

# SHIPPING'S FAIR SHARE

by Baine P. Kerr

Baine P. Kerr is a Ph.D. candidate in public international law at the Utrecht University School of Law and has a J.D. from the University of California, Los Angeles School of Law.

---

## SUMMARY

---

In July 2023, the International Maritime Organization (IMO) resolved to reduce international shipping's greenhouse gas emissions to net zero "by or around, i.e., close to" 2050. There is a long-running debate about whether the sector should decarbonize and how it could do so in a way that is equitable for states and the shipping industry. This Article is the first to normatively define shipping's fair share of the overall climate mitigation burden using principles of international environmental law. It refers to the IMO's institutional rules and practice to identify relevant principles, evaluates emission reduction pathways based on the sector's technological potential, and determines that its fair share would be its highest possible ambition in light of its unique capacity to mitigate. The Article ties shipping's climate goals to a framework of international environmental law, and offers a structure to assess its ambition going forward.

---

In London last July, small island States, environmental groups, and some developed countries urgently demanded that the International Maritime Organization (IMO) adopt ambitious new goals for reducing the international shipping sector's climate pollution.<sup>1</sup> The IMO is a quasi-legislative United Nations agency charged with developing uniform and globally binding environmental rules for ships.<sup>2</sup> It has enacted a series of climate measures since 2011, including an initial greenhouse gas (GHG) reduction strategy in 2018 that called for reducing

emissions 50% below 2008 levels by 2050.<sup>3</sup> Since then, large shipping companies have committed to far deeper and faster reductions, raising hopes that the IMO would as well.<sup>4</sup>

After two weeks of negotiations, the IMO did so.<sup>5</sup> Its Secretary-General remarked that "we have a clear direction, a common vision, and ambitious targets to guide us to deliver what the world expects of us."<sup>6</sup> The IMO now aims to reach net-zero GHG emissions for shipping "by or around, i.e., close to, 2050."<sup>7</sup> It also enacted "indicative checkpoints" to reach that goal: reductions of "at least 20%, striving for 30% by 2030," and "at least 70%, striving for 80%, by 2040."<sup>8</sup> Despite the celebratory remarks, scientists believe that shipping needs to decarbonize more quickly to be compatible with limiting global warming to 1.5 degrees Celsius (°C).<sup>9</sup> It is also unclear whether the

---

*Author's Note: I carried out much of the preliminary research for this Article while visiting the Oxford University Faculty of Law during the 2022 Michaelmas term. I would like to thank the members of Oxford's Public International Law Research Group for their hospitality and insightful feedback as I developed the ideas presented here. I very much appreciate the helpful comments of Seline Trevisanut and Natalie Dobson on an earlier draft of this Article. Thanks are also due to the editorial staff of the Environmental Law Reporter for their work getting this piece ready for publication. Any errors are my own.*

1. See *The Wrong Side of History: Shaama Sandooyea's Address to MEPC 80*, CLEAN SHIPPING COAL (July 5, 2023), <https://cleanshipping.org/news/the-wrong-side-of-history-shaama-sandooyea-address-to-mepc-80/>; *infra* Part I. This Article concerns the law that applies to international shipping, and refers to "international shipping" and "shipping" interchangeably.
2. Convention on the Intergovernmental Maritime Consultative Organization, Mar. 6, 1948, 289 U.N.T.S. 3, as amended [hereinafter IMO Convention]. A consolidated version is contained in 1 IMO, BASIC DOCUMENTS 8-32 (2010 ed.); Craig Allen, *Revisiting the Thames Formula: The Evolving Role of the International Maritime Organization and Its Member States in Implementing the 1982 Law of the Sea Convention*, 10 SAN DIEGO INT'L L.J. 265, 271-90 (2009) (discussing the IMO's legal role and competence).

3. See IMO, *Adoption of the Initial IMO Strategy on the Reduction of Greenhouse Gases From Ships and Existing IMO Activity Related to Reducing GHG Emissions in the Shipping Sector*, IMO Doc. MEPC 304(72) (Apr. 13, 2018) [hereinafter IMO 2018 Strategy]. See generally Günther Handl, *Decarbonising the Shipping Industry: A Status Report*, 38 INT'L J. MARINE & COASTAL L. 1 (2023).
4. See World Shipping Council, *Delivering Net Zero by 2050: The Cornerstones of Effective IMO GHG Regulations*, <https://www.worldshipping.org/net-zero-2050> (last visited Mar. 6, 2024); *infra* Part I.
5. IMO Res. MEPC.377(80), IMO Doc. MEPC 80/WP.12, annex 1 (July 7, 2023) [hereinafter IMO 2023 Strategy].
6. See *Revised GHG Reduction Strategy for Global Shipping Adopted*, IMO (July 7, 2023), <https://www.imo.org/en/MediaCentre/PressBriefings/pages/Revised-GHG-reduction-strategy-for-global-shipping-adopted-.aspx>.
7. IMO 2023 Strategy, *supra* note 5, annex 1, at 6.
8. *Id.*
9. Simon Bullock et al., *The Urgent Case for Stronger Climate Targets for International Shipping*, 22 CLIMATE POL'Y 301, 301 (2022); JEAN-MARC BONELLO ET AL., SCIENCE BASED TARGETS, SCIENCE BASED TARGET SETTING FOR THE MARITIME SECTOR VERSION 1.1, at 9 (2023), <https://sciencebasedtargets.org/resources/files/SBTi-Maritime-Guidance.pdf> ("For maritime transport emissions, a long-term science-based target means reducing emissions to a 96%

IMO's goals will be met: current measures will not reduce emissions,<sup>10</sup> and a market-based mechanism for shipping and a clean fuel standard will not be implemented until 2027 at the earliest.<sup>11</sup>

Within the IMO, there is a long-running debate about whether and how much shipping's emissions should be reduced, and whether there should be differentiation between developed and developing States.<sup>12</sup> Underlying this debate are notions of fairness: what is fair for various actors within the maritime regime—States and private actors such as shipping companies—and what is fair for shipping as a sector when compared to other sectors and States.<sup>13</sup> All sides agree that shipping should contribute its “fair share” toward achieving the Paris Agreement's global warming limitation goals, but there is no common understanding of what that means.<sup>14</sup>

In this Article, I normatively define shipping's fair share and apply it to the IMO's newly enacted climate goals. Scholars and nongovernmental organizations such as Climate Action Tracker understand “fair share” to mean a “share of the effort for mitigating climate change that is in accordance with the equitable principles of international environmental law.”<sup>15</sup> Those principles include harm prevention, precaution, sustainable development, special circumstances, intergenerational and intragenerational equity, and principles unique to the climate regime such as common-but-differentiated responsibilities and respective capacities (CBDR-RC) and highest possible ambition, as well as human rights principles.<sup>16</sup> Principles applying to States' fair shares can come from customary international law, treaties, or domestic law.<sup>17</sup>

Fair shares are legally salient. Under the Paris Agreement, States determine for themselves how much and with what measures they will reduce GHG emissions through

“nationally determined contributions” (NDCs) toward the collective goal of limiting global warming “to well below 2 degrees,” and “pursuing efforts” to limit warming to 1.5 degrees.<sup>18</sup> The Paris Agreement's 2018 Rulebook states that NDCs should provide narrative justifications for their levels of ambition and fairness,<sup>19</sup> and references to equity and other principles of international law, in particular the CBDR-RC principle, are made throughout the Agreement.<sup>20</sup> The CBDR-RC principle holds that all States must address climate change, but each State's responsibility differs based on historic and current responsibility for the problem and capacity to address it.<sup>21</sup>

Qualitative and quantitative assessments of fair shares thus provide a basis to normatively evaluate States' NDCs.<sup>22</sup> Fair shares can be cited in diplomatic fora to argue a State should be doing more; they therefore are an integral aspect of the Paris Agreement's collective action logic.<sup>23</sup> Moreover, the fairness of States' mitigation efforts has served as a legal benchmark to assess climate commitments by Dutch and German courts, and in a case recently decided by the European Court of Human Rights.<sup>24</sup> Thus, although legal principles are open-textured and not uniformly applied, they can and do give a concrete basis to evaluate States' mitigation commitments in the context of climate obligations.

So far, these commitments have not included international shipping, except for those made by European Union

residual level in line with 1.5°C scenarios by no later than 2040.”) When referring to temperature, this Article uses Celsius rather than Fahrenheit.

