroelectricity is 'essential' within the meaning of Article XX(j) of the GATT 1994 rests on whether such restrictions would be 'indispensable' for reducing the risk of disruption in Quebec's electricity supply triggered by the end of its electricity surpluses.

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[196] *India – Certain Measures Relating to Solar Cells and Solar Modules (Complaint by the United States)* (2016), *supra* note 191 at para 7.338
[197] *Ibid* at para 7.342
[198] *Ibid* at para 7.347
[199] *Ibid* at paras 7.348-7.349
[200] *Ibid* at para 5.62

Following the leading case of *India – Solar Cells,* our analysis of whether Canadian authorities' restrictions on exports of Quebec hydroelectricity are 'essential' to the acquisition or distribution of products, should be two-tiered. First, there must be a "holistic weighing and balancing process of a series of factors, which must include the importance of the objective, the trade-restrictiveness of the measure, and the contribution of the measure to the objective."[201] Second, it must be assessed whether there exists a less WTO-inconsistent or WTO-consistent alternative measure that is "reasonably available" to Quebec in order to achieve its objective.[202] I take these elements in turn.

An objective

Canadian authorities' stated objective here is understandably to reduce the risk of a shortage in the supply of electricity that may negatively affect the Quebec population through eventual power cuts. It is important to note that the quantification of this risk is not required for such risk to fall under the scope of the provision.[203] Rather, the "risk may be evaluated

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[201] *India – Certain Measures Relating to Solar Cells and Solar Modules (Complaint by the United States)* (2016), *supra* note 191 at para 7.349; *Korea – Measures Affecting Imports of Fresh, Chilled and Frozen Beef* (*Complaint by Australia and the United States)* (2000), WTO Doc WT/DS161/AB/R, WT/DS169/AB/R (Appellate Body Report) at para 164, online (pdf): <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/WT/DS/169ABR.pdf&Open=True>; *United States – Measures Affecting the Cross-Border Supply of Gambling and Betting Services (Complaint by Antigua),* WTO Doc WT/DS285/AB/R (Appellate Body Report) at para 306, online (pdf): <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/WT/DS/285ABR.pdf&Open=True>; *Brazil – Measures Affecting Imports of Retreaded Tyres (Complaint by the European Communities)* (2007), WTO Doc WT/DS332/AB/R (Appellate Body Report) at para 182, online (pdf): <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/WT/DS/332ABR.pdf&Open=True>

[202] *India – Certain Measures Relating to Solar Cells and Solar Modules (Complaint by the United States)* (2016), *supra* note 191 at para 7.349; *Korea – Measures Affecting Imports of Fresh, Chilled and Frozen Beef* (*Complaint by Australia and the United States)* (2000), *supra* note 208 at para 166; *European Communities – Measures Prohibiting the Importation and Marketing of Seal Products (Complaint by Norway and Canada)* (2013), WTO Doc WT/DS400/R, WT/DS401/R (Panel Report) at para 5.261, online (pdf): <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/WT/DS/400R.pdf&Open=True>

[203] *European Communities – Measures Affecting Asbestos and Asbestos-Containing Products (Complaint by Canada)* (2000), WTO Doc WT/DS135/R at para 8.188 (Panel Report), online (pdf): <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/WT/DS/135R-00.pdf&Open=True>; *European Communities – Measures Affecting Asbestos and Asbestos-Containing Products (Complaint by Canada)* (2000), WTO Doc WT/DS135/AB/R (Appellate Body Report) at para 167, online (pdf): <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/WT/DS/135ABR.pdf&Open=True>

either in quantitative or qualitative terms."[204] In the case of Quebec, I here submit that a WTO panel could accept that its stated risk of a shortage in supply of electricity constitutes a real risk. Indeed, the end of electricity surpluses in Quebec de facto requires the province to make a decision about how to meet the future demand for electricity. The solutions contemplated all include an increase in Quebec's electricity production capacity, whether obtained through the construction of new dams, energy efficiency measures or, in our case, through a restriction on exports of hydroelectricity to the US. It is also arguable that Quebec's objective of reducing the risk of a shortage in the supply of electricity in the province is tightly linked to the objective of protecting Quebecers against the potential financial, social, or health risks associated with prolonged power cuts. And, according to the WTO "few interests are more 'vital' and 'important' than protecting human beings from health risks."[205] Accordingly, Quebec is likely to be successful in establishing that its export ban pursues a truly important objective. It might be useful to note, in this regard, that Quebec retains the right to set its desired level of protection against the risk in question.[206] In this regard, as in *EC- Asbestos*, the panel might find that Quebec's desired level of protection is not the total elimination of this risk, but rather the reduction of this risk to the maximum extent possible.

Trade restrictiveness

[204] *European Communities – Measures Affecting Asbestos and Asbestos-Containing Products (Complaint by Canada)* (2000), *supra* note 210 at para 8.188 (Panel Report); *European Communities – Measures Affecting Asbestos and Asbestos-Containing Products (Complaint by Canada)* (2000), *supra* note 210 at para 167
[205] *Brazil – Measures Affecting Imports of Retreaded Tyres (Complaint by the European Communities)* (2007), *supra* note 208 at para 144
[206] *European Communities – Measures Affecting Asbestos and Asbestos-Containing Products (Complaint by Canada)* (2000), *supra* note 210 at para 3.19

Since the panel in *Brazil – Retreaded Tyres* believed an import ban is "by design as trade-restrictive as can be,"[207] I here assume that a WTO panel looking at the facts of our case would also find that such revocation powers as found in Canadian authorities' legislation is similarly very trade-restrictive, arguably constituting a ban on exports. In this case, then, "it would be difficult for a panel to find that measure necessary unless it satisfied that the measure is apt to make a material contribution to the achievement of its objective" (my emphasis).[208] In other words, it would not, in view of the heavy trade-restrictiveness of Quebec's measure in our case, be enough to prove that its export ban contributes to the achievement of its objective – rather this contribution must be material in order to 'counterbalance' the trade restrictiveness of the measure.

A material contribution

Do Canadian authorities' restrictions on exports make, or are apt to make, a material contribution to the achievement of its objective to significantly reduce the risk of a shortage in the supply of electricity in the province? In the present case, it is difficult to see how the panel would argue that Canadian authorities' powers to revoke an authorisation to export *do not* make such a material contribution to the achievement of its objective. The fact is that by not exporting electricity to Northeast America, Quebec is making more electricity available for domestic use. Moreover, the supply of electricity ensured by imposing hydroelectricity export restrictions aligns best with Hydro-Québec's new mission to ensure a "sufficient, safe, reliable, and cost-effective" supply of electricity to meet the targets of the Integrated Resource Management

[207] *Brazil – Measures Affecting Imports of Retreaded Tyres (Complaint by the European Communities)* (2007), WTO Doc WT/DS332/R (Panel Report) at para 7.211, online (pdf): <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=Q:/WT/DS/332R-00.pdf&Open=True>
[208] *Brazil – Measures Affecting Imports of Retreaded Tyres (Complaint by the European Communities)* (2007), *supra* note 208 at para 150

Plan.[209] Arguably, no other type of electricity supply meets these conditions as effectively as domestic hydroelectricity, given its reliability and cost-efficiency. But is that really the case?

