

# RECENT CANADIAN LEGAL DEVELOPMENTS OF INTEREST TO THE MARINE TRANSPORTATION INDUSTRY RELATING TO RENEWABLE ENERGY AND ENERGY TRANSITION

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## Introduction

Over the course of the past few centuries, the energy sources used in marine transportation have transformed: wind and sails were replaced by coal, heavy fuels and eventually marine diesel, and now renewable energy sources are again in favour to support the energy transition, particularly with the goal to achieve global decarbonization by 2050. On a global scale, shipping companies are working to cut emissions in accordance with international agreements reached in 2018 by the International Maritime Organization's ("IMO") member states. The IMO Initial Strategy sets the framework for the reduction of greenhouse gas ("GHG") emissions from shipping. The main goals are to cut annual GHG emissions from international shipping by at least half by 2050, compared with their level in 2008, and to work towards phasing out GHG emissions from shipping entirely as soon as possible in this century.<sup>1</sup>

This paper provides a high-level discussion of the existing renewable energy options and framework for use in the marine transportation industry, including consideration of the relevant international, federal, and provincial laws governing the use of renewable energy applicable to Canadian business. This includes key considerations for certain of the applicable legal regimes, including obligations arising from statute, environmental protection and conservation, safety, and emergencies.

Our assessment is that Canadian regulatory regimes will need to be amended and updated in the near future in order to support the relatively new introduction of alternative renewable energy sources such as hydrogen, methanol, natural gas and electricity in marine transportation. This discussion is made more topical because of the current realities facing the marine transportation industry, including trends in technology, supply chain disruptions, costs, development of infrastructure for alternative fuels, energy security, policy and geopolitical forces.

There are potentially serious consequences where laws have not been adapted to reflect the changing energy landscape. To address these risks, our paper concludes with an overview of practical business strategies for the marine transportation industry to address potential gaps in the governing laws in light of recent policy discussions, including through systems, standards, and contracts.

## Overview of Recent Industry and Legal Developments

Evolution hallmarks the current Canadian energy and marine transportation industries, as progression has and continues to occur in relation to legal, technological, and industry developments. Evolution is a gradual process that does not merely eliminate its predecessors but builds upon its existing framework.

As a primer, compared to railways, aviation, and vehicular transportation; marine transportation in Canada contributes the lowest percentage toward GHG emissions – comprising only 0.59 percent, even though it is a significant form of transportation in Canada.<sup>2</sup> For this reason, utilizing

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and expanding Canadian marine industry will most likely produce *significant* positive results, whether it be environmentally, logistically, or competitively. The foregoing is an excellent foundation in working towards the Canadian commitment of net-zero emissions by 2050 (the “**2050 Target**”).<sup>3</sup> However, as noted by the Chamber of Marine Commerce (the “**CMC**”), an apt regulatory framework and integration of non-renewable resources must be implemented within ten years if the 2050 Target is to be secured.<sup>4</sup>

Marine fuels are notoriously poor to very poor quality and the bunker oil burned by most large oceangoing vessels is often the residue of other refining processes and contains even higher concentrations of harmful compounds than the original crude oil. In recent years, regulations both locally and internationally have focused on the impact of marine transportation as well as global emissions. It is well-known in the marine industry that on January 1, 2020, the IMO implemented restrictions on the sulphur content in the fuel oil used onboard ships. These new rules brought about a stricter regime requiring significant reduction of sulphur in ships operating outside designated emission control areas, which limits were also made compulsory following an amendment to Annex VI of the International Convention for the Prevention of Pollution from Ships (MARPOL). As a result of these rules, the shipping industry has made the necessary modifications in order to use very low sulphur fuel oil to comply with the new limit, and no safety issues have to date been reported to IMO.<sup>5</sup>

#### “Green Corridors” and Provincial Action

Initiatives that are in line with the 2050 Target include the CMC’s call for a “green corridor”; a proposed shipping route in the Great Lakes – St. Lawrence region that would optimize GHG emissions and increase shipping reliance upon biofuels and alternative options.<sup>6</sup> Further efforts are evident in provincial strategies tailored to marine transportation, namely Quebec’s *Marine Transport Intervention Framework* (the “**Quebec Framework**”), the proposed Ontario *Marine Strategy* (the “**Ontario Strategy**”), Nova Scotia’s *Opportunity for Marine Electrification* (the “**N.S. Opportunity**”) and British Columbia’s *CleanBC* (the “**BC Strategy**”).