10. IMO, *FOURTH IMO GREENHOUSE GAS STUDY 2020*, at 26 fig.26 (2021), <https://wwwcdn.imo.org/localresources/en/OurWork/Environment/Documents/Fourth%20IMO%20GHG%20Study%202020%20-%20Full%20report%20and%20annexes.pdf>.
11. IMO 2023 Strategy, *supra* note 5, at 8, 11.
12. See *infra* Part I.
13. See, e.g., IMO, *Moving Forward on “Fair Share” Discussions*, at 2, IMO Doc. MEPC 70/7/11 (Sept. 9, 2016) [hereinafter IMO Doc. MEPC 70/7/11] (fair share should be determined based on limiting global warming to 1.5 degrees); IMO, *Development of a Road Map to Determine a Possible IMO Fair Share Contribution*, at 2, IMO Doc. MEPC 70/7/8 (Aug. 8, 2016) [hereinafter IMO Doc. MEPC 70/7/8] (shipping industry fully agrees “that IMO should determine a possible fair share contribution for the international shipping sector,” taking into account that shipping “is already, by far, the most energy efficient form of commercial transport”).
14. See *infra* Part I; IMO, *Report to the Marine Environmental Protection Committee on Its Seventieth Session*, at 48, IMO Doc. MEPC 70/18 (Nov. 11, 2016); see U.N. Framework Convention on Climate Change Conference of the Parties, *Adoption of the Paris Agreement*, art. 2, U.N. Doc. FCCC/CP/2015/10/Add.1 (Jan. 29, 2016) [hereinafter Paris Agreement] (global warming limitation goals).
15. Lavanya Rajamani et al., *National Fair Shares in Reducing Greenhouse Gas Emissions Within the Principled Framework of International Environmental Law*, 21 *CLIMATE POL'Y* 983, 984 (2021). See Climate Action Tracker, *Fair Share*, <https://climateactiontracker.org/methodology/cat-rating-methodology/fair-share/> (last visited Mar. 6, 2024).
16. Rajamani et al., *supra* note 15, at 986.
17. *Id.* at 988.

18. Paris Agreement, *supra* note 14, arts. 2, 4.

19. United Nations Framework Convention on Climate Change (UNFCCC), *Report of the Conference of the Parties Serving as the Meeting of the Parties to the Paris Agreement on the Third Part of Its First Session, Held in Katowice From 2 to 15 December 2018*, at 7, 11, U.N. Doc. FCCC/PA/CMA/2018/3/Add.1 (Mar. 19, 2019). See also Lavanya Rajamani & Daniel Bodansky, *The Paris Rulebook: Balancing International Prescriptiveness With National Discretion*, 68 *INT'L & COMPAR. L.Q.* 1025, 1031 (2019).

20. Paris Agreement, *supra* note 14, preambular recital, arts. 2(2), 4(1).

21. See generally SUMUDU ATAPATTU, *EMERGING PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW* 379 (2007) (discussing origin and meaning of the CBDR-RC principle); Christina Voigt & Felipe Ferreira, “Dynamic Differentiation”: *The Principles of CBDR-RC, Progression and Highest Possible Ambition in the Paris Agreement*, 5 *TRANSN'T'L ENV'T L.* 285 (2016) (explaining CBDR-RC principle as expressed in the Paris Agreement).

22. Rajamani et al., *supra* note 15, at 984. See generally Gaurav Ganti et al., *Fair National Greenhouse Gas Reduction Targets Under Multiple Equity Perspectives—A Synthesis Framework* (preprint 2021), [https://www.researchgate.net/publication/351596561\\_Fair\\_National\\_Greenhouse\\_Gas\\_Reduction\\_Targets\\_Under\\_Multiple\\_Equity\\_Perspectives\\_-\\_A\\_Synthesis\\_Framework](https://www.researchgate.net/publication/351596561_Fair_National_Greenhouse_Gas_Reduction_Targets_Under_Multiple_Equity_Perspectives_-_A_Synthesis_Framework); Christian Holtz et al., *Fairly Sharing 1.5: National Fair Shares of a 1.5°C-Compliant Global Mitigation Effort*, 18 *INT'L ENV'T AGREEMENTS: POL. L. & ECON.* 117 (2018); Harald Winkler, *Putting Equity Into Practice in the Global Stocktake Under the Paris Agreement*, 20 *CLIMATE POL'Y* 124 (2018); Niklas Höhne et al., *Regional GHG Reduction Targets Based on Effort Sharing: A Comparison of Studies*, 14 *CLIMATE POL'Y* 122 (2014). This Article offers a qualitative description of shipping's fair share rather than a numeric fair share range.

23. See Alexander Zahar, *Collective Obligation and Individual Ambition in the Paris Agreement*, 9 *TRANSNAT'L ENV'T L.* 165, 187 (2019) (“In the collective logic of the Paris Agreement, a state must set its mitigation ambition so that it is a fair contribution, compared with the effort of other states . . .”).

24. Rajamani et al., *supra* note 15, at 984; Gerry Liston, *Enhancing the Efficacy of Climate Change Litigation*, 9 *CAMBRIDGE INT'L L.J.* 241, 242 (2020) (discussing H.R. 20 december 2019, 19/00135 (Engels) (State of the Netherlands (Ministry of Economic Affairs and Climate Policy)/Stichting Urgenda (Neth.)); Case of Verein Klimasenioreninnen Schweiz and Others v. Switzerland, App. No. 53600/20, ¶¶ 571, 573-74 (Apr. 9, 2024), <https://hudoc.echr.coe.int/eng?i=001-233206> (holding that Switzerland must establish a national carbon budget, and could do so by taking the CBDR principle into account)..

Member States.<sup>25</sup> For various reasons, emissions from transport beyond national territories (i.e., over and above the high seas) are not reported in national totals through the United Nations Framework Convention on Climate Change (UNFCCC) or the Paris Agreement.<sup>26</sup> Shipping serves countries at all levels of development and capacity, which has frustrated agreement on whether and how the CBDR-RC principle—a bedrock of the climate regime—applies.<sup>27</sup> Because of that incompatibility, scholars have remarked that determining shipping’s fair share and allocating it to States has “thus far proven challenging.”<sup>28</sup> The literature that has examined fairness or equity for shipping has looked at whether measures within the sector are fair for various States, rather than evaluating shipping’s share of the mitigation burden in relation to other sectors and States.<sup>29</sup>

This Article adopts a different lens. It takes a sectoral approach to determine shipping’s overall fair share based on legal principles, rather than try to allocate or distribute its climate burden to individual countries. It thus complements quantitative research that forecasts shipping’s emissions, suggests feasible pathways for reductions, and evaluates the sector’s emissions and GHG reduction pathways alongside national commitments and actions.<sup>30</sup> To identify the principles that apply to shipping’s fair share and assess their legal significance, I rely on the IMO’s institutional rules—in other words, its constituent instrument,

“decisions, resolutions and other acts,” and the organization’s “established practice.”<sup>31</sup>

The principles that apply to shipping’s fair share thus originate from the organization’s internal legal order.<sup>32</sup> Yet, as will be discussed below, they function as “multisourced equivalent norms” (MSENs) because the same or similar principles apply to States’ fair shares despite originating from different sources of international law.<sup>33</sup> Consequently, aspects of the normative content of these principles can be “borrowed” from the climate regime to determine shipping’s fair share.<sup>34</sup>

There are legal benefits to the perspective I take here. The IMO 2023 Strategy (the Strategy) commits the IMO to action “consistent with the long-term temperature goal set out in Article 2 of the Paris Agreement.”<sup>35</sup> As a resolution of a plenary body of the IMO, the Strategy legally binds the organization.<sup>36</sup> By defining shipping’s fair share, this Article seeks to flesh out what that commitment to the Paris Agreement’s temperature goals means, and to give a benchmark to measure whether the IMO is complying with it.

Moreover, the application of equitable principles to the IMO’s levels of ambition for shipping furthers legal coherence.<sup>37</sup> The IMO’s internal law is unified and clarified if the organization’s policies align with their guiding principles and with the discourse about fairness within the IMO.<sup>38</sup> Accepting that these principles operate as MSENs, their application to the IMO’s fair share shows how international law is not fragmented, but instead points in the same or similar directions for States and international shipping.<sup>39</sup>

25. See Baine P. Kerr, *All Necessary Measures: Climate Law for International Shipping*, VA. J. INT’L L. 1-2, 17-18 (forthcoming), <https://ssrn.com/abstract=4549961> (discussing the European Union’s climate measures); Manolis Kotzampasakis, *Intercontinental Shipping in the European Union Emissions Trading System: A “Fifty-Fifty” Alignment With the Law of the Sea and International Climate Law?*, 32 RECIEL 29, 33 (2022).

26. See UNFCCC, May 9, 1992, 1771 U.N.T.S. 107, S. TREATY DOC NO. 102-38; UNFCCC, *Report of the Conference of the Parties Serving as the Meeting of the Parties to the Paris Agreement on the Third Part of Its First Session, Held in Katowice From 2 to 15 December 2018*, at 23, 27, U.N. Doc. FCCC/PA/CMA/2018/3/Add.2 (Mar. 19, 2019). See generally Ellen Hey, *Regime Interaction and Common Interests in Regulating Human Activities in Areas Beyond National Jurisdiction*, in REGIME INTERACTION IN OCEAN GOVERNANCE: PROBLEMS, THEORIES, AND METHODS 85, 93-98 (Seline Trevisanut et al. eds., Brill 2020); HARRO VAN ASSELT, REGIME INTERACTIONS IN GLOBAL CLIMATE GOVERNANCE (2014); Sebastian Oberthür, *Institutional Interaction to Address Greenhouse Gas Emissions From International Transport: ICAO, IMO, and the Kyoto Protocol*, 3 CLIMATE POL’Y 193 (2003).

27. Sophia Kopela, *Climate Change, Regime Interaction, and the Principle of Common but Differentiated Responsibility: The Experience of the International Maritime Organization*, 24 Y.B. INT’L ENV’T L. 70, 80 (2014). See *infra* Part I.