Alternatives

In the last stage of the analysis under the 'essential' element of the test in Article XX(j) of the GATT 1994, it must be assessed whether there is a less WTO-inconsistent or WTO-consistent alternative measure that is "reasonably available" to Canadian authorites in order to achieve its objective.[210] In this regard, it falls upon the US to argue that Canadian authorities could have used an other alternative measure, and Canadian authorities would simply need to prove that such a measure was not 'reasonably available' to it.[211] Canadian authorities' choice to restrict exports of Quebec hydroelectricity are unlikely to be considered as 'necessary' (or, therefore, 'essential') at WTO level if there were reasonably available alternative measures less inconsistent with the GATT that it could have used to reach its objective of protecting Quebecers against the risk to human health resulting from a critical shortage in the supply of electricity. Importantly in this regard, in order for an alternative measure to be considered 'reasonably available' for Quebec to use, such measure must result in Canadian authorities to achieving the same level of protection with regards to the risk to the health of its citizens than its export restrictions.[212] In other words, to be 'reasonably available' to Canadian authorities, the alternative measure proposed by the US must be apt to significantly reduce the risk of a

[209] Bill n° 69: *An Act to ensure the responsible governance of energy resources and to amend various legislative provisions*, 1st Sess, 43th Leg, Quebec, 2024 (presented 6 June 2024), Article 111
[210] *India – Certain Measures Relating to Solar Cells and Solar Modules (Complaint by the United States)* (2016), *supra* note 191 at para 7.349; *Korea – Measures Affecting Imports of Fresh, Chilled and Frozen Beef* (*Complaint by Australia and the United States)* (2000), *supra* note 217 at para 166; *European Communities – Measures Prohibiting the Importation and Marketing of Seal P*roducts (Complaint by Norway and Canada) (2013), *supra* note 217 at para 5.261
[211] *United States – Measures Affecting the Cross-Border Supply of Gambling and Betting Services (Complaint by Antigua), supra* note 208 at para 309
[212] *European Communities – Measures Affecting Asbestos and Asbestos-Containing Products (Complaint by Canada)* (2000), *supra* note 210 at paras 172-174

short supply of electricity within the province. Moreover, for the alternative measure to be 'reasonably available' to Canadian authorities, it not impose "an undue burden on that Member, such as prohibitive costs or substantial technical difficulties."[213] In this regard, simple administrative difficulties will not amount to 'substantial technical difficulties.'[214] Finally, alternative measures cannot be 'reasonably available' to a party if they are "complementary" to a party's policy[215] in pursuance of a certain objective.

Whether Quebec can successfully argue that no WTO-consistent or less WTO-inconsistent alternative measures are 'reasonably available' will largely depend on the specific alternatives the U.S. proposes as feasible for Quebec. In any case, Quebec will need to refute these arguments and establish that such 'alternative' measures are not 'reasonably available' to it, whether due to: (1) real technical or implementation difficulties, or (2) because such an alternative measure would not result in its desired level of protection against the risk of a shortage in the supply of electricity, which is namely to significantly reduce this risk, or (3) because the proposed alternative is 'complementary' to its export restrictions.

If the U.S. argues that alternative measures available to Quebec include energy efficiency improvements, building new dams, developing other renewable energy sources (such as wind or solar), or importing electricity from other markets, Quebec can contend that these measures are 'complementary' to its export ban. Quebec can justify this by demonstrating that it has already begun implementing, or is in the process of implementing, these measures

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[213] *United States – Measures Affecting the Cross-Border Supply of Gambling and Betting Services (Complaint by Antigua), supra* note 208 at para 308
[214] *European Communities – Measures Affecting Asbestos and Asbestos-Containing Products (Complaint by Canada)* (2000), *supra* note 210 at para 169; *United States – Standards for Reformulated and Conventional Gasoline* (*Complaint by Brazil and Venezuela)* (1996), *supra* note 126 at paras 6.26-6.28
[215] *Brazil – Measures Affecting Imports of Retreaded Tyres (Complaint by the European Communities)* (2007), *supra* note 208 at para 180

to significantly reduce the risk of electricity shortages. However, a WTO panel might argue that the contention by Canadian authorities that the alternative measures proposed by the US are already in place would amount to a concession "that such alternatives are (already) "available.""[216] In this scenario, Canadian authorities would need to prove that securing alternative renewable energy sources poses significant challenges, particularly due to the high costs of building new generation facilities or transmission lines for imports, which these sources heavily rely on. Moreover, no other alternatives can provide the electricity supply as quickly and reliably as restrictions on hydroelectricity exports.

An interesting question regarding 'alternative measures' is whether the U.S. could successfully argue that a 'reasonably available' alternative for Canadian authorities to address the electricity shortfall would be to generate or import electricity from fossil fuel sources, such as natural gas. Indeed, Quebec is a world leader in renewable energy, taking great pride in its decarbonised grid, and even more pride in helping Northeast America decarbonise its own. Could Quebec argue that increasing the supply of electricity using non-renewable sources is not 'reasonably available' to it due, say, to strong public opposition? Owing to Quebec's clean energy record, it would arguably have strong grounds to make such an argument. Indeed, Quebec aims to meet modern green marketing standards and would prefer to avoid non-renewable sources of energy to maintain its reputation as a leader in renewable energy. However, whether or not Quebec might be successful in this regard would seem to hinge on whether a WTO panel finds that an alternative measure must effectively make a material contribution to the reduction of a stated risk regardless of any negative environmental

[216] *China – Measures Related to the Exportation of Various Raw Materials* (*Complaint by the United States, the European Union and Mexico)* (2011), *supra* note 139 at 7.568

consequences, or whether alternatives measures ‘reasonably available’ to a party are limited to those which are considered “socially acceptable” to the party in question?

Article XX(j) compared

In this regard, it might be interesting to compare the analysis of Article XX(j) to a potential analysis under the other subparagraphs of Article XX of the GATT 1994. Firstly, under Article XX(b) of the GATT 1994, WTO-inconsistent measures “necessary for the protection of human, animal or plant life and health” are provisionally justified under that subparagraph. In this instance, if Canadian authorities were attempting to justify their Quebec hydroelectricity export restrictions under Article XX(b), a panel might clarify that an alternative measure is not 'reasonably available' to Canada if it fails to meet its desired level of protection for the health of its citizens. Thus, if under Article XX(b) Canada can argue that generating or importing electricity from non-renewable sources is not a 'reasonably available' measure because it fails to achieve its desired level of protection for citizens' health, it should arguably have the same space to make this argument under Article XX(j). However, it is still possible that a WTO panel could argue that Canada should have presented its case under Article XX(b) to fully benefit from the argument that 'reasonably available' alternatives exclude generating or importing electricity from fossil fuel sources, as doing so would undermine Quebec’s goal of maintaining a higher level of public health through the primary use of renewable energy. Secondly, Article XX(a) of the GATT 1994 provides a ground for justifying an otherwise WTO-inconsistent measure “necessary to protect public morals”. Based solely on this clause, it is clear that the drafters of the GATT intended for WTO Members to have the space to argue a protection of ‘public morals’. However, it remains unclear whether a WTO panel would accept Quebec’s argument that increasing the supply of electricity with non-renewable sources is not

‘reasonably available’ to it due to both to (1) strong public opposition on grounds of public morals and (2) the objective of protecting the health of its citizens. In this sense, then, and in the specific context of electricity, whether and how the different sub-paragraphs of Article XX of the GATT 1994 interact with each other in an analysis would seem extremely relevant, and would seem to require more guidance from future WTO panels.

In sum, another challenge that Canadian authorities might face in justifying the GATT inconsistency of their restrictions on Quebec hydroelectricity exports is to prove that there are no 'reasonably available' alternatives to achieve their desired goal. This includes proving that other measures are insufficient or impractical to meet the province's needs as effectively and promptly as domestic hydroelectricity.

Having examined the challenges of justifying hydroelectricity export restrictions under Articles XX(g) and XX(j) of the GATT 1994, I now shift focus on assessing whether these restrictions could comply with the chapeau of Article XX. While my previous analysis suggested difficulties in justifying the measure under specific subparagraphs, I will now extend my inquiry to consider whether it aligns with the broader principles outlined in the chapeau. Verification of a measure's compliance with the chapeau typically occurs as the second step in a legal analysis, following the examination of the grounds. It serves as the final check to determine whether the 'chapeau' fits the measure in question.

The chapeau of Article XX of the GATT 1994

For the purposes of our analysis, it is worth recalling the precise wording of Article XX’s chapeau, which constitutes its opening paragraph:

Article XX of the GATT 1994 - General Exceptions

Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures […]"

The chapeau is, according to the Appellate Body of the WTO, "a manifestation of the good faith principle,"[217] or a means "to prevent the application of the provisionally justified measures from constituting a misuse or abuse of the exceptions"[218] contained in Article XX's subparagraphs. The chapeau, in other words, is there to make sure that States do not abuse of their rights, but rather make use of them reasonably. [219] To decide which is the case, WTO will look at the matter on a case-by-case basis,[220] asking "whether the national resource conservation policy being examined has been applied reasonably and even handedly."[221] What will be crucial for the Article XX's chapeau is the mode of application of the measure at hand. Article XX of the GATT 1994 clarifies that to comply with the chapeau: (1) States may onoly invoke Article XX for environmental reasons, and (2) a WTO-inconsistent measure must not be applied in a such a way that results in arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade.