##### *(a) Quebec*

Akin to the timely critical mineral regimes that are present throughout the provinces and at a national scale, the Quebec Framework prioritizes economic sustainability and environmental conservation. In an evolution toward reduced emissions, the Quebec Framework predicts that its new fleet in the ensuing years will have an 86 percent reduction in nitrogen oxide emissions, a 99.9 percent reduction in sulphur oxide emissions, and an 85 percent reduction in particulate matter emissions.<sup>7</sup> To meet these emission reduction goals, Quebec has begun to phase-in a new fleet of ships powered by liquefied natural gas (“**LNG**”).<sup>8</sup> The implementation of new technology and resources is an “*action item*” prioritized by the Quebec Framework, which supports on-going research and development pertinent to pollution and GHG reduction.<sup>9</sup>

##### *(b) Ontario*

Similar to the Quebec Framework, the proposed Ontario Strategy would prioritize marine transportation as a preferred method of shipping and therefore promote the development of robust marine infrastructure.<sup>10</sup> As the Canadian marine industry awaits the implementation of the Ontario Strategy, it serves as a reminder of the benefits of a coordinated approach on achieving specific goals, particularly when working towards something as ambitious as the 2050 Target. This is also especially true for marine transportation, since as is discussed further below, the marine and energy

industries are regulated as shared areas of jurisdiction. The implication of this is that in order to ensure success, or at least improve the probability of success, the different levels of government must be synchronised in the approach to regulation so as to provide regulatory certainty for business in order to encourage investment and not stifle technological advancements.

*(c) Nova Scotia*

Although not a true ‘strategy’, the N.S. Opportunity is an additional encouraging sign, pointing toward a coordinated nation-wide approach to marine decarbonization. Namely, Nova Scotia has recognized their role as a national and global technology provider, and a leader in Canadian in marine transportation, with 20,000 ships housed in Eastern Canada.<sup>11</sup> The Port of Halifax is also one of the largest in the country and a gateway to Atlantic trade and shipping routes.

*(d) British Columbia (BC)*

The BC Strategy is the provincial government’s plan to lower climate-changing emissions by 40 percent by 2030, and includes the Low Carbon Fuel Standard (the “**Standard**”), a province-wide approach to reducing GHGs in the transportation sector. The Standard requires fuel suppliers to progressively decrease the average carbon intensity of the fuels they supply to users in BC. In building on their progress to date, the BC Government has expanded this Standard to cover marine fuels and they also intend to consider new compliance options such as negative emissions technologies, while increasing the financial implications of failing to comply.<sup>12</sup>

Federal Action

Several substantive measures were announced by the Government of Canada (the “**GOC**”) on November 7, 2022 as the Minister of Transport announced the Canadian Green Shipping Corridors Framework (the “**Framework**”) and Canada having joined the Zero-Emission Shipping Mission.<sup>13</sup> In particular, the Framework informs the GOC’s support in identifying clean fuel, net-zero emission technology, accessible shore power, and improved energy efficiency. Paired with these goals are legislative concerns, as vague policies are a hindrance to the timely implementation and approval of different facets of marine transportation. The two GOC programs are intended to work in unison to support the growth of green shipping corridors.<sup>14</sup>

In addition, on November 3, 2022, as part of Canada’s 2022 Fall Economic Statement, the GOC announced a proposal to introduce a new refundable tax credit for capital investments in certain types of clean technology projects, including net-zero technologies and clean hydrogen. Promoted as part of the GOC’s plan to facilitate job creation, the announcement indicated that the rate of the new tax credit applicable to any particular project will vary depending on the project’s compliance with certain labour conditions, with the credit ranging from a minimum of 20 percent to up to 30 percent, depending on adherence to the prescribed labour conditions. Many of the particulars regarding the new tax credit are still unclear, such as the specific details regarding the types of investments that may qualify, restrictions (if any) relating to the eligibility of investors, and the nature of the labour conditions to be satisfied to receive the full 30 percent credit. It is anticipated that the federal budget, to be released on March 28, 2023, will contain many of the details regarding the credit and its implementation. When first announced last fall, the GOC indicated that the credit would be available as of the date of the 2023 Budget announcement and would remain in place until 2035 (with a gradual phase-out beginning in 2032).

