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## SUSTAINABILITY AND GREENER TECHNOLOGIES: A PROTECTION AND INDEMNITY CLUB'S PERSPECTIVE

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# Sustainability and Greener Technologies: A Protection and Indemnity Club's Perspective

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## I. INTRODUCTION

One of the most significant challenges of our lifetime is to eliminate greenhouse gas ("GHG") emissions in the production and consumption of energy. Through the Paris Agreement, the international community set the goal of limiting a peak increase in global temperature to 1.5 degrees Celsius, reducing GHG emissions by forty-five percent by 2030, and achieving net zero emissions by 2050.[1] The shipping industry accounts for approximately three percent of worldwide GHG emissions whereas the general transportation sector represents nineteen percent of world GHG emission (twenty-two percent for agriculture, thirty percent from commercial and residential, and twenty-four percent from industrial use).[2] Despite the maritime sector's relatively small contribution to global GHG emissions, the industry is forging ahead and embracing its role as key stakeholders to decarbonize through a range of efforts that include research and development; implementing environmental, social and

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1. Paris Agreement to the United Nations Framework Convention on Climate Change, Dec. 12, 2015, T.I.A.S. No. 16-1104.

2. *Global Greenhouse Gas Overview*, U.S. ENV'T PROT. AGENCY, https://www.epa.gov/ghgemissions/global-greenhouse-gas-overview (last visited Nov. 12, 2024).

governance policies; and providing financial security through investment and insurance for the industry.[3]

The decarbonization effort is a key component in a wider effort to provide a sustainable and greener future. The International Group of Protection and Indemnity (P&I) Clubs (hereinafter referred to as the "Group") is comprised of twelve not-for-profit mutual insurance associations of which the American Club is a member.[4] The Group clubs' primary responsibility is to provide third party insurance for liabilities that arise from the operations of vessels in the global commercial maritime sector. Simply stated, the clubs provide financial security to shipowners and operators for their liabilities. Collectively, the Group provides an enhanced level of security by sharing and reinsuring large claims of up to US$ 3 billion (US$ 1 billion for oil spills) per shipping casualty.[5]

All Group clubs provide a common set of services that reflect sustainability initiatives in claims handling for—in part—damages to the marine environment and in support for injuries and illnesses sustained by seafarers.[6] In addition to that, each individual Group club has its own sustainability initiatives to meet the unique needs of its individual membership and to fall within the United Nations Sustainable Development Goal framework.[7]

## II. BACKGROUND

Decarbonization is the most time-sensitive and critical climate change related concern we now face, and it is part of the greater consideration in the future of global sustainability. Sustainability is

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3. *EPA's Role in the International Maritime Organization (IMO)*, U.S. ENV'T PROT. AGENCY, https://www.epa.gov/international-cooperation/epas-role-international-maritime-organization-imo (last visited Nov. 12, 2024).

4. *Full List of Principal and Affiliated Associations*, INT'L GROUP OF P&I CLUBS, https://www.igpandi.org/group-clubs/ (last visited Oct. 21, 2024).

5. *See Japan P&I Club and International Group of P&I Clubs*, JAPAN P&I CLUB, https://www.piclub.or.jp/en/about/ig#:~:text=Reinsurance%20for%20oil%20pollution%20claims,passengers%20and%20seafarers%20claims%20combined (last visited Nov. 13, 2024); *IG of P&I Associations*, THE AM. CLUB, https://www.american-club.com/page/international-group-of-pi-associations#:~:text=The%20Pool%20provides%20a%20mechanism%20for%20sharing,million%20up%20to%2C%20approximately%20US$%208%20billion.&text=The%20Group%20clubs%20arrange%20a%20common%20market,(US%20$1%20billion%20for%20oil%20pollution%20claims) (last visited Nov. 13, 2024).

6. INTERNATIONAL GROUP OF P&I CLUBS, SUSTAINABILITY REPORT: SUPPORTING A SUSTAINABLE FUTURE IN THE MARITIME INDUSTRY 2022 2 (2022).

7. *See* AM. P&I CLUB, SUSTAINABILITY REPORT 2021 (2021).

simply defined as: "meet[ing] the needs of the present without compromising the ability of future generations to meet their own needs."[8]

To establish and maintain a sustainable present and future requires taking into account the three main interdependent component factors: (1) social, (2) economic, and (3) environmental. Furthermore, each component requires fair and effective governance to ensure transparency, prevent corruption, and promote efficiency. It is the goal of Club management to balance these complex and, sometimes, conflicting priorities.

The social sustainability component encompasses a wide range of human element related factors, including socio-economic opportunity, education and training, prevention of poverty, discrimination or social exclusion, fair access to resources, and not being exposed to social insecurity or conflict.[9] From a maritime perspective, for example, this entails ensuring modern seafarers and shoreside maritime support staff are well-trained and educated to meet the challenges of evolving technologies for managing and handling alternative fuels.[10] Most Group clubs are engaged with shipowners, ship operators, and vessels' crews providing educational and training tools. An example of this can be found in the American Club's library of e-learning tools—including training for seafarers on all six annexes of the International Convention for the Prevention of Pollution From Ships (MARPOL Convention). E-learning tools like these are designed to provide accessible and transparent competency assessment and competency assurance tools for modern seafarers to train either in a classroom or an at-home environment.