[217] Piotr Szwedo, *Cross-border Water Trade: Legal and Interdisciplinary Perspectives* (2018) 32 Queen Mary Studies in International Law, at 106
[218] Peter Van den Bossche, "WTO Law as a Constraint on Domestic Environmental Policy: an Overview" in Michael Faure (ed) *Elgar Encyclopedia of Environmental Law* (Edward Elgar Publishing 2023) at 41
[219] Piotr Szwedo, *Cross-border Water Trade: Legal and Interdisciplinary Perspectives* (2018) 32 Queen Mary Studies in International Law, at 106
[220] Nathalie Dobson, "Article XX GATT as Guardian of the Environment" in Michael Faure (ed) *Elgar Encyclopedia of Environmental Law* (Edward Elgar Publishing 2023) at 200
[221] Sandford Gaines, "The WTO's Reading of the GATT Article XX Chapeau: a Disguised Restriction on Environmental Measures" (2001) 22 University of Pennsylvania Journal of International Law 739, at 789

First, the chapeau of Article XX of the GATT 1994 makes clear that States will not be able to invoke Article XX for other than for environmental reasons. This entails that for example Mexico, which is currently in consultations with the US (and Canada) under CUSMA due to its enactment of laws clearly prioritising the distribution of energy generated from fossil fuels by its State-owned utility operator, the Comisiòn Federal de Electricidad, over (American) clean energy sources,[222] without taking any account of environmental impacts,[223] would clearly not be justified to invoke Article XX of the GATT 1994 to justify its protectionist measures. However, it is doubtful whether environment-related trade protectionist measures would otherwise succeed in meeting the requirements of Article XX's chapeau. Indeed, it is noteworthy that the World Energy Council (WEC) has cautioned "against excessive reliance on GATT Article XX exceptions or the use of trade measures for climate change goals."[224] Does this express the view that the invocation of Article XX of the GATT 1994 to justify measures related to climate change (in this case low water levels in Quebec) should necessarily be considered not to meet the requirements of Article XX's chapeau? Such an interpretation would seem to contradict the very purpose of Article XX of the GATT 1994, which aims to allow flexibility for essential environmental policies. Therefore, I proceed under the assumption that Canadian authorities could have grounds to argue that its position is the exact example of a case where Article XX should apply to support its environmental policy. Indeed, the Quebec case presents unique circumstances due to the nature of hydroelectricity and its role in sustainable energy production, setting it apart from cases involving fossil fuels or other energy sources.

[222] Office of the United States Trade Representative, *United States Requests Consultations Under the USMCA Over Mexico's Energy Policies* (20 July 2022) <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2022/july/united-states-requests-consultations-under-usmca-over-mexicos-energy-policies>
[223] *Ibid*
[224] Steve Charnovitz, "Exploring the Environmental Exceptions in GATT Article X" (1991) 25:5 Journal of World Trade 37, at 41

Secondly, the chapeau of Article XX of the GATT 1994 makes it clear that, to be justified under the Agreement, a WTO-inconsistent measure must be applied in a such a way that does not constitute arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade. Could the US argue that Quebec's measure is applied in a way that constitutes a disguised restriction on international trade because Quebec is still exporting hydroelectricity outside of its borders to the neighbouring Canadian provinces of Ontario of New Brunswick while halting its exports to Northeast America? For the purposes of our analysis, it is submitted that Canadian authorities could argue that restrictions on exports of Quebec hydroelectricity cannot, in fact, ever constitute arbitrary or unjustifiable discrimination between countries where the same conditions prevail. Indeed, Quebec's exports of hydroelectricity are limited by the reach of its transmission lines and related infrastructure. Since Quebec only exports to other Canadian provinces and Northeast America, it is clear that an export ban by Quebec cannot be applied in a way that would discriminate against two trading partners, since in this case Quebec only has one trading partner. Accordingly, a WTO panel might accept Quebec's argument, based on a literal reading of the chapeau of Article XX of the GATT 1994 which refers only to "discrimination between countries" in the plural form, if it agrees that it seemingly excluding the the application of discrimination in scenarios where a country trades a single product exclusively with a single neighbour, owing to the limitations imposed by costly transport. We note that there remains the possibility that the US might argue that Hydro-Quebec's potential to export to the island of St-Pierre-et-Miquelon, a French territory in the St-Lawrence Gulf, means that restrictions on exports of Quebec hydroelectricity to Northeast America constitute a disguised restriction on international trade. However, a WTO panel could reject this argument if Canadian authorities demonstrate that the chapeau does not apply to the particular case of such a small island that otherwise does not trade with Quebec. Indeed, according to the US'

own data, St-Pierre-et-Miquelon neither produces nor imports energy; instead it relies on fossil fuel sources of energy[225] to power the life of its less than 6 000 citizens.[226]

In sum, if Canadian authorities can prove that the decision to restrict exports of Quebec hydroelectricity duly falls under of the grounds of exception in Article XX of the GATT 1994, they would have a chance at successfully arguing that their decision further meets the requirements of the chapeau of Article XX of the GATT 1994.

Conclusion

In conclusion, Canadian authorities would likely face significant challenges in justifyuing the Article XI:1 violation of restrictions on exports of Quebec hydroelectricity under Art XI:2(a), XX(g) and XX(j) of the GATT 1994. In the next chapter, I will outline how Canadian authorities should frame their justification for imposing export restrictions to ensure compliance with WTO regulations.

[225] United States Energy Information Administration, *Saint Pierre et Miquelon: 2022 Primary Energy Data in Quadrillion btu* (online): <https://www.eia.gov/international/overview/country/SPM>
[226] European Commission, *Saint Pierre et Miquelon* (online): <https://international-partnerships.ec.europa.eu/countries/saint-pierre-and-miquelon_en>

IV. Chapter 3: Ensuring GATT compliance of restrictions on exports of Quebec hydroelectricity

This chapter aims to recommend the primary justifications Canadian authorities need to present to the WTO to qualify under the exceptions for imposing export restrictions on hydroelectricity. These justifications include: (1) a critical environmental situation, such as low water levels, (2) the absence of viable alternatives, and (3) the responsible domestic use of hydroelectric resources. These points can be summarized as: a critical situation without reasonable alternatives for an environmentally conscious population. I will examine each of these elements in turn.

Finally, it is urgent for Canadian authorities to concurrently negotiate for the inclusion of an energy framework, defined by an energy security exception, at the international level, whether within CUSMA or the WTO. Indeed, at this crucial juncture in the 21st century where cross-border electricity trade is set to increase, disputes are likely to arise, and they will suffer from the lack of clear legislation. Proactively negotiating terms and conditions is preferable to leaving the qualification for Article XX exceptions to judicial interpretation, which may be unpredictable and less protective of national resources. In this context, this thesis argues, Canada should aim to become an international leader in negotiating the legal framework for the energy sector. To achieve this, I will discuss strategies for Canada to engage with the WTO and approach the US and Mexico for the CUSMA renegotiation in 2026.

A. Conditions for GATT compliance of hydroelectricity export restrictions

Generally speaking, to qualify under the WTO exceptions for imposing export restrictions on hydroelectricity, Canadian authorities need to prove the existence of a critical situation

bearing no other reasonable alternatives for an environmentally conscious population. I take these elements in turn.

Condition 1: A critical situation

As a first condition to justifying the compliance with GATT of export restrictions on Quebec hydroelectricity, Canadian authorities must assert that shortages of hydroelectricity are 'critical' *in any case* given the potential negative consequences of failing to meet the supply requirement thresholds. To support this argument, I will begin by outlining the necessary criteria to meet the conditions of the GATT's exception clauses. Following this, I will detail how Canadian authorities, particularly the Quebec government in its Bill 69, could effectively prepare the groundwork for such an argument.