Further Notable Advancements & Solutions

Elemental to the advancement of green shipping corridors is the production and use of clean shipping fuel. Several options are being evaluated as energy sources for propelling ships:

- electrification of fuel (*i.e.* converting electricity into fuels, producing e-fuels);
- developing e-fuels through electrolysis;
- LNG;
- wind;
- solar;
- ammonia fuel;
- methane fuel;
- methanol fuel; and
- bio-fuels.<sup>15</sup>

At present, the preceding clean fuels, amongst others, are viable solutions in meeting the 2050 Target. Hydrogen is also in the early stages of investigation although this is not yet viable for large-scale commercial marine shipping applications in Canada.<sup>16</sup> The marine industry is focused on using greener alternatives rather than the traditional marine fuels with a view to cutting emissions of climate-changing gases and air pollutants, but there is not one fuel that “fits all” industry needs. Experts and stakeholders in the shipping industry agree that moving to alternative fuels is the best path forward, and they are weighing the advantages and disadvantages of the various means to achieve low-emission or zero-emission shipping, including taking into consideration on a production and availability of materials as well as economic factors.

Notwithstanding the positive developments noted above, in a 2019 report commissioned by the World Wide Fund for Nature – Canada (“**WWF**”), a number of barriers were identified as being ever-present. Such barriers include technological readiness, fuel availability, infrastructure constraints, costs, and legislative impediments. Intriguingly, the WWF posits the concept of a “bridging philosophy”, which is in tune with the evolution of energy sources and infrastructure. These bridging technologies would permit the transition from conventional shipping fuel → to those with reduced carbon footprints → until the ship can operate solely on carbon-neutral fuel. In support of this philosophy, ships would be furnished with flexible energy converters and storage tanks, coupled with flexible refuelling ports.<sup>17</sup> Port expansion is occurring on Canada’s West coast, as two major British Columbia projects are focused on broadening LNG’s shore-side infrastructure.<sup>18</sup>

The heightened intersection between the Canadian energy and marine industries is welcomed, as the two sectors may work collectively to not only achieve the 2050 Target but also to improve Canadian supply chains and economic competitiveness. That being said, these goals hinge on an expedited progression wherein the Canadian legislative framework not only permits but fosters a growth environment. The prior section highlighted only a limited set of industry developments. Keeping in mind the larger scope, it is essential that Canadian statutes, regulations, and policies reflect the energy evolution occurring in the marine transportation industry.

### **Discussion of Applicable Regimes and Obligations**

As with energy and transportation generally, the regulation of transitioning energy sources in marine transport in Canada is complicated. This is because energy, transportation, and the environment are areas of shared responsibility amongst the federal, provincial and municipal levels

of government. The *Constitution Act of 1867* sets out the respective roles of the federal and provincial governments. Specifically, the GOC has the constitutional authority over international and inter-provincial transportation, while the provincial governments are responsible for intra-provincial transportation. With respect to energy, the GOC has authority to oversee matters of national importance, such as efficiency, climate change, and certain areas, such as nuclear energy and clean fuels. In practical terms, the efficient operation and regulation of Canada's transportation system relies on the close cooperation of all partners (including the private sector) to help ensure safety, efficiency, environmental sustainability, and security.