The hard skills required for seafarers, as set forth in the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers,[11] are only part of what is needed for the modern seafarer. The training and educational challenges to meet the requirements of the modern and future seafarer and shore staff alike necessitate a transversal of skill sets between soft skills, digital competence, and a "green awareness." The soft skills include leadership, teamwork, problem

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8. U.N. BRUNDTLAND COMM'N, REPORT OF THE WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT: OUR COMMON FUTURE 6 (1987).

9. *See generally Sustainable Development Goals*, U.N., https://www.un.org/sustainable development/sustainable-development-goals/ (last visited Nov. 13, 2024).

10. *See generally* International Maritime Organization, Protocol of 1978 to the International Convention for the Prevention of Pollution From Ships, 1973, Feb. 17, 1978, 1340 U.N.T.S. 22484.

11. *See* International Maritime Organization, International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, July 7, 1978, 1361 U.N.T.S. 23001.

solving, and commercial proficiency.[12] Furthermore, they require a competency in digital skills including data capture, computer programming, and analysis.[13] The third skill set is an awareness of the importance of decarbonization and sustainability.[14] In summary, meeting the challenges of a sustainable and decarbonized future requires investment into the human element in order to master a necessarily exacting skillset.

Economic sustainability includes the financial stability of marine insurance players, including the American Club, to sustainably supply finance. From an insurer's perspective, sustainability is a term that encompasses a wide range of concepts. As marine insurers, protection and indemnity ("P&I"), hull and machinery ("H&M"), cargo, ports and terminals, loss of hire, etc., are critical to ensure the maritime industry remains viable and healthy. For example, the U.N. Environment Programme: Financial Incentive already incorporates the basic principles provided by P&I insurance to our shipowner/ship operator Members in the maritime sector.[15]

Environmental sustainability includes the development and production of alternative fuels that are efficient, safe for use, clean to produce, accessible, and affordable.

## III. How to Focus Limited Resources to Get the Most Bang for the Buck?

The American Club applies basic risk assessment fundamentals to consider all P&I-related risks in the determination of whether those risks require a detailed loss prevention focus. Those risks are viewed through a "P&I lens," meaning the American Club considers whether there are aspects of the risk that have relevant P&I-related concerns.

1. Risk identification. Consideration of maritime risks that lead directly and indirectly to P&I-related claims.

2. Risk assessment. What are the impacts of the claims that have been identified? This is considered from a financial perspective from the financial cost of claims as well as the social impacts of cost to human life and environmental damage. The indirect costs to society

12. *See id.*

13. *See id.*

14. *See id.*

15. *PSI Principles for Sustainable Insurance*, U.N. Env't Programme: Fin. Initiative, https://www.unepfi.org/psi/wp-content/uploads/2012/06/PSI-document.pdf (last visited Nov. 30, 2024).

and reputation are also considered; for example, consideration of the benefits and costs of supporting maritime sustainability and decarbonization regulation.

3. Control measures. What are the loss prevention and risk control measures that can be implemented to assist shipowner and ship operator members to prevent and mitigate their P&I-related risks?

As with other established and evolving P&I-related risks, decarbonization and sustainability-related risks are periodically cycled through this risk assessment process. As part of its risk assessment considerations, the American Club is aware of challenges faced in the energy transition process that include:

1. Accessibility to carbon-based transitional technologies and energy resources will be a factor, including the dependence upon those for societal viability and growth. Developing nations may rely more heavily upon such carbon-based energy sources, depending upon availability.

2. Energy security to drive societies will be a significant factor in cultural transitions including political stability and stable social governance.

3. Sustainability of the energy transition through significant improvements in lowering greenhouse gas emissions will require viable technologies.

These considerations will need to be affordable—and alternative energy sources available to wider society—to become a larger part of the environmental, social, and governance sustainability efforts.

From a practical perspective—through the "P&I lens"—there are concerns about alternative fuels as they relate to the safety exposure to humans, particularly seafarers, and the general risks of fire and explosion. Through the Club's risk assessment process, several "high potential" alternative fuels have been identified as having safety concerns including:

1. Methanol. This chemical is toxic if ingested or in direct contact with the skin. There is a potential for asphyxiation if leaked. It can also lead to blindness or death. It is known to be corrosive to metals, such as aluminum and titanium alloys, and is prone to low temperature ignition that is difficult to visually identify. Measures should be taken to prevent concentration build-up in tanks, pipes, and onboard spaces.

2. Ammonia. This chemical is highly toxic if ingested or if contact is made with the skin. It is also corrosive to a range of industrial materials and highly reactive with oxidizing gases. It is also flammable if vapor concentration builds up in tanks, pipes, and onboard spaces due to having a flammability range of between fifteen to twenty-seven percent concentration at ambient temperature.

3. Hydrogen. With a high flammability range that can lead to high-speed deflagration and detonation. The gas can build up in void spaces, tanks, and pipes. It is transported in cryogenic or pressurized tanks requiring boil-off gas control and has a potential for leaking into contained spaces. Hydrogen embrittlement of metals is also a risk which includes small particle diffusion into materials that can cause leakage.