28. Rajamani et al., *supra* note 15, at 998.

29. See ALDO CHIRCOP ET AL., CENTRE FOR INTERNATIONAL GOVERNANCE INNOVATION, SHIPPING AND CLIMATE CHANGE: INTERNATIONAL LAW AND POLICY CONSIDERATIONS 69 (2018), <https://ssrn.com/abstract=3113274>; Meinhard Doelle & Aldo Chircop, *Decarbonizing International Shipping: An Appraisal of the IMO’s Initial Strategy*, 28 RECIEL 268 (2018); Aldo Chircop, *The International Maritime Law Response to Climate Change: The Quest for the Shipping Industry’s “Fair Share” of GHG Emissions Reduction*, Presentation at the International Conference on the Law of the Sea and Emerging Issues (Nov. 10-11, 2016), [https://digitalcommons.schulichlaw.dal.ca/scholarly\\_works/7671](https://digitalcommons.schulichlaw.dal.ca/scholarly_works/7671); Yubing Shi, *The Implications of the Paris Agreement for the Regulation of Greenhouse Gas Emissions From International Shipping*, 32 OCEAN Y.B. 528, 542 (2018) (fair share should be defined by the IMO and connected to Paris Agreement goals).

30. See sources cited *supra* note 9.

31. See International Law Commission, *Draft Articles on the Responsibility of International Organizations*, art. 2, 2011 Y.B. INT’L L. COMM’N, U.N. Doc. A/66/10 [hereinafter DARIO].

32. The literature thus far has considered shipping’s fair share but not using the principles-based methodology I apply here. See sources cited *supra* note 29.

33. Tomer Broude & Yuval Shany, *The International Law and Policy of Multi-Sourced Equivalent Norms*, in MULTI-SOURCED EQUIVALENT NORMS IN INTERNATIONAL LAW 1, 5 (Tomer Broude & Yuval Shany eds., Hart 2011).

34. Benedikt Pirker, *Interpreting Multi-Sourced Equivalent Norms: Judicial Borrowing in International Courts*, in MULTI-SOURCED EQUIVALENT NORMS IN INTERNATIONAL LAW, *supra* note 33, at 95 (“MSENs that are substantially equivalent in wording, although established by different instruments or procedures, eases the transfer of legal reasoning from one treaty regime to the other (even if they are not necessarily binding on the same parties).”).

35. IMO 2023 Strategy, *supra* note 5, at 6-7.

36. See DARIO, *supra* note 31, art. 2. It could potentially also qualify as a unilateral declaration. Baine P. Kerr, *Bridging the Climate and Maritime Regimes: The IMO’s 2018 GHG Strategy as an Erga Omnes Obligation*, 11 CLIMATE L. 118, 122-23 (2021).

37. See Yannick Radi, *Coherence*, in CONCEPTS FOR INTERNATIONAL LAW: CONTRIBUTIONS TO DISCIPLINARY THOUGHT 105 (Jean d’Aspremont & Sahib Singh eds., Elgar 2019); AMALIA AMAYA, *THE TAPESTRY OF REASON: AN INQUIRY INTO THE NATURE OF COHERENCE AND ITS ROLE IN LEGAL ARGUMENT* 13-21 (2015) (describing coherence as a normative value). See generally Jean d’Aspremont, *The Chivalric Pursuit of Coherence in International Law*, 37 LEIDEN J. INT’L L. 191 (2024); James Devaney, *Leaning From the Steep Slope: On Coherence in Response to Professor Jean d’Aspremont*, 37 LEIDEN J. INT’L L. 199 (2024).

38. See Radi, *supra* note 37, at 109-12 (discussing the value of coherence in terms of legal certainty).

39. Broude & Shany, *supra* note 33, at 9; Robert Howse, *Multi-Sourced Equivalent Norms: Concluding Thoughts*, in MULTI-SOURCED EQUIVALENT NORMS IN INTERNATIONAL LAW, *supra* note 33, at 322 (discussing MSENs as promoting the integration and coherence of international law).

In Part I, I discuss how the IMO's Members decided on its levels of ambition for GHG emission reductions, and how that discussion was interwoven with the concept of fairness and equity. Part II establishes a normative framework for evaluating the fairness of the IMO's levels of ambition, by identifying the principles that apply and explaining the legal relationship between them and the IMO's climate goals.

Part III evaluates scientific forecasts on emission-reduction pathways for shipping and the carbon budget in light of the identified principles, and the fairness discussion at the IMO. It thus considers whether shipping's climate ambition is indeed fair, and the legal parameters for its fair share going forward. I argue that a principled fair share for shipping would represent the sector's highest possible ambition in light of its unique capacity to mitigate. Part IV concludes by reflecting on the implications of its findings for the IMO and international law generally.

## I. How the IMO Determined Shipping's Climate Goals

The IMO's role as the global regulator of shipping's GHG emissions has been contested by the Parties to the UNFCCC and the organization's Member States, in particular those in the European Union.<sup>40</sup> For decades, the rhetoric of fairness has been intertwined with discussions at the IMO about levels of ambition for shipping's GHG reductions. Yubing Shi submits that "the 'fair share' discussion within the IMO proves that the IMO is a legitimate standard-setter in the field."<sup>41</sup> This part gives an overview of those discussions and how the IMO arrived at its current goals leading up to the adoption of the Strategy in 2023.

My methodology here involved searching for and reviewing Member State, intergovernmental observer, and nongovernmental observer comments to the IMO's Marine Environmental Protection Committee (MEPC) since 2003 that related to a quantified metric for reducing GHGs from shipping, in particular comments on baselines for emissions and levels of ambition for reductions.<sup>42</sup> I also analyzed the MEPC committee reports that summarized its proceedings, and the documents submitted to the MEPC's Intersessional Working Group on GHGs. Because coalitions of States, as well as groups representing aspects of the shipping industry, often submit joint comments, for readability I only refer in the text to the first author listed.

These comments individually do not carry legal weight as IMO "rules," and interpreting them as such would be inconsistent with the IMO's high degree of institutional autonomy and quasi-legislative character.<sup>43</sup> Nevertheless,

the agreement about the importance of fairness for shipping's levels of ambition reinforces the relevance of the principled definition of shipping's fair share in Parts II and III below.

Following the IMO Assembly in 2003, the MEPC began considering whether and how to establish a baseline for shipping's GHG emissions, as well as what would be fair reductions for the sector.<sup>44</sup> Proposals included a methodology based on marginal costs of measures that sought to make reductions effective and fair in balancing the reduction potential and costs for the maritime industry, and thereby ensuring shipping was not "unfairly" burdened compared to other industries.<sup>45</sup> South Africa stated that shipping should "contribute fairly to reducing GHG emissions," and India said that any IMO framework on GHG emission reductions from shipping should "contribute fairly to the ultimate objective of the UNFCCC."<sup>46</sup>

The World Shipping Council, which is the primary group representing liner carriers, argued that because shipping is the most energy-efficient way to transport goods, it should be encouraged, not treated more severely than other forms of transportation. It stated that the transport sector's emissions as a whole should be considered rather than evaluating shipping's emissions in isolation.<sup>47</sup> The International Union for Conservation of Nature proposed setting a price for shipping's GHG emissions that would be linked to the carbon price set for other sectors.<sup>48</sup> It argued its approach would ensure that reductions from shipping were proportional to other sectors, would allow for differentiation among States, and would encourage energy efficiency improvements consistent with shipping's decarbonization potential.<sup>49</sup>

Although the IMO approved energy efficiency measures for shipping in 2011 and GHG data collection rules in

topher C. Joyner eds., Cambridge Univ. Press 1995) (discussing the IMO's legal character).

44. See IMO Assemb. Res. A.963(23), IMO Policies and Practices Related to the Reduction of GHG Emissions From Ships (Dec. 5, 2003) [hereinafter IMO Res. A.963(23)]; IMO, *Report of the Working Group on Air Pollution (Part 2)*, at 2-3, IMO Doc. MEPC 55/4 (Apr. 18, 2006); IMO, *Report of the Marine Environment Protection Committee on Its Fifty-Fifth Session*, IMO Doc. MEPC 55/23 (Oct. 16, 2006).

45. IMO, *Report of the Marine Environment Protection Committee on Its Sixtieth Session*, at 42, IMO Doc. MEPC 60/22 (May 11, 2010); IMO, *A Methodology for Establishing an Emission Cap in an ETS for International Shipping*, at 1-2, IMO Doc. MEPC 59/4/24 (May 8, 2009); IMO, *Alternative Emission Caps for Shipping in 2020 and 2030*, at 2, IMO Doc. MEPC 60/4/23 (Jan. 15, 2010).

46. IMO, *A Hybrid Market-Based Instrument for Shipping to Contribute Fairly to Climate Change Mitigation and Adaptation*, at 3, IMO Doc. MEPC 57/4/27 (Feb. 25, 2008); IMO, *Report of the Marine Environment Protection Committee on Its Fifty-Seventh Session*, at 48, IMO Doc. MEPC 57/21 (July 29, 2008).

47. IMO, *Emission "Caps" and Reduction Targets*, at 2, IMO Doc. MEPC 60/4/28 (Jan. 21, 2010). The shipping industry extensively participates in IMO negotiations, and "are accepted as legitimate participants partly based on their historical structural importance" to world trade. Christian Hendriksen, *Navigating Norms and Invisible Rules: Explaining the Case of Business Influence in International Shipping Regulation*, 24 Bus. & Pol. 79, 88 (2022).