The IMO is the only organization to have adopted energy-efficiency measures that are legally binding across an entire global industry, applying to all countries. Notably, at the international level, the 2050 Target is shared with over 120 countries, including the other G7 nations, who have also committed to be net-zero emissions by 2050. The commitments were formalized in the Paris Agreement, which is a legally-binding international treaty that came into force on November 4, 2016 following the negotiations at the UN Climate Change Conference (COP21) in Paris in December, 2015. Amongst other things, the Paris Agreement provides for significant reductions in GHG emissions, a review of countries' commitments every five years, and financing incentives to developing countries to mitigate climate change, strengthen resilience and develop adaptations to climate impacts. The Paris Agreement does not specifically address marine transportation or transitioning energy industries, but it nevertheless has significant impacts on those industries because of the commitments made by the signatories. Particularly, the IMO, as the regulatory body for the shipping industry, is committed to reducing greenhouse gas emissions from international shipping. The IMO Initial Strategy identifies key areas in the international shipping sector whereby the use of alternative fuels and/or energy sources for international shipping will be integral to achieve the overall goals. These include improving energy efficient design requirements for ships, reducing CO<sub>2</sub> emissions in marine transportation, by at least 40 percent by 2030, and 70 percent by 2050, compared to 2008. By 2025, all new build ships will be subject to the much tougher requirements and be 30 percent more energy efficient than those built in 2014.<sup>19</sup>

At the federal level, Canada's relevant regulators for the marine transportation and transitioning energy industries include Transport Canada, the Canadian Coast Guard and their science partners at Environment and Climate Change Canada and Fisheries and Oceans Canada. Other regulators, such as the Canada Energy Regulator, may be implicated to the extent that marine projects or infrastructure involve pipelines or powerlines. Transport Canada's role is to regulate transportation policies and programs, which includes licensing, certifying and registering vessels, providing safety and training programs, and establishing navigational aids and materials for commercial operators (amongst other things). The Canadian Coast Guard is a special operating agency within Fisheries and Oceans Canada, who, among other things, work to protect the safety of mariners in Canadian waters, whereas Environment and Climate Change Canada provides insight into environment and weather forecasting and sustainability indicators, climate change monitoring and progress reports, and pollution and waste management. They also administer over a dozen statutes, including many that are relevant to energy generation, emissions, marine operations, and waste. Fisheries and Oceans Canada is the ministry responsible for safeguarding Canada's waters and managing fishing and ocean resources. This includes habitat protection but also supporting economic development initiatives, including growth in the marine transportation sector.

Also important are the Canada Port Authorities, which operate under the jurisdiction of the *Canada Marine Act* and at arm's length from the GOC. They are governed by a board of directors selected by port users and the relevant municipal, provincial and federal governments. They set the business direction and make commercial decisions for the port, including decisions such as setting berthage and wharfage fees, maintaining and dredging commercial shipping channels, and acting as landlords with respect to commercial shipping channels. They are generally financially self-sufficient, of strategic importance to Canadian trade and economy, are interconnected to major train and highway networks, and have a diverse population of users.

Provincial statutes and regulations and ministries are responsible to the extent that marine transportation or transitioning energy implicates provincial areas of jurisdiction. This occurs where such matters only affect the people of that particular province. For example, this may include matters such as a port or terminal's provincial environmental considerations or occupational health and safety matters related to the workers at the port.

Canadian municipalities are given their powers through their respective provinces. Therefore, the jurisdiction of municipalities varies from province to province as some provinces grant municipalities more powers and discretion than others. In addition, some municipalities, including those recognized as being port cities, such as Vancouver, Montreal and Saint John, have City Charters. In such cities, governance is through a city charter, which shifts authority and powers from the province to the city over certain areas that directly impact the residents of those cities and reflects laws and responsibilities relevant to that particular city.<sup>20</sup>

### **Consequences of Laws not reflecting the State of Technology and Transition to Renewable Energy Sources**

As a start, the immediate consequence of failing to align Canadian laws with the evolution occurring in marine transportation would be the failure to obtain the 2050 Target. The key to remedying the gap between Canadian marine transportation and energy objectives and, achieving tangible results situates on effective implementation. Implementation consists of a coordinated approach between Canadian shipping ports, industry, and frequented route lines in cooperation with legislative drafters and policy makers at all levels of government. Yet, absent implementation and appropriate advancement, a cascade effect of consequences could transpire.