4. Propane or butane. They are transitional fuel sources with low flashpoint and low auto-ignition temperature thresholds. Further, flammable mixtures accumulate in low spaces. Therefore, ignition sources should be well protected. Like hydrogen, cryogenic or pressurized tanks, including boil-off control and management of gas release, is required.

Furthermore, international mandatory instruments relating to the liability for pollution and corresponding compensation do not address the unique risks associated with these fuels, leaving potential legal challenges and insurance risk in the event of an accident or environmental incident.

As the industry's energy transition towards cleaner energy sources evolves, there is a pressing need for regulatory frameworks that establish limits of liability while ensuring environmental protection.

The path to decarbonization has other risks to consider. For example, as of March 1, 2024, the European Union Emissions Trading System (EU ETS) monitoring, reporting, and verification requirements took effect for cargo and passenger ships of 5,000 gross tons (GT) or more. Meaning, vessels of 5,000 GT and above that call at or depart from ports in the European Economic Area are now obligated to report data to the European Union's Monitoring Reporting and Verification System. The requirements will extend to cargo and offshore ships of 400 GT or more as of January 1, 2025.[16]

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16. Jacqueline Tan, *The EU's Emissions Trading Scheme Extended to Shipping*, UKP&I, (Feb. 28, 2024), https://www.ukpandi.com/news-and-resources/articles/2024/the-eu-s-emissions-trading-scheme-extended-to-

These requirements are relevant to companies that have assumed day-to-day operational responsibility for the ship from the registered owner, as set forth in the International Safety Management Code. As the holder of the Document of Compliance, these parties are responsible for reporting emissions.[17] Companies will be required to hold sufficient EU allowance credits for vessels under their control, and these companies must surrender the allowance credits to the administering authorities annually, beginning in September 2025.[18]

Registered owners and companies will be required to surrender the allowance credits. Charterers must pay for credits not sold at a fixed price. Air emissions are monitored, recorded, and verified in the following year. For example, a vessel could have been chartered for March 2024, after diligently monitoring and recording, and the verification deadline is April 1, 2025. Meanwhile, the charterer purchased the required allowance credits at a spot rate at the beginning of April 2024. Then, in April 2025, the verification of the vessel's monitored emissions is found to be at a cost that is ten percent higher than estimated at the end of the charter in March 2024. Furthermore, the price of the allowance credits increased by twenty-five percent as of April 2025.

This is just an example of the circumstances that can arise, leading to disputes that negatively affect the registered owner, company, and charterer alike.

Another risk may be that a charterer has disappeared, or a vessel has been sold, compounding difficulties in disputes and financial recovery by either party. There are also possible disputes which can be related to engine performance and fuel consumption of alternative fuels, charter party performance working within the conditions of the regulatory framework with stringent emission standards, and others.

## IV. GREEN SHIPPING CORRIDORS: A FAST TRACK ALONG THE LEARNING CURVE

The commitment to sustainability and decarbonization were exemplified by the establishment of a commitment to the development of green shipping corridors. At the twenty-sixth meeting of the United Nations Climate Change Conference (COP 26) in 2021, twenty-two nations signed the Clydebank Declaration in support of establishing at

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shipping/#:~:text=Cargo%20and%20passenger%20ships%20of,for%20emissions%20reported%20in%202024.

17. *Id.*

18. *Id.*

least six green shipping corridors by 2030. These corridors are meant to include participation of ports, shipowner operators, and other stakeholders to create carbon-neutral trade environments through cooperation, incentives, and information sharing.[19] It is an objective that lessons learned will lead to a smoother global energy transition.

The long-standing role of classification societies in the technology research and development landscape cannot be understated. The International Association of Classification Societies (IACS) has consultative status with the IMO. IACS remains the only non-governmental organization with observer status and aids in the development and application of technical rules embodied within IMO conventions.[20]

The American Club and other Group clubs similarly rely upon IACS as one of the key maritime industry bodies of technical expertise to ensure vessels are built and operated to high standards providing insurers with greater confidence as a key stakeholder partner in fulfilling safety, environmental protection, and sustainability goals.

As a result, policymaker collaboration with industry stakeholders such as IACS and the Group are necessary to develop robust regulatory mechanisms that promote the adoption of alternative fuels while safeguarding environmental and public interests.

## V. SUMMARY

The challenges along the road to sustainability and decarbonization are significant. Only through joint stakeholder cooperation will the key objectives be achieved. Social conflicts and varying needs of the global population will require environmental, social, and governance-focused solutions.

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19. *COP26: Clydebank Declaration for Green Shipping Corridors*, GOV.UK, https://www.gov.uk/government/publications/cop-26-clydebank-declaration-for-green-shipping-corridors/cop-26-clydebank-declaration-for-green-shipping-corridors (last visited Nov. 13, 2024).

20. *Technical Advisor to IMO*, INT'L ASS'N OF CLASSIFICATION SOC'Y, https://iacs.org.uk/relations/iacs-at-imo (last visited Nov. 13, 2024).