48. IMO, *A Rebate Mechanism for a Market-Based Instrument for International Shipping*, at 6, IMO Doc. MEPC 60/4/55 (Feb. 10, 2010).

49. *Id.*

40. See Oberthür, *supra* note 26, at 199-200; Natalie Dobson, *Competing Climate Change Responses: Reflections on EU Unilateral Regulation of International Transport Emissions in Light of Multilateral Developments*, 67 NETH. INT'L L. REV. 183, 185 (2020).

41. Shi, *supra* note 29, at 537-38 (discussing the IMO's role as the global regulator of international shipping's GHG emissions).

42. The MEPC's institutional role is discussed *infra* Section II.A.

43. DARIO, *supra* note 31, art 2. See Frederic L. Kirgis Jr., *Shipping*, in 2 UNITED NATIONS LEGAL ORDER 715, 718-23 (Oscar Schachter & Chris-

2016,<sup>50</sup> it deferred setting a reduction target for shipping for many years.<sup>51</sup> In 2015, the Marshall Islands urged the MEPC to do so, and stated that the target needed to be consistent with limiting global warming to 1.5 degrees.<sup>52</sup> In light of the UNFCCC Conference of Parties in Paris later that year, the MEPC agreed to postpone a reduction target and “acknowledged the need to move forward cautiously.”<sup>53</sup>

After the Paris Agreement was adopted, the IMO considered several proposals on shipping’s GHG emission-reduction goals.<sup>54</sup> One industry group stated that, in light of the Paris Agreement, it supported the Marshall Islands’ suggestion that the IMO establish reduction commitments for the shipping sector, but it did not suggest any methodology for arriving at a reduction target.<sup>55</sup>

Other industry groups proposed that a quantified target should be considered within the context of “the objectives to be achieved more broadly in the global economy,” and the need for proportionality with other transport modes.<sup>56</sup> At the discussion, the UNFCCC representative stated that both the shipping and aviation sectors “have to contribute their fair share to global efforts towards the agreed temperature goal by contributing to the global peaking of greenhouse gas emissions as soon as possible, rapidly reducing them thereafter and moving towards global low-emission and climate-neutral development.”<sup>57</sup>

Many States argued that the Paris Agreement temperature goals should guide the sector’s emission reductions. Norway urged the IMO to adopt a long-term strategy for GHG emissions from shipping that focused on various emission scenarios in the context of the Paris Agreement’s temperature goals and what shipping could accomplish by mid-century.<sup>58</sup> Canada agreed.<sup>59</sup> European countries and some small island developing States (SIDS) noted that shipping should do its “fair share” toward mitigating climate change and set forth how to identify what a fair share should be.<sup>60</sup> They named several approaches without endorsing any particular methodology. These included the economic effort to reduce GHG emissions in the sector;

the technical and operational GHG abatement potential; and a fair share similar in ambition to NDCs from a country or group of countries. Each approach would take into account the overall emissions reductions required to achieve the Paris Agreement’s objectives.<sup>61</sup>

These States also argued that “fairness” for shipping could be considered in terms of the capability of the shipping sector, by comparing shipping to other transport sectors, and by apportioning shipping a share of the carbon budget for the Agreement’s temperature goals using information derived from its historical share of emissions.<sup>62</sup> They noted that a target for reductions did not itself impose transport costs, although the measures implementing it could. They suggested that implementing measures should avoid disproportionately impacting developing or island States.<sup>63</sup>

A coalition of groups representing the shipping industry agreed that shipping should contribute a “fair share,” but argued that “great care” was needed because many UNFCCC Parties’ (intended) NDCs made clear that they were not able to commit to absolute carbon dioxide (CO<sub>2</sub>) reductions because of their legitimate desire to maintain sustainable development.<sup>64</sup> The coalition noted that shipping was the most energy-efficient mode of transportation, and that any fair share should be realistic and not stifle maritime transport.<sup>65</sup> Another industry group argued that international aviation’s approach of capping emissions at 2020 levels and offsetting further emissions growth should be considered for shipping.<sup>66</sup> Environmental groups did not articulate a fair share, but noted that the Paris Agreement’s temperature goal implies a fixed carbon budget, and argued for a numerical target for reductions that emphasized early action in order to provide a “smooth landing” for the shipping industry.<sup>67</sup>

The translation of the Paris Agreement goals into quantified emission-reduction targets was a point of contention. Denmark and a group of other countries submitted a report stating that because shipping services both developed and developing economies, a fair or egalitarian reduction level should be a hybrid between two quantified levels of reduction.<sup>68</sup> The report noted that shipping could assume a follower or leader role in relation to NDCs, where it either

50. IMO MEPC Res. 203(62) (July 15, 2011); IMO MEPC Res. 278(70) (Oct. 28, 2016).

51. IMO, *Report of the Marine Environment Protection Committee on Its Sixty-Eighth Session*, at 42, IMO Doc. MEPC 68/21 (June 26, 2015).

52. See IMO, *Setting a Reduction Target and Agreeing to Associated Measures for International Shipping*, at 2, IMO Doc. MEPC 68/5/1 (Mar. 27, 2015).

53. IMO, *supra* note 51, at 43-44.

54. IMO, *Report of the Marine Environment Protection Committee on Its Sixty-Ninth Session*, at 35-37, IMO Doc. MEPC 69/21 (June 16, 2016).

55. IMO, *Proposal to Develop an “Intended IMO Determined Contribution” on CO<sub>2</sub> Reduction for International Shipping*, at 1, IMO Doc. MEPC 69/7/1 (Feb. 17, 2016).

56. IMO, *Establishing a Process for Considering Shipping’s Appropriate Contribution to Reducing CO<sub>2</sub> Emissions*, at 2, IMO Doc. MEPC 69/7/4 (Mar. 4, 2016).

57. IMO, *Report of the Marine Environment Protection Committee on Its Sixty-Ninth Session, Addendum*, IMO Doc. MEPC 69/21/Add.1, annex 17, at 4 (May 17, 2016).

58. IMO, *Developing a Long-Term Strategy to Address Greenhouse Gas Emissions From Shipping*, at 3, IMO Doc. MEPC 70/7/5 (Aug. 26, 2016).

59. IMO, *Comments on Documents 70/7/3, 70/7/4, 70/7/5, and 70/7/6*, at 2-3, IMO Doc. MEPC 70/7/14 (Sept. 8, 2016).

60. IMO, *International Shipping’s Share in International Efforts to Limit the Rise of Global Average Temperature—Further Clarifications*, at 2, IMO Doc. MEPC 70/7/6 (Aug. 26, 2016).

61. *Id.* at 3-4.

62. IMO, *International Shipping’s Share in International Efforts to Limit the Rise of Global Average Temperature—Comments on Method and Transport Cost Considerations*, at 3, IMO Doc. MEPC 70/7/13 (Sept. 8, 2016).

63. *Id.* at 4; Paris Agreement, *supra* note 14, art. 4.

64. IMO Doc. MEPC 70/7/8, *supra* note 13, at 2; IMO, *Comments on Document 70/7/8 Development of a Road Map to Determine a Possible IMO Fair Share Contribution*, at 2, IMO Doc. MEPC 70/7/9 (Sept. 13, 2016); IMO, *Development of a Road Map to Determine a Possible IMO Fair Share Contribution*, at 2, IMO Doc. MEPC 70/7/12 (Sept. 8, 2016).

65. IMO Doc. MEPC 70/7/8, *supra* note 13, at 4-5.

66. IMO, *Considering the International Civil Aviation Organization’s (ICAO) Approach to GHG Reduction Within the Maritime Sector*, at 2-3, IMO Doc. MEPC 70/7/10 (Sept. 6, 2016).

67. IMO Doc. MEPC 70/7/11, *supra* note 13, at 3.

68. IMO, *A Scientific Study on Possible Reduction Targets and Their Associated Pathways*, at 58-59, IMO Doc. MEPC 71/INF.35 (May 8, 2017).

derived a fair share from existing commitments or established a longer term and more stringent ambition sooner.<sup>69</sup>

China, India, and Argentina agreed that the IMO's objective should be to hold global temperature increases to the Paris Agreement's levels, but strongly opposed setting an overall cap on shipping's emissions, even as an aspirational goal.<sup>70</sup> The Marshall Islands and Solomon Islands did not propose a concrete date for peaking of emissions or a rate for reductions, but reiterated that they should be as ambitious as possible based on a fair share of overall global effort to limit warming to 1.5 degrees.<sup>71</sup>

Difficulties with how to assess fairness in relation to other sectors and national efforts arose. Antigua and Barbuda, other SIDS, and several European States argued that shipping needed to be consistent with the overall global effort for reductions in that the sector's emissions need to start declining soon, and fall in the second half of the century toward zero.<sup>72</sup> They noted several scientific proposals on how to determine shipping's ambition in connection with the global reduction pathway, including that shipping should reduce emissions proportionate to its current share, proportionate to the efforts of other sectors, proportionate to the efforts of all or a set of countries, or more or less than the above based on whether it is easier, cheaper, more costly, or more difficult for the sector to achieve reductions. The latter approach presumed that any deviation by the sector would be balanced by other sectors or NDCs.<sup>73</sup>