Requirements of GATT exception clauses

First, as previously demonstrated, the restrictions imposed by Canadian authorities on Quebec hydroelectricity exports could be viewed as a trade ban, making them clearly inconsistent with Article XI:1 of the GATT 1994, which prohibits quantitative export restrictions.[227] This inconsistency could first be addressed under Article XI:2(a) of the GATT 1994, which allows quantitative export restrictions to be applied temporarily in situations of critical shortage of an essential product. To qualify under this exception, following *Indonesia – Raw Materials*, Quebec must show that its export revocation powers are (a) temporarily applied to prevent or relieve (b) a critical shortage of (c) an essential product.[228] A WTO panel

[227] Christopher Frey, *supra* note 7 at 182
[228] *General Agreement on Tariffs and* Trade 1994, Article X1:2(a); *Indonesia – Measures Relating to Raw Materials (Complaint by the European Union)* (2022), *supra* note 118 at para 7.22

should agree that Quebec meets the first limb of the test, namely that electricity effectively constitutes an 'essential' product, notably because it can be said to be "indispensable" to Quebec,[229] of "vital significance"[230] to its society and economy. However, it is doubtful whether a WTO panel would agree that situations of low water levels would constitute one of a 'critical shortage', nor whether such a situation could ever be relieved through a 'temporarily applied' export ban. Indeed, the shortage must reflect a situation of "crisis,"[231] that is not just a situation where the remaining hydropower resources are 'scarce', but rather where Quebec would actually risk facing power cuts due to a 'critical shortage' of electricity *unless* it imposed an export restriction. The panel in this case was of the opinion that "if there is no possibility for an existing shortage ever to cease to exist, it will not be possible to "relieve or prevent" it through an export restriction applied on a temporary basis."[232] Secondly, the inconsistency of restrictions on exports of Quebec hydroelectricity with Article XI:1 of the GATT 1994 can be justified under Article XX(j) of the GATT 1994. For this, Canadian authorities would need to prove that its export restrictions are capable of addressing and necessary to address the acquisition or distribution of products in local or short supply. [233] Here, the 'short supply' element should be easier to meet than Article XI:2(a)'s "critical shortage" test. I consider these elements together in setting out the policy recommendation for Canadian authorities.

Policy recommendation

[229] *China – Measures Related to the Exportation of Various Raw Materials* (*Complaint by the United States, the European Union and Mexico)* (2011), *supra* note 139 at para 7.282
[230] Christopher Frey, *supra* note 7 at 188
[231] *China – Measures Related to the Exportation of Various Raw Materials* (*Complaint by the United States, the European Union and Mexico)* (2011), *supra* note 139 at para 7.296
[232] *China – Measures Related to the Exportation of Various Raw Materials* (*Complaint by the United States, the European Union and Mexico)* (2011), *supra* note 139 at para 7.297
[233] *General Agreement on Tariffs and* Trade 1994, Article XX(j); *India – Certain Measures Relating to Solar Cells and Solar Modules (Complaint by the United States)* (2016), *supra* note 191 at para 5.57

In this context, Canadian authorities must argue that this criterion of "critical shortage" should be interpreted differently for hydroelectricity compared to other goods, including other types of energy and renewable electricity. Indeed, as explained in the first chapter, hydroelectricity inherently constitutes a unique source of renewable energy, and Canada must rely on its particular nature to convince the WTO panel. Unlike other energy sources, even among renewables, hydroelectricity is uniquely flexible, reliable, and capable of storage.[234] Given Canada's goal of maintaining a decarbonized power grid, a shortage of hydroelectricity is more critical than shortages of wind or solar energy due to hydroelectricity's role in stabilizing the grid by addressing intermittency problems. Canadian authorities must therefore argue that any shortage of hydroelectric resources is inherently critical because it would compel Quebec to rely on alternative energy sources. These alternatives are either environmentally harmful, as in the case of fossil fuels, or unreliable due to intermittency, as with other renewables. Therefore, a shortage of hydroelectricity in a decarbonized grid, even if not immediately critical, can quickly become so due to the unavailability of other energy sources and the essential role of hydropower in stabilizing the system. Consequently, such a shortage should always be considered a "critical shortage," as the consequences are invariably severe, affecting not only financial stability but also the fundamental rights and well-being of citizens. That is, especially during winter periods, when even the shortest interruption in the supply of electricity can have severe consequences.

In its Bill 69, the Quebec Government should precise the conditions under which it can refuse to authorise exports of hydroelectricity as follows:

[234] Rafael Leal-Arcas, Dr. Ehab Abu Gosh & Andrew Filis, *supra* note 13 at 308; Massachusetts Institute of Technology, *supra* note 63 at 66

"*un gouvernement peut refuser d'accorder une autorisation sous l'article 143 de la présente loi s'il est estimé que les besoins du marché québécois ne pourraient être entièrement satisfaits par le volume d'hydroélectricité disponible en raison d'une pénurie d'eau, et que les conséquences de l'octroi de cette autorisation pourraient être critiques pour l'environnement ou la popuplation selon les experts d'Hydro-Québec. »*

Such a clause would invite the WTO to defer the definition of 'critical shortage' to Hydro-Québec experts, emphasizing that a critical shortage of hydroelectricity is markedly different from a shortage of other energy sources due to its crucial reliability and role in stabilizing the electric grid. The enactment of such a clause could help Quebec to justify the imposition of export restrictions under Article XI:2(a) or XX(j) by establishing the definition of 'critical shortage' that is specific to hydropower and determined by Hydro-Québec experts.

With regards to the temporal aspect of the critical shortage or short supply tests, it is important to note that Canadian authorities must demonstrate that the shortage can be alleviated. To do this, they would emphasize the renewable nature of hydroelectric resources. Unlike exhaustible natural resources, which would be protected through export restrictions until depletion, hydroelectricity can be considered renewable despite its potential exhaustibility during periods of low water levels when the extraction rate exceeds regeneration. For the purposes of justification under the GATT's Article XI:2(a) and XX(j) then, hydroelectricity imperatively needs to be presented as a renewable resource. This framing will enable Canadian authorities to impose export restrictions on a temporary basis, meeting the criteria for addressing critical shortages or short supply.

If Canadian authorities wish to impose permanent restrictions on exports of Quebec hydroelectricity, absent a critical situation, and for policy reasons such as supporting energy-

intensive local industries, they would need to justify these restrictions under Article XX(g), XX(b), or XX(a) of the GATT. However, this would be challenging. First, under Article XX(g), authorities must argue that hydroelectricity is an 'exhaustible natural resource.' While it is possible to prove this, it would counter Quebec's business arguments that hydroelectricity is a renewable resource. Second, under Article XX(a), they would need to show a shift in public morals, demonstrating that the long-standing practice of exporting to Northeast America no longer aligns with current ethical standards. Third, under Article XX(b), they would need to prove that ensuring the quality of life for Quebec's population, through a stable electricity supply, requires excluding cross-border electricity trade to maintain energy security. The WTO is unlikely to favor this argument, given its stance that trade and environmental protection should be complementary. Therefore, each of these arguments poses significant difficulties. Furthermore, even if these restrictions were justified under these subparagraphs, they would still need to pass the test of the chapeau of Article XX. This requires that the measures do not constitute arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade. For instance, if the primary intent is to support local industry rather than to genuinely protect Quebec's water and environment, these measures would likely be considered a restriction on international trade and fail this test.

Condition 2 : No reasonable alternatives

To justify the compliance with GATT of export restrictions on Quebec hydroelectricity, Canadian authorities must secondly put forward the idea that there are no comparable alternatives to enacting restrictions on exports of hydroelectricity in order to ensure a stable supply for domestic use.