Namely, ships risk continued reliance upon conventional shipping fuels such as marine diesel and in turn, failing to meet Canadian and global shipping targets. In high anticipation, the 27<sup>th</sup> United Nations Climate Change Conference (“**COP 27**”) was held from November 6 - 20, 2022 but, did not set the ambitious shipping decarbonization timelines that were expected. These timeframes will be reserved for spring 2023, when The Marine Environment Protection Committee will convene for its 80<sup>th</sup> conference, operating as a subset of the IMO.<sup>21</sup> Members of the IMO recognize the current stakes, as an ambitious GHG strategy will offer global guidance for the industry.<sup>22</sup> Failure to do so results in the global shipping industry continuing to match the GHG emissions of Germany.<sup>23</sup>

Canadian-based regulatory deficiencies exist with respect to the implementation of LNG into the Canadian marine sector. Specifically, this includes ambiguous legislation concerning LNG bunkering ships, shore-side facilities, and supply chains. The uncertainties pertain to the requirements for smaller LNG ships and supply carriers and may inevitably result in stagnating

LNG projects. Evidently, an immediate harmony between the marine transition and Canadian legislation is an impossible task. As an alternative, returning to the “bridging philosophy” proposed by the WWF, it serves as a point of entry whereby energy evolution in marine transportation is readily achievable. Through this framework, the consequences of an imprecise reflection between legislation and industry objectives are mitigated, as the ‘bridge’ factors in the long-term goals that are sought.<sup>24</sup> Despite this, a conscious effort must be made to prevent avoidable short and long-term negative consequences.

The effects of climate change are generally accepted as being rampant, and the Canadian marine transportation industry is positioned to not only counter, but operate as a global leader. All of this centres, however, on the recurring theme of immediate action and implementation. To avoid catastrophe, a unified and partnered approach between federal, provincial, and municipal/local levels of government, together with Transport Canada and other related and interested parties, is necessary to provide clarity on how Canadian legislation can be aptly tailored toward the 2050 Target. To do otherwise will impact multiple aspects of the Canadian economy, ranging from supply chain disruptions to reduced competitiveness on an international scale. Through this dialogue, the levels of government and other interested parties can avoid or minimize consequences by providing much needed industry transparency. At this point in time, Canada has the resources and expertise to be a leader in marine decarbonization and an active and ‘bridged’ approach tied with continual open discourse is a prerequisite to avoiding potentially dire consequences. Moving forward, it is critical that (i) the GOC remains committed to pursuing and implementing its proposed initiatives; (ii) the relevant and applicable provinces adhere to their respective strategies; and (iii) global organizations, including IMO, assist in this unified evolution occurring in the marine and energy industries.

### **Mitigation Strategies to Address Gaps in Legal Regimes**

There are a variety of options for business organizations in the marine sector looking to mitigate their risk resulting from laws not reflecting the state of technology within the marine transportation industry and the transition to renewable energy.

Firstly, business owners and operators need to recognize the patchwork of applicable laws, including understanding what laws apply, in what circumstances, and when there may be gaps or uncertainties. In most cases, this means new laws need to be enacted or that old laws need to be amended or repealed. For those interested in such matters, the following options may be prudent: participating in formal or informal consultations with government officials, undertaking lobbying efforts, or providing comments during legislative proceedings such as bill drafting. In some cases, business organizations and stakeholders may be able to challenge existing laws in court. This could be on the basis that a law is unconstitutional which could lead to a declaration of invalidity or a decision by the courts to decline to apply the law. Business organizations that have yet to commence operations, or are impacted by legal frameworks that hinder their proposed business plans can also compare alternative jurisdictions to determine where it would be most favourable to (re-)locate their headquarters and conduct their business.

Secondly, business organizations should implement design and operations standards and practices that not only reflect the applicable statutory and common law frameworks, but also address gaps or other areas of weakness in the existing regimes. This could be done on an internal basis, or on a small-scale between business organizations that are working together as contract partners. In the

alternative, it could be undertaken on a larger scale within industry or within a subsector of industry. It could involve commitment of those business organizations using or developing a certain technology, those operating in a certain location, or those with common business goals. For example, this may involve developing a standard amongst those shippers using a certain type of renewable energy technology on their ships. In most cases, such standards and practices would meet or exceed the statutory and common law requirements, by adding a degree of certainty to how the business organizations are expected to operate.