A similar group of countries noted that GHG reduction measures' impacts on States could be considered in connection with those specific measures and should not impact the level of ambition that is set for the sector.<sup>74</sup> They proposed several strategies to mitigate any additional costs from GHG reduction measures.<sup>75</sup> Canada suggested that technical feasibility of decarbonization by 2050 should be considered when setting the level of ambition for reductions.<sup>76</sup> The shipping industry stated that the IMO should show to the wider global community that shipping is committed to reducing its GHG emissions, "matching the spirit and ambition of the Paris Agreement."<sup>77</sup> They proposed that the IMO establish "aspirational objectives" that set a

baseline year for the peaking of shipping's GHG emissions, but that these objectives should be nonbinding.<sup>78</sup>

In 2018, the IMO adopted an initial strategy for GHG reductions.<sup>79</sup> Several delegations from developing countries noted the "highly sensitive issue" on the level of ambition,<sup>80</sup> but the Strategy and its levels of ambitions were ultimately adopted, albeit not by consensus.<sup>81</sup> The Strategy set two different levels of ambition for reductions. It called for reducing the carbon intensity of ships 40% by 2030 and the sector's GHG emissions 50% by 2050 against the sector's 2008 levels.<sup>82</sup> The first was unrelated to increases in shipping volume, in that carbon intensity can decrease even as overall emissions increase.<sup>83</sup> Meinhard Doelle and Aldo Chircop explain that there is no indication that the IMO's 2018 reduction targets were "based on an objective assessment of what would be a fair contribution to the global effort, rather than on pragmatic and political considerations."<sup>84</sup>

Since 2018, a consensus has developed that shipping would reduce its emissions consistent with limiting global warming to 1.5 degrees, but States and stakeholders disagree about what that means. An association representing shipowners submitted that GHGs should be reduced to net zero by 2050.<sup>85</sup> India noted that 85% of the \$1.5 trillion investment required for decarbonization of shipping will involve land-based infrastructure, and argued those costs should be shouldered by developed countries consistent with the CBDR-RC principle. It also cited the polluter-pays principle to argue that more-polluting ship types should invest more in decarbonization projects.<sup>86</sup>

A coalition of developed countries and SIDS took the position that the Strategy needs to be revised such that 2050 is the phaseout date for GHG emissions from ships consistent with what is required to maintain a 1.5-degree warming pathway.<sup>87</sup> Other developing countries responded that all of the elements of the Strategy need to be updated,

69. *Id.* at 59 (finding that 33-gigaton budget for 2010-2100 would be fair under these principles).

70. IMO, *Proposal on the Development of a Comprehensive IMO Strategy on Reduction of GHG Emissions From Ships*, at 4-5, IMO Doc. MEPC 71/7 (Apr. 21, 2017); IMO, *Guiding Principles for the IMO Strategy on Reduction of GHG Emissions From Ships*, at 2-3, IMO Doc. MEPC 71/7/6 (May 5, 2017).

71. IMO, *The Need for a High Level of Ambition Within the Comprehensive Strategy on Reduction of GHG Emissions From Ships*, at 2, IMO Doc. MEPC 71/7/3 (May 5, 2017).

72. IMO, *The Level of Ambition of the Comprehensive IMO Strategy on Reduction of GHG Emissions From Ships*, at 4, IMO Doc. MEPC 71/7/8 (May 5, 2017).

73. *Id.* at 4-5.

74. IMO, *Impacts of GHG Reduction Measures on Transport Costs and on States*, at 2-3, IMO Doc. MEPC 71/7/9 (May 5, 2017).

75. *Id.*

76. IMO, *Proposal of Key Measures to Reduce GHG Emissions From Shipping*, at 3, IMO Doc. MEPC 71/7/10/Rev. 1 (May 12, 2017).

77. IMO, *Elements for Inclusion in the IMO Strategy*, at 1, IMO Doc. MEPC 71/7/12 (May 18, 2017).

78. *Id.* at 3.

79. IMO 2018 Strategy, *supra* note 3, at 4.

80. IMO, *Report of the Marine Environment Protection Committee on Its Seventy-Second Session*, IMO Doc. MEPC 72/17/Add.1, annex 16, at 7 (June 28, 2018) (statement by the Philippines), at 14 (statement by South Africa).

81. IMO, *Report of the Marine Environment Protection Committee on Its Seventy-Second Session*, at 43, IMO Doc. MEPC 72/17 (Aug. 30, 2018); Sophia Kopela, *Climate Change and the International Maritime Organization*, in RESEARCH HANDBOOK ON CLIMATE CHANGE, OCEANS, AND COASTS 134, 142 (Jan McDonald et al. eds., Elgar 2020).

82. IMO 2018 Strategy, *supra* note 3, at 4.

83. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2022: MITIGATION OF CLIMATE CHANGE, WORKING GROUP III CONTRIBUTION TO THE SIXTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 1695 (Priyadarshi R. Shukla et al. eds., 2022) [hereinafter IPCC WG III REPORT] (discussing whether reduction in carbon intensity is achievable using various fuel stocks); *id.* at 2444 (shipping sector will likely overachieve 2030 goal of 40% reduction in carbon intensity).

84. Doelle & Chircop, *supra* note 29, at 273.

85. IMO, *Revision of the IMO GHG Strategy*, at 2, IMO Doc. MEPC 78/7/2 (Mar. 10, 2022).

86. IMO, *Revision of the IMO GHG Strategy*, at 4-5, IMO Doc. MEPC 78/7/4 (Apr. 5, 2022).

87. IMO, *Comments on the Correspondence Group on Carbon Intensity Reduction*, IMO Doc. MEPC 78/7/15 (Apr. 11, 2022); IMO, *Revision of the IMO GHG Strategy on Reduction of GHG Emissions From Ships*, IMO Doc. MEPC 78/7/20 (Apr. 13, 2022).

not only the levels of ambition for reductions, but also funding, technology transfer, capacity-building, and measures designed to avoid negative impacts from the IMO's climate policies.<sup>88</sup>

In the lead-up to adoption of a revised GHG strategy in 2023, a group of European Union Member States and the European Commission cited a compilation of scientific studies to argue that limiting warming to 1.5 degrees required a 29% reduction in shipping's GHG emissions by 2030 and 83% by 2040 compared to 2008, with a 100% phaseout of GHG emissions by 2050 at the latest.<sup>89</sup> Citing a different study, Canada, the United Kingdom, and the United States argued that shipping's sectoral contributions to mitigating climate change fall far short of the Paris Agreement goals, and proposed that in addition to a 2050 phaseout, interim targets for reduction should be set at a 37% reduction by 2030 and a 96% reduction by 2040 against 2008 levels.<sup>90</sup>

The rhetoric of fairness was invoked by States pushing for more climate action. A group of African countries stated that action was needed to meet the 1.5-degree goal, and that a global regulation should be "just, fair and equitable taking into consideration, the peculiar needs of developing countries, in particular" SIDS and least developed countries (LDCs) "that are most climate vulnerable and are further expected to be impacted by climate change."<sup>91</sup> The Marshall Islands and other SIDS emphasized the importance of equity in the revised strategy, and stated that an "equitable transition fundamentally requires shipping reductions that ensure a temperature increase of 'no more than 1.5°C' with a clear timeline that includes intermediate targets."<sup>92</sup>

As explained next, equitable principles of international environmental law are embedded within the 2023 Strategy's text and the IMO's organizational practice that can be used to assess whether the IMO's climate goals are indeed fair.

## II. The Legal Principles for Shipping's Fair Share

In this part, I develop a normative structure to evaluate the fairness of the IMO's levels of ambition in three steps. First, I summarize the IMO's 2023 Strategy and discuss its status as an international legal act. I next identify the Strategy's equitable principles and explain how those are textually linked to the IMO's levels of ambition for GHG reductions. I then describe how certain of the principles set forth in the Strategy arise in the IMO's broader institutional legal framework as part of the organization's practice, and therefore carry particular normative weight.

Although these principles apply to the IMO because of its resolutions and organizational practice, as shown here, they also have an external meaning and operate as MSENs.<sup>93</sup> Their content can therefore be derived internally and externally, and they legally contextualize the IMO's actions. Consequently, the application of these principles to the IMO's levels of ambition for GHG reductions furthers the coherence of the IMO's internal law and international law generally.<sup>94</sup>

### A. The 2023 Strategy as a Legal Act

Unlike other resolutions that can be adopted by the MEPC, the 2023 Strategy does not have the force of law for the IMO's Member States.<sup>95</sup> But in enacting it, the IMO used mandatory terms, stating that the IMO "aims to phase" out GHG emissions "as a matter of urgency," the IMO is "committed" to reducing GHG emissions from shipping in order to contribute to the Paris Agreement's temperature goals, and would do so with certain measures over a specified period.<sup>96</sup> It therefore qualifies as an organizational "rule," the breach of which by the IMO would constitute an internationally wrongful act for the organization itself.<sup>97</sup>

The IMO's institutional structure and organizational practice support characterizing the 2023 Strategy as a legal document that carries normative weight.<sup>98</sup> The IMO Constitution created several plenary organs, including the IMO Assembly and the MEPC.<sup>99</sup> It charges the Assembly

88. IMO, *Comments on the Revision of the Initial IMO GHG Strategy*, at 203, IMO Doc. MEPC 78/7/26 (Apr. 27, 2022).

89. IMO, *Specification of the Levels of Ambition in the Revised IMO Strategy on Reduction of GHG Emissions From Ships*, IMO Doc. ISWG-GHG 15/2/2, annex 4 (May 12, 2023).