Requirements of GATT exception clauses

In order to justify the compliance with GATT of export restrictions on Quebec hydroelectricity under Article XX(j) of the GATT 1994, Canadian authorities would need to prove that its export restrictions are capable of addressing and 'essential' to address the acquisition or distribution of products in local or short supply.[235] For a given measure to meet this 'essential' criterion, there must not be a less WTO-inconsistent or WTO-consistent alternative measure that is "reasonably available" to a party to achieve its objectives. Importantly in this regard, in order for an alternative measure to be considered 'reasonably available' for Quebec to use, it must be an effective way for Canadian authorities to achieve the same level of protection with regards to the risk to the health of its citizens than its export restrictions.[236] In other words, to be 'reasonably available' to Canadian authorities, the alternative measure proposed by the US must be apt to significantly reduce the risk of a shortage in the supply of electricity within the province without imposing "an undue burden on that Member, such as prohibitive costs or substantial technical difficulties."[237] In questioning whether there is actually a 'short supply' of hydroelectricity in the province, a WTO panel will not only consider the production capacity for electricity within the Quebec market, but also consider the quantity of electricity that is available for purchase in other markets that could be used to satisfy domestic demand for the product.[238]

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[235] *General Agreement on Tariffs and* Trade 1994, Article XX(j); *India – Certain Measures Relating to Solar Cells and Solar Modules (Complaint by the United States)* (2016), *supra* note 191 at para 5.57
[236] *European Communities – Measures Affecting Asbestos and Asbestos-Containing Products (Complaint by Canada)* (2000), *supra* note 210 at paras 172-174
[237] *United States – Measures Affecting the Cross-Border Supply of Gambling and Betting Services (Complaint by Antigua), supra* note 208 at para 308
[238] *India – Certain Measures Relating to Solar Cells and Solar Modules (Complaint by the United States)* (2016), *supra* note 191 at paras 5.68-69

Policy recommendation

In periods of hydroelectricity shortages, Canadian authorities should argue that no other WTO-consistent alternatives are "reasonably" available to Canada, as export restrictions are the most effective and immediate solution. Other measures, such as energy efficiency improvements, the construction of new dams, the development of alternative renewable energy sources, or the import of electricity, are either insufficient or impractical for promptly meeting the province's needs as effectively as domestic hydroelectricity. In a sense, these alternatives all place an “undue burden” on Canada, requiring a series of complex actions to ensure a stable electricity supply, rather than simply utilising its own resources. Furthermore, the logic of relying on the availability of electricity from other markets does not apply well to electricity. Unlike common goods that can be easily transported over long distances, the import capacity for electricity is inherently limited by the capacity of transmission lines. Therefore, even if electricity is available in other markets, it cannot be seamlessly integrated into Quebec’s grid due to these physical constraints. Moreover, uncertainties persist regarding whether the source of electricity available for Quebec purchase on neighbouring markets is “stable and accessible,”[239] most notably for instance due to the price at which this electricity would be available to Quebec. Thus, it is crucial for Canada to emphasize that developing other renewable energy sources, reducing domestic consumption, and increasing electricity imports from neighboring regions are never adequate substitutes for utilizing its own hydroelectric resources. Hydro-Québec’s mission, as modified by Bill 69, to provide a stable, sufficient, safe, reliable, and cost-effective electricity supply[240] sets the standard for these arguments. These

[239] *India – Certain Measures Relating to Solar Cells and Solar Modules (Complaint by the United States)* (2016), *supra* note 191 at para 5.71
[240] Bill n° 69: An Act to ensure the responsible governance of energy resources and to amend various legislative provisions, 1st Sess, 43th Leg, Quebec, 2024 (presented 6 June 2024), Article 111

points underscore the unique challenges of electricity supply and the practical necessity of prioritizing domestic hydroelectricity during periods of shortage.

Condition 3 : An environmentally conscious population

To justify the compliance with GATT of export restrictions on Quebec hydroelectricity, Canadian authorities must thirdly emphasize their commitment to environmental protection goals. Any other justification, such as ensuring hydroelectricity availability for energy-intensive domestic industries or prioritizing exports to neighboring Canadian provinces, would be insufficient.

Requirements of GATT exception clauses

To justify the compliance with GATT of export restrictions on Quebec hydroelectricity under Article XX(g) of the GATT 1994, Canadian authorities must argue that the clause relates to the conservation of an exhaustible natural resource, and that it is enacted in conjunction with restrictions on domestic consumption of that resource.[241] The first hurdle for Canadian authorities is to prove that its decision to restrict exports of Quebec hydroelectricity is 'primarily aimed at' the conservation of an exhaustible natural resource.[242] The fact that electricity "lacks the qualities of a *natural* resource"[243] means that Canada must argue that its decision to restrict exports of Quebec hydroelectricity is primarily aimed at the conservation of its local (damned) rivers. To prove this, Canada must establish a direct link between its

[241] *China – Measures Related to the Exportation of Various Raw Materials (Complaint by the United States, the European Union and Mexico)* (2012), *supra* note 116 at para 460
[242] *China – Measures Related to the Exportation of Rare Earths, Tungsten, and Molybdenum* (*Complaint by the United States, the European Union and Japan)* (2014), *supra* note 166 at para 348
[243] Christopher Frey, *supra* note 7 at 190

decision to restrict exports of Quebec hydroelectricity and the goal of conservation (of dammed Quebec rivers), distinguishing itself from the case of *China – Raw Materials*.[244] The second hurdle for Canada would be to prove that its hydroelectricity export restriction powers are "made effective in conjunction with restrictions on domestic production or consumption."[245] In this case, while Hydro-Quebec is encouraging domestic consumers to reduce their individual electricity consumption,[246] it is also investing in renewable sources of energy, including the potential construction of new dams, to increase its overall production capacity. In this context, Canada must argue that it is already restricting domestic production or consumption. Such efforts to limit individual consumption of hydroelectricity should be sufficient to qualify because the overall demand for electricity can hardly be significantly influenced by government actions. Additionally, Quebec is focusing on producing more wind energy and avoiding the construction of new dams, thereby indirectly restricting production. In this context, Canada must highlight that it it is actively engaged in the conservation of local resources and in the better management of environmental impacts.

Policy recommendation

In this context, one problem for Quebec in portraying itself as an environmentally-conscious region is the fact that it is considering the construction of new dams.[247] This policy was a subject of heavy contention between Prime Minister Francois Legault and the previous CEO of Hydro-Quebec, Sophie Brochu. Indeed, Mrs Brochu did deem it appropriate to build

[244] *China – Measures Related to the Exportation of Various Raw Materials* (*Complaint by the United States, the European Union and Mexico)* (2011), *supa* note 139 at para 7.418
[245] *General Agreement on Tariffs and* Trade 1994, Article XX(g)
[246] Hydro-Québec, *supra* note 184
[247] Radio-Canada, "Plusieurs Nouveaux Projets de Barrages "Sont Sur la Table", Confirme François Legault" *Radio-Canada* (28 September 2023), online: <https://ici.radio-canada.ca/nouvelle/2013745/projets-barrages-quebec-francois-legault>

new dams, and was notably quoted saying "disons que *under my watch*, je ne vois pas ca pantoute."[248] Indeed, while main Quebec rivers are already dammed, Brochu thought it unnecessary add new production sites of hydroelectricity, especially as it pursued new sources of renewable energy (like wind)[249] associated with smart grid in the province integrating multiple renewable energy technologies.[250] The Prime Minister's contrary opinion led to Brochu's resignation as announced in January 2023.[251] From this situation, we can take it that the Government might well want to go forward with the construction of new dams in order to reach its goal of getting over 100 TWh of additional clean electricity by 2050.[252]

One problem associated with the building of new dams is that, to help meet electricity production targets, the new dams would have to be built and become operational as soon as reasonably possible (if we consider the end of surpluses of hydroelectricity in 2027). However, the building of dams is currently a very long process, potentially taking up to 15 years.[253] Owing to the short time-frame in perspective before the end of its surplus era, the Quebec Government has expressed the desire to shorten these processes, through its Bill 69, so that the new dams be operational faster than expected.[254] The risk with fast-tracking the bureaucratic process is that it may overlook crucial environmental and social impacts, particularly on affected communities, including Indigenous peoples. This emphasis on speed over thorough consideration could undermine Canada's argument that it is acting in an environmentally

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[248] Jacques Nadeau, "Hydro-Québec: où se situaient les désaccords entre Sophie Brochu et le gouvernement?" *Le Devoir* (14 January 2023), online: <https://www.ledevoir.com/societe/777811/crise-energetique-hydro-quebec-ou-se-situaient-les-desaccords-entre-sophie-brochu-et-le-gouvernement>
[249] *Ibid*
[250] Hydro-Québec, *supra* note 3 at 27
[251] Anne-Marie Lecompte, "La PDG d'Hydro-Québec annonce sa démission : « Ce n'est pas une décision politique »" *Radio-Canada* (10 January 2023), online: <https://ici.radio-canada.ca/nouvelle/1947131/sophie-brochu-demission-pdg-hydro-quebec>
[252] Hydro-Québec, *supra* note 3 at 2
[253] Agenci Qmi, "Fin des Surplus D'électricité en 207: Québec n'est pas prêt à l'affronter, selon l'IEDM" *Le Journal de Montréal* (11 May 2023), online: <https://www.journaldemontreal.com/2023/05/11/fin-des-surplus-delectricite-en-2027-quebec-nest-pas-pret-a-laffronter-selon-liedm>
[254] *Ibid*

conscious manner, potentially weakening its justification for restricting Quebec hydroelectricity exports on environmental grounds in the eyes of the US. In other words, to garner sympathy from a WTO panel regarding its sovereignty aspirations in environmental protection, Quebec must portray itself as a responsible consumer and producer of electricity. Building dams, however, represents a contradiction to this image, as it often involves significant environmental impacts and can disregard the rights and interests of indigenous peoples, especially if the processes for dam construction are fast-tracked. To have a better chance at justifying the imposition of restrictions on exports of Quebec hydroelectricity under Article XX(g) then, Sophie Brochu's policy should be preferred over that of the Quebec Government's.