Thirdly, business organizations can also formalize systematic processes and procedures for detecting, reporting and acting on violations or insufficient designs, operations and practices – even where there may not be formalized legal regimes or regulatory frameworks responsive to the technology and processes used in their operations. For example, this may involve insuring that structured diligence efforts and data collection/reporting are routine so that a culture of ongoing feedback and improvement is strived for. These sorts of collaborative efforts will help to provide legitimacy and more certainty in the use of transitional energy sources in marine transportation.

Fourthly, and in addition, business organizations can utilize insurance products to help address potential risks. Given the potential exposures caused by the use of novel technologies, complex supply chains, multi-jurisdiction operations, environmental and climate risks, risk transfer and risk mitigation measures should be at the forefront of business organizations' financial and risk planning. Business organizations need to be proactive in identifying and obtaining policies that reflect their specific circumstances and risk thresholds. There are a number of themes that should be considered. For example, the construction and operation of a marine-servicing facility or the building or retrofitting of a ship may include risks such as changes in scope of the project, lack of experience or qualifications of workers, unpredictable weather, delays or disruptions in supply of materials and equipment, and force majeure events. Technology risks are also likely, such as design flaws in the technology, lack of skilled workers to operate or fix technology, and (un)availability of parts and other materials to commission the technology or complete routine and emergency maintenance. On a day-to-day basis, these technology risks can become operational risks as productivity of a new technology may not meet initial expectations or there may be barriers to using the technology to its full potential. These impacts may then cause problems in the transport, such as delays in transportation time, inability to carry a full load, and failure to fulfil contracts.

Fifthly, in many jurisdictions, regulatory challenges will be paramount, given the uncertainty and lack of experience on the part of regulators with new marine transportation technologies and types of transitioning energy sources. This may cause hurdles in obtaining licensing and permits, approvals, and perhaps ensuring qualifications for financial incentives such as grants, credits or tax benefits. Moreover, changing environment and climate conditions may shift the regulatory landscape as a project proceeds. Business organizations need to be proactive in working with regulators on their projects and consider the entire lifecycle of their plans when approaching and working-with regulators.

Lastly, contractual tools and remedies with business partners, governments and regulators and third parties may be helpful to address uncertainty. For example, business organizations may work to develop standardized templates for use with their suppliers and customers, utilize contract management tools to assist with the contract lifecycle, and incorporate procedures for tracking



performance and scheduling obligations and responding to any breaches or delays in same. Within the contracts, business organizations should be mindful of loss and liability provisions, such as indemnities, hold harmless agreements, and duty to defend provisions. Moreover, representations, warranties and covenants can be tailored for particular circumstances and can be effectively used as a mitigation strategy, together with the financial terms negotiated for any breaches (such as caps and baskets/deductibles).

## Conclusion

The diverse range of regulators, stakeholders, vessels and ports presents significant challenges to achieving net zero emissions and meeting the 2050 Target. While much of decarbonization in the shipping industry is focused on delivering alternative fuels to substantially reduce GHG emissions, it is equally important to focus on the resources necessary to produce the low-carbon fuels, the infrastructure to deliver the fuels as well as their consumption onboard the ships. The interplay of regulatory, technical, operational and economic actions, safe and efficient bunkering of alternative fuels; incentives in promoting sustainable low-carbon and zero-carbon shipping; and support for the optimization of ports is complex within the maritime sector. In order to reduce emissions from shipping and to achieve global decarbonization by 2050, the shipping industry at large, ports and governments will need to work together. In Canada, there needs to be a focus on identifying what will work within in our industry, particularly since projects are being pursued on both the West and East coasts, and how to adapt Canadian regulations to accommodate the use of natural gas (and other alternative fuels) as a marine fuel, while also considering the codes, standards, regulations, personnel training, operating practices and procedures, and fuel supply infrastructure. Essentially, the focus should be to address the gaps and uncertainties in the current and Canadian regulatory regime for low to zero carbon fueled vessels and the onshore facilities necessary for the supply chain and gaining market access.