90. IMO, *Draft Text and Considerations for the Revision of the Initial IMO Strategy*, at 3-4, IMO Doc. ISWG-GHG 15/2/10 (May 12, 2023) (citing BONELLO ET AL., *supra* note 9). See also IMO, *Commenting on Document MEPC 78/7/14 on the Revision of the Initial IMO GHG Strategy*, at 4-5, IMO Doc. MEPC 78/7/24 (Apr. 22, 2022) (submission by India noting costs and investments needed for shipping's decarbonization).

91. IMO, *Considerations and Takeaways/Recommendations as a Follow Up to the Africa Green Shipping Conference*, at 1-2, IMO Doc. ISWG-GHG 15/2/3 (May 12, 2023). SIDS and LDCs are identified by the United Nations: currently, there are 39 SIDS, eight of which are LDCs. See United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries, and Small Island Developing States, *List of SIDS*, <https://www.un.org/ohrrls/content/list-sids> (last visited Mar. 6, 2024). Thirty-seven more countries are LDCs. See United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries, and Small Island Developing States, *List of LDCs*, <https://www.un.org/ohrrls/content/list-lDCs> (last visited Mar. 6, 2024).

92. IMO, *Defining an "Equitable Transition" and Related Terminology "Just," "Fair," and "Inclusive" to Delegations in the Choice of Wording for Use in the Revised Strategy*, at 3, IMO Doc. ISWG-GHG 14/2/5 (Feb. 3, 2023).

93. See Broude & Shany, *supra* note 33, at 5 (defining MSENs).

94. Howse, *supra* note 39, at 322; Christiane Ahlborn, *The Rules of International Organizations and the Law of International Responsibility*, 8 INT'L ORGS. L. REV. 397, 427-28 (2011); see PHILLIPA WEBB, INTERNATIONAL JUDICIAL INTEGRATION AND FRAGMENTATION 7-8 (2013) (coherence within international law is a desirable policy goal, especially over the long run); Richard Collins, *Modernist-Positivism and the Problem of Institutional Autonomy in International Law*, in INTERNATIONAL ORGANIZATIONS AND THE IDEA OF AUTONOMY 22, 34-35 (Richard Collins & Nigel G. White eds., Routledge 2011) (discussing reconciliation of institutional autonomy with international law's coherence).

95. See Kerr, *supra* note 25, at 13-14 (discussing the IMO's law making power); Aldo Chircop, *The IMO Initial Strategy for the Reduction of GHG Emissions From International Shipping: A Commentary*, 34 INT'L J. MARINE & COASTAL L. 482, 509 (2019) (arguing that the IMO's initial GHG strategy was a political rather than legal document).

96. IMO 2023 Strategy, *supra* note 5, at 2, 5-6.

97. DARIO, *supra* note 31, arts. 2, 10.

98. See generally Kerr, *supra* note 36 (discussing legal character of the IMO's 2018 GHG Strategy).

99. See IMO Convention, *supra* note 2, arts. 12, 38.

with “performing the functions of the organization,”<sup>100</sup> and the IMO’s website describes the Assembly as its “highest governing body.”<sup>101</sup> Article 38 of the IMO Constitution mandates that the MEPC consider “any matters within the scope of the Organization concerned with the prevention and control of marine pollution from ships.”<sup>102</sup>

The IMO Assembly specifically tasked the MEPC with considering the reduction of GHG emissions from shipping in 2003, 2009, 2017, and 2021.<sup>103</sup> The MEPC cited its mandate under Article 38 of the IMO Constitution in its resolution adopting the Strategy, and has reported its work on GHG reductions to the Assembly.<sup>104</sup> Thus, for decades, there has been a practice within the IMO of allocating responsibility for setting the organization’s climate policy to the MEPC.<sup>105</sup>

As Special Rapporteur Giorgio Gaja found, rules of international organizations, including their established practice, determine who can make a claim on their behalf.<sup>106</sup> And here, consistent with the IMO Constitution, the IMO Assembly allocated the organization’s competence to regulate GHG emissions from ships to the MEPC. Therefore, the MEPC acted for the organization when adopting the Strategy, and that document legally binds the IMO.<sup>107</sup>

## B. The Strategy’s Principles

Principles and rules can be textually identified and distinguished according to their source, form, or function.<sup>108</sup> Section 3 of the 2023 Strategy is captioned “Levels of Ambition, Indicative Checkpoints, and Guiding Principles,” with paragraph 3.3 articulating the levels of ambition and paragraph 3.5 identifying principles “guiding the

2023 IMO GHG Strategy.”<sup>109</sup> Thus, the applicable principles are clearly labeled as such.<sup>110</sup> They include:

- The need to consider “the impacts of measures on States, including developing countries, in particular LDCs and SIDS . . . and their specific emerging needs, as recognized in the Revised Strategic Plan for the Organization (resolution A.1149(32))”; and
- The “need for evidence-based decision-making balanced with the precautionary approach as set out in resolution MEPC 67(37).”<sup>111</sup>

In my view, the other principles named in paragraph 3.5 relate to the IMO’s implementation of its climate measures rather than its levels of ambition. They are the “non-discrimination,” “no more favourable treatment,” and “full and complete effect to mandatory measures” principles from the maritime legal regime, and the CBDR-RC principle from the climate regime.<sup>112</sup> There is a decades-long and well-documented scholarly and diplomatic debate about how to reconcile these seemingly opposed principles when designing maritime climate measures.<sup>113</sup> Because they are grounded in State conduct and obligations, these principles are not easily analogized to the perspective taken in this Article, which is viewing the IMO as an autonomous organization that is operating on the international legal plane on behalf of the shipping sector. Therefore, while certainly applicable to the measures the IMO adopts to reduce GHG emissions,<sup>114</sup> they are unrelated to the sector’s fair share of global climate mitigation efforts.

The Strategy refers to other equitable principles relevant to shipping’s fair share, in addition to special consideration for SIDS and LDCs and evidence-based decisionmaking balanced with the precautionary approach. These can be identified based on their form—in other words, “that they are characterized by a high level of abstraction,” and their “symbolic, orienting,” and “strategic” function.<sup>115</sup> The MEPC resolution adopting the 2023 Strategy recalls several international instruments, including the 2030 Agenda for Sustainable Development and the Paris Agreement.<sup>116</sup> In addition, paragraph 1.10 of the Strategy states that its objective is “aimed at enhancing IMO’s contribution to global efforts by addressing GHG emissions from international shipping. International efforts . . . include the Paris Agreement and its goals and the 2030 Agenda for Sustain-

100. *Id.* art. 15(i).

101. See IMO, *Structure of IMO*, <https://www.imo.org/en/About/Pages/Structure.aspx> (last visited Mar. 6, 2024).

102. IMO Convention, *supra* note 2, art. 38. See also International Convention for the Prevention of Pollution From Ships (MARPOL), arts. 15, 16, Nov. 2, 1973, 1340 U.N.T.S. 61, 12 I.L.M. 1319 (adopted Feb. 11, 1973, as modified by the Protocol of Feb. 17, 1978, entered into force Oct. 2, 1983). The registered version of the 1978 MARPOL Protocol incorporates the 1973 Convention as an annex; the Convention begins at 1340 U.N.T.S. 184.

103. IMO Res. A.963(23), *supra* note 44, at 2-3; IMO, *High-Level Action Plan of the Organization and Priorities for the 2010-2011 Biennium*, IMO Doc. Assembly Res. A.1012(26), annex, at 20 (Dec. 2, 2009); IMO, *Strategic Plan for the Organization for the Six Year Period 2018-2023*, IMO Doc. Assembly Res. A.1110(30), annex, at 15 (Dec. 6, 2017) [hereinafter IMO Doc. Assembly Res. A.1110(30)]; IMO, *Revised Strategic Plan for the Organization for the Six Year Period 2018 to 2023*, IMO Doc. Assembly Res. A.1149(32), annex 3, at 15 (Jan. 28, 2022).

104. IMO, *Consideration of the Reports and Recommendations of the Marine Environment Protection Committee*, at 3, IMO Assembly Doc. A 32/14 (Dec. 6, 2021).

105. See Christopher Peters, *Subsequent Practice and Established Practice*, 2 GOETTINGEN J. INT’L L. 617, 629-34 (2011) (explaining established practice and setting out test to identify it).

106. Giorgio Gaja (Special Rapporteur), *Eighth Report on Responsibility of International Organizations*, ¶ 19, U.N. Doc. A/CN.4/640 (Mar. 14, 2011).

107. *Id.* (rules of organization, including its established practice, are relevant to determining who is competent to speak for the organization).

108. Gilles J. Martin, *Principles and Rules*, in 4 ELGAR ENCYCLOPEDIA OF ENVIRONMENTAL LAW 13, 15-16 (Michael Faure ed., Elgar 2018).

109. IMO 2018 Strategy, *supra* note 3, at 5-6.

110. Martin, *supra* note 108, at 15-16 (environmental legal principles that accompany rules can be textually determined).

111. IMO 2023 Strategy, *supra* note 5, at 6. Evidence-based decisionmaking is discussed in Section III.D, *infra*.

112. IMO 2023 Strategy, *supra* note 5, at 5-6.

113. See Handl, *supra* note 3, at 49-55 (collecting literature).

114. See Baine P. Kerr, *Binding the International Maritime Organization to the United Nations Convention on the Law of the Sea*, 19 INT’L ORGS. L. REV. 391, 392-93 (2022) (evaluating the United Nations Convention on the Law of the Sea as a legal source of differentiation for the IMO’s maritime climate measures).