For instance, the Quebec Government could assert its commitment to the protection of the environment in the context of hydroelectricity exports by integrating in its Bill 69 the following clause:

"*un gouvernement peut refuser d'accorder une autorisation sous l'article 143 de la présente loi s'il est estimé que les besoins du marché québécois ne pourraient être entièrement satisfaits par le volume d'hydroélectricité disponible en raison d'une pénurie d'eau, et que les conséquences de l'octroi de cette autorisation pourraient être critiques pour l'environnement ou la popuplation selon les experts d'Hydro-Québec. »*

Indeed, this clause could strengthen Quebec's position by explicitly linking the export restrictions to environmental protection and public welfare considerations, thereby supporting Canada's argument under Article XX(g) of the GATT. This approach aligns more closely with a policy which prioritizes environmental and social factors over purely economic ones, and would enhance Canada's ability to justify the imposition of export restrictions on Quebec hydroelectricity as necessary for the conservation of an exhaustible natural resource.

To secure the legislative latitude required for the implementation of export restrictions on hydroelectricity, Quebec must, at the very least, demonstrate a genuine commitment to conservation and environmental stewardship. By following the policy recommendations presented in this thesis, Canadian authorities can provide the appropriate justification for export restrictions to ensure GATT compliance. However, I acknowledge the possibility that a WTO panel may rule against Canadian authorities, arguing that energy security is better served by continuing to export hydroelectricity to Northeast America through further integration of Quebec's power grid with Northeast America's. To anticipate and avoid such a scenario, I argue that Canadian authorities should proactively negotiate to affirm the policy space accorded to them for protecting their hydroelectric resources under international law. I expand on this strategy in the next section.

B. Negotiating for policy space under international trade law

In this section, I argue that for Canada to ensure that it can impose restrictions on hydroelectricity exports without interference from a WTO panel, it is essential for the country to negotiate for explicit policy space at the international level to safeguard its sovereignty over natural resources. In approaching this negotiation, Canada's approach should involve two key steps: (1) demonstrating that Article XX of the GATT is inadequate for addressing energy security measures, and (2) advocating for specific provisions governing cross-border electricity trade to be established, either within the WTO framework or under CUSMA. I take these elements in turn.

(1) Inadequacy of Article XX of the GATT 1994 for (hydro)electricity trade matters

Quebec must argue that, in the absence of a clause specifically granting an exception to member states for imposing restrictions on grounds of energy security, its potential inability to rely on Article XX of the GATT 1994 to justify hydroelectricity export restrictions effectively limits its policy making space, thus impinging upon its sovereignty. This limitation contradicts the objectives of Article XX itself, which aims to provide member states with the flexibility to address essential issues such as environmental protection and resource conservation.

The purpose of Article XX of the GATT 1994

"Resolving contradictions between trade liberalization and environmental protection has focused on the interpretation of Article XX [of the] GATT [1994]."[255] This provision is actually designed to provide members "with [the] autonomy to decide their own environmental objectives"[256] by recognising that they also pursue policy goals other than trade, and should therefore (albeit limitedly) be permitted to enact measures otherwise inconsistent with their obligations under the GATT 1994.[257] The Article can be roughly described to be designed to apply as following: any GATT-inconsistent measure (such as any environmental policy measure) may be justified and permitted under Article XX of the GATT 1994, in 'limited and conditional'[258] circumstances. For this reason, Article XX of the GATT 1994 is the Agreement's 'environmental exception'[259] effectively devised "to harmonize the relationship" between trade law and environmental policy aims.

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[255] Sandford Gaines, *supra* note 228 at 740
[256] Géraldine Kutas, "The Challenges of Trading Alternative Energy" in Joost Pauwelyn (ed), *Global Challenges at the Intersection of Trade, Energy and the Environment* (Graduate Institute of International and Development Studies, Centre for Trade and Economic Integration 2010) 101, at 104 <https://www.astrid-online.it/static/upload/protected/CTEI/CTEI-CEPR_Global-challenges.pdf>
[257] Simon Lester, Bryan Mercurio & Arwel Davies, *supra* note 165 at 373
[258] Lothar Ehring & Gian Franco Chianale in Julia Selivanova (ed), *Regulation of Energy in International Trade Law: WTO, NAFTA and Energy Chapter* (Kluwer Law International, 2011) 34 Global Trade Law Series at 138
[259] Manjiao Chi, *supra* note 121 at 940

Quebec policy making space

In theory, therefore, the non-applicability of Article XX to restrictions on exports of Quebec hydroelectricity can be deemed worrying, since it effectively means that Canada cannot take *every* measure possible to guarantee the supply of hydroelectricity to domestic consumers in Quebec at a time of low water levels. Indeed, Quebec's sovereignty to enact policy in this regard is circumscribed in one very particular way: it is prevented under international trade law from using its discretion to refuse to authorise exports of hydroelectricity to Northeast America to ensure a supply for domestic consumers. In this sense, Quebec is arguably a 'prisoner' of its hydroelectricity export policy. From the Canadian point of view, this limitation on national regulatory autonomy is theoretically problematic, since it entails that Quebec is bound to continue to provide the same quantities of hydroelectricity to Northeast America without the possibility of lowering these levels without contravening the GATT. This state of affairs stands in stark contrast to the objective and purpose of Article XX of the GATT 1994, which is designed to provide members "with [the] autonomy to decide their own environmental objectives"[260] by recognising that they also pursue policy goals other than trade, and should therefore (albeit limitedly) be permitted to enact measures otherwise inconsistent with their obligations under the GATT 1994.[261] The capacity to impose import or export restrictions can be deemed to consist of an "important instrument to exercise sovereignty over natural resources."[262]

[260] Géraldine Kutas, "The Challenges of Trading Alternative Energy" in Joost Pauwelyn (ed), *Global Challenges at the Intersection of Trade, Energy and the Environment* (Graduate Institute of International and Development Studies, Centre for Trade and Economic Integration 2010) 101, at 104 <https://www.astrid-online.it/static/upload/protected/CTEI/CTEI-CEPR_Global-challenges.pdf>
[261] Simon Lester, Bryan Mercurio & Arwel Davies, *supra* note 165 at 373
[262] Christopher Frey, *supra* note 7 at 194

(2) Negotiating for policy space under international trade law

Given the difficulties associated with justifying export restrictions under Article XX, I argue that Canada should negotiate for more policy space to protect its natural resources under international trade law, whether (1) at WTO level or (2) at CUSMA level. I take these in turn.

At WTO level

The 21st century WTO framework should ideally integrate a provision on energy security. However, how would the WTO define energy security? In order to answer this question, it might be necessary to first examine the structure of the WTO framework.