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## Endnotes

<sup>1</sup> IMO's work to cut GHG emissions from ships, online <<https://www.imo.org/en/MediaCentre/HotTopics/Pages/Cutting-GHG-emissions.aspx#:~:text=2018%20Initial%20IMO%20GHG%20Strategy&text=The%20main%20goals%20are%3A,as%20possible%20in%20this%20century>>

<sup>2</sup> "En route to net zero" (2023), online: *Chamber of Marine Commerce* <[www.marinedelivers.com/netzero/](http://www.marinedelivers.com/netzero/)>.

<sup>3</sup> "Net-Zero Emissions by 2050" (27 January 2023), online: *Government of Canada* <[www.canada.ca/en/services/environment/weather/climatechange/climate-plan/net-zero-emissions-2050](http://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/net-zero-emissions-2050)>.

<sup>4</sup> "En route to net zero", *supra* note 2.

<sup>5</sup> "IMO 2020 – Cutting Sulphur Oxide Emissions", online <<https://www.imo.org/en/MediaCentre/HotTopics/Pages/Sulphur-2020.aspx>>

<sup>6</sup> Julius Melnitzer, "Marine commerce group calls for green shipping corridor to help cut emissions" (20 March 2023), online: *Brantford: The Expositor* <[www.brantfordexpositor.ca/transportation/marine-commerce-green-shipping-corridor-cut-emissions](http://www.brantfordexpositor.ca/transportation/marine-commerce-green-shipping-corridor-cut-emissions)>.

<sup>7</sup> "Transporting Quebec Towards Modernity: Sustainable Mobility Policy 2030 – Maritime Transport Intervention Framework" (2019): *Government of Quebec* at 21.

<sup>8</sup> *Ibid.*

<sup>9</sup> *Ibid* at 28.

<sup>10</sup> Great Lakes and St. Lawrence Cities Initiative, "Great Lakes mayors united in support for ambitious Ontario Marine Strategy" (23 June 2022) <[www.glslcities.org/wp-content/uploads/2022/06](http://www.glslcities.org/wp-content/uploads/2022/06)>.

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<sup>12</sup> "Clean BC Road Map to 2030", online: *Government of British Columbia* <[https://www2.gov.bc.ca/assets/gov/environment/climate-change/action/cleanbc/cleanbc\\_roadmap\\_2030.pdf](https://www2.gov.bc.ca/assets/gov/environment/climate-change/action/cleanbc/cleanbc_roadmap_2030.pdf)>.

<sup>13</sup> "Minister of Transport announces Canadian Green Shipping Corridors Framework and Canada joining the Zero-Emission Shipping Mission" (7 November 2022), online: *Government of Canada* <[www.canada.ca/en/transport-canada/news/2022/11](http://www.canada.ca/en/transport-canada/news/2022/11)>.

<sup>14</sup> *Ibid.*

<sup>15</sup> Paul Blomerus, "Decarbonizing Marine Shipping: Clean Fuels for a Greener Future?" (14 February 2022), online: *ClearSeas* <[www.clearseas.org/en/blog/decarbonizing-marine-shipping](http://www.clearseas.org/en/blog/decarbonizing-marine-shipping)>.

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- <sup>16</sup> “Investigating Liquefied Natural Gas as a Marine Fuel for Canada’s Arctic”, a condensed version of a report submitted to Transport Canada by Canadian Natural Gas Vehicle Alliance, VARD Marine, and Clear Seas: Canadian Marine Liquefied Natural Gas (LNG) Supply Chain Project – Arctic, online: *Clear Seas* < [https://clearseas.org/en/research\\_project/investigating-liquefied-natural-gas-as-a-marine-fuel-for-canadas-arctic/](https://clearseas.org/en/research_project/investigating-liquefied-natural-gas-as-a-marine-fuel-for-canadas-arctic/)>.
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- <sup>19</sup> “IMO 2020 – Cutting Sulphur Oxide Emissions”, *supra* note 5.
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- <sup>23</sup> “The outcome of COP27”, *supra* note 21.
- <sup>24</sup> “Policy Brief”, *supra* note 17.