115. Martin, *supra* note 108, at 16-18.

116. IMO 2023 Strategy, *supra* note 5, at 1.

able Development” and its Sustainable Development Goal (SDG) 13, which is to take urgent action to combat climate change and its impacts.<sup>117</sup>

Thus, the Strategy cites values—sustainable development and SDG 13, and the Paris Agreement and its goals—to orient the IMO’s Strategy toward a particular outcome: the promotion of sustainable development and the limitation of global warming consistent with the Agreement. In my view, the legal characters of those values differ in that one is a principle and the other is a goal.<sup>118</sup> Sustainable development is a particularly abstract and general principle that rests on “three interdependent and complementary pillars—economic development, social development and environmental protection.”<sup>119</sup>

The Paris Agreement seeks to limit global warming, which is a policy objective or goal of trying to protect a “present feature from adverse change.”<sup>120</sup> As discussed above, that goal establishes an overall ceiling on how much carbon can be emitted that should be equitably shared based on international principles that run through the Agreement’s provisions.<sup>121</sup> The Strategy identifies which principles can be used to identify shipping’s fair share of that budget: special consideration for SIDS and LDCs; the precautionary principle balanced with evidence-based decisionmaking; and sustainable development.

### C. The Principles’ Legal Weight and Nature

What weight do these principles carry in connection with determining shipping’s fair share? As explained above, the 2023 Strategy was an IMO “rule” that imposes an obligation on the IMO itself. These principles can illuminate the content of that obligation: as Ronald Dworkin explained, principles can “point to particular decisions about legal obligations in particular circumstances.”<sup>122</sup> They give “a reason that argues in one direction, but does not necessitate a particular decision.”<sup>123</sup> Thus, international shipping’s levels of ambition can be normatively derived from the equitable principles outlined above, and the force of that assessment depends on the principles’ relative “weight or importance.”<sup>124</sup>

The principles here carry distinct weight. Sustainable development, evidence-based decisionmaking balanced with the precautionary approach, and special consideration for SIDS and LDCs are not only mentioned in the 2023 Strategy, they are also part of the IMO’s central mandate. In its strategic plans adopted in 2017 and 2021,

the IMO Assembly resolved that the SDGs are a core component of the organization’s mission, stating that it is “fully committed to achieving the SDGs.”<sup>125</sup> Likewise, for many years the Assembly has recognized the special needs of SIDS and LDCs.<sup>126</sup>

In 1995, the IMO Assembly first resolved that the organization would apply the precautionary principle balanced with evidence-based decisionmaking, and in 2011, the Assembly called for incorporating precaution into its strategic plan for the organization.<sup>127</sup> Thus, these three principles constitute part of the organization’s legal mandate, as they can be shown through the IMO’s “body of practice” formed “after a number of years” that is an “integral part” of the organization’s rules and is neither “disputed nor uncertain.”<sup>128</sup>

By connecting the IMO’s climate ambition to an external legal framework, these principles function as MSENs. MSENs are “two or more norms which are (1) binding upon the same international legal subjects; (2) similar or identical in their normative content; and (3) have been established through different international instruments or ‘legislative’ procedures or are applicable in different substantive areas of the law.”<sup>129</sup> The principles here apply to the IMO pursuant to its internal resolutions and organizational law, and to States through the climate treaties, their domestic law, or customary international law.

With the potential exception of the precautionary approach—which is discussed in Section III.D below—they are similar or identical in their normative content: in incorporating them through the Strategy and its established practice, the IMO referenced the Paris Agreement, the Rio Declaration, and United Nations General Assembly resolutions on SIDS and LDCs. And they were established through “different international instruments” and legal procedures.<sup>130</sup> Consequently, because these norms exist in parallel regimes and have identical or similar

117. *Id.* at 5.

118. See RONALD DWORKIN, *TAKING RIGHTS SERIOUSLY* 39 (1977) (discussing difference between goals and principles).

119. Virginie Barral, *The Principle of Sustainable Development*, in ELGAR ENCYCLOPEDIA OF ENVIRONMENTAL LAW IV, *supra* note 108, at 110-11. See also discussion *infra* Section III.B.

120. DWORKIN, *supra* note 118, at 39.

121. Lavanya Rajamani & Jacob Werksman, *The Legal Character and Operational Relevance of the Paris Agreement’s Temperature Goal*, 376 PHIL. TRANSACTIONS ROYAL SOC’Y A 20160458, at 8 (2018).

122. DWORKIN, *supra* note 118, at 40.

123. *Id.* at 42.

124. *Id.* at 43.

125. See IMO Doc. Assembly Res. A.1110(30), *supra* note 103, at 4 (the IMO’s vision is to “uphold its leadership role as the global regulator of shipping . . . while addressing . . . the need to meet the 2030 Agenda for Sustainable Development”); *id.* at 5 (“IMO has an important role to play in achieving the 2030 Agenda for Sustainable Development. . . . IMO is fully committed to achieving the 2030 Agenda and the SDGs”); IMO, *Revised Strategic Plan for 2018 to 2023*, at 2, IMO Doc. Res. A 32/Res. 1149 (Jan. 28, 2022) (noting the importance of the 2030 Agenda and SDGs).

126. See IMO, *Application of the Strategic Plan and the High-Level Action Plan of the Organization*, at 7, IMO Doc. Assembly Res. A29/Res. 1099 (Nov. 25, 2015).

127. IMO, *Strategic Plan for the Organization (for the Six Year Period 2012 to 2017)*, at 5, IMO Doc. Assembly Res. 1037(27) (Nov. 22, 2011) (the challenge for the IMO, in line with the global emphasis on sustainable development, is to be proactive in identifying shipping activities and incidents that could have an adverse impact on the environment and, therefore, in developing corresponding preventive measures). See generally BÉNÉDICTE SAGE-FULLER, *THE PRECAUTIONARY PRINCIPLE IN MARINE ENVIRONMENTAL LAW* 219-23 (2013) (discussing the IMO and the precautionary principle).

128. *Draft Articles on the Law of Treaties Between States and International Organizations or Between International Organizations With Commentaries*, ¶ 25, at 21 [1982] 2 Y.B. Int’l L. Comm’n, [https://legal.un.org/ilc/texts/instruments/english/commentaries/1\\_2\\_1982.pdf](https://legal.un.org/ilc/texts/instruments/english/commentaries/1_2_1982.pdf).

129. Broude & Shany, *supra* note 33, at 5.

130. *Id.*

wording, their content and meaning for the IMO can be derived externally.<sup>131</sup>

That has legal and practical implications for the assessment of the IMO's fair share. The 2023 Strategy states that it “represents the continuation of work by IMO as the appropriate international body to address” GHG emissions from international shipping.<sup>132</sup> The IMO submitted the Strategy to the Paris Agreement's first global stocktake, which “enables countries and other stakeholders to see where they're collectively making progress toward meeting the goals of the Paris Agreement—and where they're not.”<sup>133</sup> The IMO's climate policies were enacted in the context of potential action under the UNFCCC and the European Union's unilateral actions, which threaten to displace the IMO.<sup>134</sup>

Accordingly, the IMO's recitation of certain principles has two external functions. First, it enhances the IMO's legitimacy as the self-described “sole competent international organization with a global mandate to regulate all non-commercial aspects of international shipping, including reduction or limitation of GHG emissions.”<sup>135</sup> Second, the principles place the IMO's actions within the “global and coherent policy”<sup>136</sup> of collective action toward the mitigation of climate change. The principles thus align technical and seemingly ad hoc rules, such as the IMO's levels of ambition, to a larger body of environmental law and the broad international effort addressing climate change.<sup>137</sup> Therefore, although they operate as part of the IMO's internal law, the principles have equivalent and parallel meanings across the climate and maritime legal regimes that can be used to assess shipping's fair share.<sup>138</sup>

What does that mean for the levels of ambition that are set forth in the 2023 Strategy? Gilles Martin writes about environmental legal principles that those that “‘overhang’ provide precious assistance in the interpretation and application of a rule.”<sup>139</sup> The “rule” established by the IMO is unclear because it mixes quantitative and qualitative elements. The levels of ambition are that carbon intensity will decline by 40% by 2030 compared to 2008 levels, and emissions will reach net zero “by or around, i.e., close to, 2050.” The indicative checkpoints to reach net-zero emissions are that shipping's GHG emissions will be reduced by at least 20%, striving for 30%, by 2030, and will be reduced by 70%, striving for 80%, by 2040.<sup>140</sup> But the Strategy also states that emissions will be phased out “consistent with

the long-term temperature goal set out in Article 2 of the Paris Agreement.”<sup>141</sup>

The Paris Agreement's long-term temperature goal requires a collective effort across States and sectors that is rooted in fairness and equity. As shown in Part I, the IMO's Member States fundamentally agree on that premise and frame their discussion in those terms. The principles included in the Strategy can serve as interpretive guideposts in assessing whether the IMO's numeric reduction objectives represent a fair share of the international shipping sector's contribution toward the Paris Agreement's goals.<sup>142</sup> Their application also brings coherence and meaning to the fairness discourse within the IMO.<sup>143</sup>

Article 2 of the Paris Agreement itself is unclear in that it refers to both 1.5 and 2 degrees warming.<sup>144</sup> In 2018, the Intergovernmental Panel on Climate Change (IPCC) found that warming of 2 degrees presents a significantly higher risk of a wide range of harms to biodiversity, ecosystems, and human health and security than 1.5-degree warming.<sup>145</sup> Because the Paris Agreement signatories recognized “the need for an effective and progressive response to the urgent threat of climate change on the basis of the best available scientific knowledge,” IPCC reports are viewed as having particular importance in understanding the Agreement's temperature goals.<sup>146</sup>

In addition, in 2021, the UNFCCC Member States adopted the Glasgow Climate Pact, which found “that climate impacts will be much lower at 1.5 degrees compared with 2 degrees,” and resolved “to pursue efforts to limit the temperature increase to 1.5 degrees.”<sup>147</sup> The IMO has acknowledged the recent IPCC reports and the Glasgow Climate Pact, and recognized “the urgency for all sectors to accelerate their efforts to reduce GHG emissions.”<sup>148</sup> In light of the IPCC's finding, the Glasgow Climate Pact, and the IMO's recognition of those developments, international shipping's fair share should be tied to 1.5 degrees rather than 2 degrees. As explained next, the 1.5-degree goal itself and the equitable principles identified above show what that share should be.