Trade law rationale

The theoretical rationale for free trade can be reduced to its assumption that trade makes 'all boats rise.'[263] In fact, trade was first considered as the main way to reduce armed conflict.[264] Moreover, it had technical advantages: trade theory asserts that a supply/demand asymmetry between countries "creates the possibility of gains from trade,"[265] most especially of natural resources[266] (and so would especially apply in the case of Canada and the US). Thanks to trade, Canadians now enjoy a diverse range of products such as bananas and avocados grown in South America and iPhones manufactured in China. The underlying principle is comparative

[263] Daniel C. Crosby, "Energy Discrimination and International Rules in Hard Times: What's New This Time Around, and What Can be Done" (2012) 5:4 The Journal of World Energy Law & Business 325, at 325
[264] Simon Lester, Bryan Mercurio & Arwel Davies, *supra* note 165 at 13,15
[265] Julia Selivanova (ed), *Regulation of Energy in International Trade Law: WTO, NAFTA and Energy Chapter* (Kluwer Law International, 2011) 34 Global Trade Law Series at 339
[266] J. Owen Saunders (ed), Trading Canada's Natural Resources: Essays from the Banff Conference on Natural Resources Law (3rd edn, 1987) Canadian Institute of Resources Law at 124

advantage: if a country excels in producing a particular good, it is more efficient to import that good and focus on exporting products in which it has a production advantage.

Sustainable development

The WTO preamble dually commits to an open international trade framework and to environmental protection and sustainable development.[267] This promotes the notion that there is no conflict between environmental and trade goals;[268] that these goals, although distinct, can be pursued through complementary means. It is worthy of significance that trade is listed as one of the "means of implementation" of the United Nations' Sustainable Development Goals (SDGs).[269] Sustainable development is a concept first defined in the 1987 Brundtland report[270] as the ability for present generations to satisfy their own needs without compromising the ability of the next generation to meet theirs. The rationale goes, however, that trade can lead to better price, availability and allocation of environment-friendly goods, including that of energy resources,[271] under sustainable development. Trade could actually help to meet both goals under the Paris Agreement[272] and the new Kunming-Montreal GBF.[273] WTO Committees in Geneva have previously studied the climate-trade interface and are currently researching the biodiversity-trade interface.[274] One known outcome of their research on the climate-change

[267] Sandford Gaines, *supra* note 228 at 739
[268] *Ibid*
[269] World Trade Organization, *Nature-positive Trade for Sustainable Development* (14 March 2023), online: <https://www.wto.org/french/tratop_f/envir_f/envir_1403202313_f/envir_1403202313_f.htm>
[270] Stéphane Savard, *supra* note 45 at 120
[271] H E the Sheikha Lubna Al Qasimi, "The WTO Mission and Global Challenges at the Intersection of Trade, Energy and the Environment" in Joost Pauwelyn (ed), *Global Challenges at the Intersection of Trade, Energy and the Environment* (Graduate Institute of International and Development Studies, Centre for Trade and Economic Integration 2010) 19, at 20 <https://www.astrid-online.it/static/upload/protected/CTEI/CTEI-CEPR_Global-challenges.pdf>
[272] World Trade Organization, *Trade and Climate Change – Information Brief No. 1* at 5, online (pdf): <https://www.wto.org/english/news_e/news21_e/clim_03nov21-1_e.pdf>
[273] World Trade Organization, *supra* note 276
[274] *Ibid*

interface include carbon-trading mechanisms, for instance. Now, WTO Committees are asking reflecting on how to achieve 'nature positive trade,'[275] which is basically understood to be the equivalent goal of 'net zero' in biodiversity law. However, it would rather seem like free trade and environmental policy are in 'direct conflict' since free trade is intended to remove the market distortions that environmental policy seeks to impose.

Energy security

Given the above, it is clear that the WTO faces a significant challenge in interpreting the concept of energy security, particularly within the realm of the trade of electricity. On one hand, cross-border electricity trade enhances energy security by diversifying supply sources; on the other hand, it introduces vulnerabilities due to dependency on foreign states. [276] The concept of energy security is therefore highly contextual and varies significantly among member states based on their unique energy needs, resources, and geopolitical contexts. This ambiguity makes it challenging to develop a universally accepted definition that balances the dual aspects of securing supply through international trade and mitigating risks associated with dependency on foreign sources.Therefore, it is wholly unclear whether and how WTO member states could agree on a definition of energy security that could apply in their trade relations. Accordingly, a pragmatic approach might involve creating flexible frameworks within the WTO that allow member states to address their specific energy security concerns while promoting fair and open trade practices. For example, an author has suggested that one viable option is the use of the WTO's waiver power, as outlined in Article IX:3 of the WTO

[275] World Trade Organization, *supra* note 276
[276] Raphael J. Heffron & Gavin F. M. Little (eds), *Delivering Energy Law and Policy in the EU and the US* (Edinburgh University Press, 2016)

Agreement.[277] This provision enables the Ministerial Conference to waive certain obligations under exceptional circumstances, thereby allowing member states to implement measures that may otherwise conflict with WTO rules. Such a waiver would provide temporary policy space for member states to develop their green energy sectors, ensuring energy security without undermining the integrity of WTO law. However, without such a waiver, it remains unclear how the WTO will reconcile these dual objectives. Until a waiver is enacted therefore, I argue that countries like Canada should consider advocating for policy space to protect their hydraulic resources within regional agreements like CUSMA, balancing national interests with international trade obligations.

At CUSMA level

Given the challenges in reaching a consensus on an energy security-related clause at the WTO level, Canada should proactively negotiate for policy space to protect its natural resources within the CUSMA framework. The upcoming renegotiation of CUSMA, anticipated for 2026, presents a strategic opportunity for Canada to secure these provisions and safeguard its energy interests.

The question of proportionality

In any negotiations on energy, Canada must advocate against the inclusion of a proportionality clause as found in the previously applicable North American Free Trade Agreement (NAFTA). Indeed, NAFTA contained a controversial energy proportionality

[277] Angelica Rutherford, *Energy Security and Green Energy: National Policies and the Law of the WTO* (Springer 2020), at 133

clause[278] in Article 605 that arguably "impinge[d] on a country's sovereignty like no other international agreement"[279] by imposing the requirement that export restrictions do not "disrupt 'normal channels' of supply."[280] This entailed, for instance, that if Canada wanted to impose restrictions on its exports of energy, "it would have [had] to give the US the opportunity to maintain a proportionate volume of Canadian supply based on recent export levels"[281], which we must assume had been ever increasing up to the point of imposition of the export restriction.[282] So, "NAFTA Article 605 does not allow a party to completely shut down exports on the grounds of critical shortage or conservation of natural resources."[283] For this reason, it was deemed to be "a grave danger for Canada"[284] since it did not allow Canada "to completely shut down exports on the grounds of critical shortage or conservation of natural resources."[285] Therefore the absence of this clause in the Canada-United States-Mexico Agreement (CUSMA) was considered to effectively reaffirm "Canada's sovereignty over its energy resources." [286] Given the above, Canada should in any case refuse the inclusion of such a proportionality clause in any international treaty.

Side-letter on energy

[278] Roberto Rios Herrán & Pietro Poretti in Julia Selivanova (ed), *Regulation of Energy in International Trade Law: WTO, NAFTA and Energy Chapter* (Kluwer Law International, 2011) 34 Global Trade Law Series at 364
[279] *Ibid at* 365
[280] *Ibid* at 362
[281] Government of Canada, *Canada-United States-Mexico Agreement (CUSMA) - Energy Provisions Summary* < https://www.international.gc.ca/trade-commerce/trade-agreements-accords-commerciaux/agr-acc/cusma-aceum/energy-energie.aspx?lang=eng >
[282] Roberto Rios Herrán & Pietro Poretti, *supra* note 285 at 364
[283] *Ibid* at 362
[284] *Ibid* at 365
[285] Roberto Rios Herrán & Pietro Poretti *supra* note 285 at 362

[286] Government of Canada, *supra* note 288

While the NAFTA reforms provided a unique opportunity to dress out specific electricity trading rules, the resulting CUSMA is somewhat disappointing because it "does not continue the tradition of a separate energy chapter."[287] Rather, trade in energy goods, including electricity, is covered by provisions across the CUSMA.[288] According to Canadian officials, "this does not fundamentally alter the obligations previously assumed under chapter 6" of NAFTA. Instead, Canada and the US (only, *not* Mexico) agreed on a side letter[289] on energy which includes commitments in the field of energy, notably with regards to regulatory cooperation.[290] In particular, Article 4(1) of the side-letter requires that the Parties establish independent energy regulatory authorities, which must not disrupt contractual relationships according to Article 4(2). It is an interesting provision; although it does not replicate NAFTA's proportionality clause, Article 4(2) seems to intend to have the same effect. The phrasing, however, is different, and we could assume that in the absence of the proportionality clause, Article 4(2) cannot prevent Canada from curbing its exports of energy if it chooses to do so. To ensure that it has the policy space to restrict exports of Quebec hydroelectricity under international trade law, Canada should aim for the CUSMA framework to include binding provisions on energy trade, thereby affirming its right to curb exports of energy for national energy security purposes. While these restrictions might seem contrary to the spirit of cooperation embodied in CUSMA's side letters, it is crucial to explicitly link them to environmental and energy security goals. However, given the eventual re-election of Donald Trump in November 2024 and the anticipated difficulty in securing new environmental commitments with the US by 2026, Canada must consider alternative strategies than the translation of the side-letter into an energy chapter with an energy security exception.

[287] Christopher Frey, *supra* note 7 at 57
[288] Government of Canada, *supra* note 288
[289] Canada-United States Side Letter on Energy (CUSMA) (2018) <https://www.international.gc.ca/trade-commerce/assets/pdfs/agreements-accords/cusma-aceum/letter-energy.pdf>
[290] Christopher Frey, *supra* note 7 at 57

Widening the interpretation of Article XX

In the absence of an energy security-specific exception clause in the GATT, Canada should argue for a broad interpretation of all grounds under Article XX to apply to restrictions on hydroelectricity exports. Since energy trade provisions are dispersed throughout the GATT rather than consolidated in a dedicated chapter, such an interpretation is arguably necessary. Furthermore, given the critical nexus between environmental sustainability and trade, and recognizing that hydroelectricity fundamentally relies on water resources, it would be logical for Canada to emphasize the need for a flexible interpretation of Article XX provisions, especially concerning energy trade. Indeed, the application of Article XX tests could be made more lenient within this context, allowing for a more practical and context-sensitive enforcement of trade restrictions related to energy security. Each of the GATT's Article XX clauses could thus potentially justify export restrictions. Thus, restrictions on exports of hydroelectricity could be justified : (1) to prevent the depletion of water resources, ensuring the health and sustainability of local communities (Article XX(b)); (2) because excessive exploitation of hydraulic resources contravenes Canada's public morals concerning environmental stewardship (Article XX(a)); (3) to conserve Quebec water (Article XX(g)); (4) to prevent a short supply of hydroelectricity, as widely interpreted (Article XX(j)). To ensure the legitimacy and proper application of these provisions while preventing potential misuse, Canada could propose a periodic review mechanism for export restrictions. Such a mechanism involving regular assessments by a dedicated subcommittee within the CUSMA framework are common, and would ensure transparency and accountability. Arguing for this flexible interpretation at the CUSMA level is more practicable than at WTO level, since it would require the approval of only the US and Mexico, not that of all WTO member states. CUSMA

constitutes the appropriate forum for the adoption of such WTO-plus obligations, allowing for more effective management of energy trade and associated disputes in an era where these issues are becoming increasingly prominent. With some luck, Canadian trade negotiators and their American counterparts can reach a written agreement on this matter which can be endorsed by both governments. Despite former President Trump's known reluctance to endorse environmental provisions, his past behaviour indicates there is hope he might sign the deal if he considers it beneficial for him in one way or another, considering our proposal does not involve any actual change in legislation.

To sum up, Canada should take the lead in addressing the inadequacies of Article XX of the GATT 1994 in energy matters, particularly regarding hydroelectricity trade. It is essential for Canada to negotiate for more policy space under international trade law to protect its natural resources, whether at the WTO level or within CUSMA. Given the current logic and constraints at the WTO, it is more feasible for Canada to achieve meaningful negotiation at CUSMA level, arguing that all grounds under Article XX should be broadly interpreted to apply to energy trade restrictions, particularly concerning electricity and hydroelectricity.

To conclude, this chapter has explained how Canada must demonstrate a critical shortage of hydroelectricity without viable alternatives to its environmentally conscious population to justify the imposition of export restrictions under Article XX. While justification under this provision is not guaranteed, Canada needs to argue for policy space within international trade law to protect its natural resources, particularly hydroelectric power. Canada must highlight that the anticipated difficulties in justifying export restrictions under Article XX limit its policymaking autonomy and sovereignty, thereby necessitating the inclusion of an energy chapter or clause in trade agreements. In the absence of the possibility of negotiating a

specific clause at the international level, Canada should argue that all grounds under Article XX should be broadly interpreted to apply to energy trade restrictions, particularly concerning electricity and hydroelectricity.

Conclusion

In conclusion, while Quebec's ambition to become the "battery" of Northeast America, it faces significant challenges in fulfilling its pledge to supply both foreign and domestic consumers. These challenges are primarily due to low water levels essential for hydroelectricity production in the province. Both the provincial Quebec Government and the federal Canadian Government have the authority to deny authorisation of exports of Quebec hydroelectricity. However, such a decision by Canadian authorities would likely contravene Article XI:1 of the GATT 1994, which prohibits export restrictions. Thus, Canada is unlikely to successfully justify the GATT compliance of hydroelectricity export restrictions with Article XI:1 under Article XI:2(a) because to qualify, such restrictions would need to be imposed temporarily to alleviate a critical shortage of an essential product. However, it is likely that the WTO would not recognise a 'critical' shortage situation, as Canada has the option to increase its electricity supply through alternative means, such as developing other energy sources. Consequently, and in the absence of a specific energy security exception, Canada will have no choice but to justify the GATT inconsistency of hydroelectricity export restrictions under one of the grounds of Article XX. Difficulties in justifying hydroelectricity export restrictions under Article XX arise because the tests under these exception grounds are not well suited to the context of (hydro)electricity trade. Specifically, hydroelectricity does not easily fit within the exceptions provided by Article XX(g) and XX(j). To qualify under Article XX(g), a measure must genuinely relate to the conservation of an exhaustible natural resource, rather than primarily focusing on securing a stable electricity supply without explicit environmental conservation objectives. It is uncertain whether the WTO would recognize hydroelectricity as an 'exhaustible natural resource' due to its intrinsic link to water, especially since it is marketed as a renewable resource. However, water can become exhaustible if the extraction rate exceeds

the replenishment rate. Additionally, it is unclear how Canada might justify that its restrictions on Quebec hydroelectricity exports are "enacted in conjunction with restrictions on domestic production or consumption," considering the specific market dynamics and Quebec's hydroelectricity consumption habits. To qualify under Article XX(j), Canada must prove that its hydroelectricity export restrictions are essential to address the acquisition or distribution of products in local or short supply. Although this threshold is lower than that of the 'critical' shortage in Article XI:2(a), Canada would still face challenges in proving that there are no 'reasonably available' alternatives to achieve their desired goal. This includes proving that other measures, such as energy efficiency improvements, the construction of new dams, the development of other renewable energy sources, or the import of electricity, are insufficient or impractical to meet the province's needs as effectively and promptly as domestic hydroelectricity. Nonetheless, this thesis argues that Canadian authorities could still succeed in convincing a WTO panel that restrictions on Quebec hydroelectricity exports are justified under Article XX by demonstrating that they are necessary and without reasonable alternatives to address a critical situation for an environmentally conscious population. To strengthen this justification, the Quebec government's Bill 69, *An Act to Ensure the Responsible Governance of Energy Resources and to Amend Various Legislative Provisions*, should specify the conditions under which it can refuse exports of hydroelectricity, particularly by explicitly citing low water levels. This would ensure that any potential export restrictions are imposed in compliance with the GATT. Finally, given the complexities associated with fitting hydroelectricity into Article XX exceptions, Canada should proactively seek to negotiate explicit policy space at the international level to protect its hydroelectric resources. This could be achieved through the inclusion of an energy security-specific clause in international trade agreements, particularly during the forthcoming review of the CUSMA in 2026. Alternatively, Canada should advocate for a broad interpretation of Article XX grounds by WTO panels to

accommodate hydroelectricity export restrictions. By doing so, Canada could better safeguard its natural resources and position itself as a leader in defining the legal framework for energy trade in the 21st century.

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