### III. Shipping's Principled Fair Share

Doelle and Chircop point out that determining shipping's fair share involves deciding whether shipping will achieve

131. Pirker, *supra* note 34, at 93-94.

132. IMO 2023 Strategy, *supra* note 5, at 4.

133. See United Nations Climate Change, *Global Stocktake*, <https://unfccc.int/topics/global-stocktake> (last visited Mar. 6, 2024).

134. See Dobson, *supra* note 40, at 185.

135. IMO, *Position Paper to UNFCCC Ad-Hoc Working Group*, at 6, IMO Doc. AWG-LCA 8 (Dec. 17-18, 2009).

136. Martin, *supra* note 108, at 20 (discussing principles' legitimizing role).

137. *Id.*

138. Broude & Shany, *supra* note 33, at 9 (“In every set of MSENs, there is a core of equivalence, but also a measure of difference . . . MSENs are norms which on their face are presumed to be mutually reinforcing, even though at some level of analysis and with certain factual patterns there might emerge an inconsistency between them.”).

139. Martin, *supra* note 108, at 21.

140. IMO 2023 Strategy, *supra* note 5, at 6.

141. *Id.*

142. Martin, *supra* note 108, at 21-22 (discussing judicial reference to principles to justify and explain interpretation of rules).

143. See AMAYA, *supra* note 37, at 420-21 (“a discourse is coherent if it ‘makes sense as a whole’”).

144. Paris Agreement, *supra* note 14, art. 2.

145. IPCC, *Summary for Policymakers*, in GLOBAL WARMING OF 1.5°C (Valérie Masson-Delmotte et al. eds., Cambridge Univ. Press 2018).

146. Paris Agreement, *supra* note 14, pmbl.; see Erland Hermansen et al., *Post-Paris Policy Relevance: Lessons From the IPCC SR15 Process*, 169 CLIMATIC CHANGE art. 7, at 1 (2021).

147. UNFCCC, *Report of the Conference of the Parties Serving as the Meeting of the Parties to the Paris Agreement on Its Third Session, Held in Glasgow From 31 October to 13 November 2021*, dec. 1/CP.26, ¶ 21, U.N. Doc. FCCC/PA/CMA/2021/10/Add.1 (Mar. 8, 2022).

148. IMO, *Report of the Marine Environment Protection Committee on Its Seventy-Eighth Session*, at 33, 40, IMO Doc. MEPC 78/17 (June 24, 2022).

the average global effort required by the Paris Agreement's goal, more rapid reductions, or "whether there are reasons to allow the sector more time to reduce emissions."<sup>149</sup> This part answers those questions by first considering what levels of reductions would be consistent with limiting global warming to 1.5 degrees, and then by applying the equitable principles identified above.

### A. *The Paris Agreement's 1.5-Degree Goal*

The 2023 Strategy specifically tied the Paris Agreement's temperature goals to shipping's levels of ambition, and as discussed in Part I, there is broad agreement among IMO Member States and observers that the 1.5-degree goal should guide the IMO's actions. Doelle and Chircop argue that fairness for the sector "ought to be determined in alignment with the average global effort required by" the Paris Agreement.<sup>150</sup> In other words, because shipping serves States at all levels of development, the sector's reductions should be equal to the average emission reductions required worldwide that would limit warming to 1.5 degrees by mid-century.<sup>151</sup>

According to Simon Bullock et al., for shipping to do so, the sector needs to reduce emissions by 34% by 2030 and to have zero emissions by 2040 to have a 50% probability of meeting the 1.5-degree goal.<sup>152</sup> Other studies reached similar conclusions.<sup>153</sup> Thus, the 2023 levels of ambition do not comply with the 1.5-degree goal, assuming that shipping only needs to achieve the average global effort rather than do more than certain States or sectors.

### B. *Sustainable Development*

The sustainable development principle indicates that the current levels of ambition do not represent shipping's fair share, and that even a reduction pathway based on the average global effort would not be equitable. The 2030 Sustainable Development Agenda calls for intergenerational and intragenerational equity, in particular related to climate change, and SDG 13 calls for "taking urgent action to fight climate change and its impacts."<sup>154</sup> Thus, while sustainable development includes economic elements, its aspects relating to climate change implicate the need to protect the environment now for the benefit of future generations,<sup>155</sup> thereby integrating demands for intergenerational equity.<sup>156</sup>

Consistent with that, in *Neubauer v. Germany*, the German Constitutional Court found that in the climate context, intergenerational equity stands for the proposition

that "one generation must not be allowed to consume large portions of the CO<sub>2</sub> budget while bearing a relatively minor share of the reduction effort, if this would involve leaving subsequent generations with a drastic reduction burden and expose their lives to serious losses of freedom."<sup>157</sup> While a German court decision is not directly applicable to the IMO, it shows how the principle of intergenerational equity can be viewed as an MSEN with a cumulative meaning: it cuts across different legal regimes; arises from different legal instruments; and has a flexible and contextually diverse application.<sup>158</sup>

What levels of ambition for shipping would be consistent with sustainable development, and in particular its call for intergenerational equity and urgent action to fight climate change? As discussed above, the IMO's current levels of ambition set an interim goal of a 40% reduction in carbon intensity by 2030, an uptake of at least 5% of zero or near-zero GHG emission technologies, "fuels and/or energy sources," by 2030, peaking GHG emissions "as soon as possible," and net-zero GHG emissions "by or around, i.e., close to, 2050."<sup>159</sup> They also include "indicative checkpoints" to reach net-zero emissions: total emissions are to be reduced by at least 20%, striving for 30% by 2030 compared to 2008 levels, and at least 70%, striving for 80% by 2040.<sup>160</sup>

The IMO's goal was adopted in the context of studies showing that front-loading GHG reduction requirements would avoid stranded assets because most commercial vessels have a 25-year life-span.<sup>161</sup> By delaying GHG reductions that could happen now and consuming an increasing portion of the carbon budget, the IMO is locking emissions in and leaving future generations with a greater reduction burden both within and beyond the shipping sector than they would otherwise bear.<sup>162</sup> Thus, the principle of intergenerational equity suggests that a fair share for shipping would include urgent and immediate reductions in emissions.

Sustainable development also implicates intragenerational equity, as the preamble of the SDGs and nearly all the individual goals emphasize the need for equity within the present generation.<sup>163</sup> Reductions equal to the average global effort would be inconsistent with intragenerational equity because shipping could reduce emissions sooner and more cheaply compared with other sectors. One study shows that shipping could feasibly decarbonize by 2035,<sup>164</sup> and compared with aviation, there are more

149. Doelle & Chircop, *supra* note 29, at 268.

150. *Id.*

151. *Id.*

152. Bullock et al., *supra* note 9, at 302.

153. See sources cited *supra* note 9.

154. G.A. Res. 70/1, Transforming Our World: The 2030 Agenda for Sustainable Development, at 2, 23, U.N. Doc. A/Res/70/1 (Oct. 21, 2015) [hereinafter SDGs].

155. Rajamani et al., *supra* note 15, at 989 (citing INTERNATIONAL LAW ASSOCIATION, LEGAL PRINCIPLES ON CLIMATE CHANGE AND CLIMATE LIABILITY UNDER PUBLIC INTERNATIONAL LAW draft art. 3, at 10, ¶ 4 (2014)).

156. Barral, *supra* note 119, at 110-11.

157. Bundesverfassungsgericht [BvR] [Federal Constitutional Court] Mar. 24, 2021, 2656 Entscheidungen des Bundesverfassungsgerichts [BVerfGE], 1, 192 (English translation).

158. Broude & Shany, *supra* note 33, at 13-14 (discussing International Court of Justice's "cumulative" approach to cross-cutting norms).

159. IMO 2023 Strategy, *supra* note 5, at 6.

160. *Id.*

161. Simon Bullock et al., *Shipping and the Paris Climate Agreement: A Focus on Committed Emissions*, 2 BMC ENERGY art. 5, at 12, 14 (2020).

162. *Id.*

163. See SDGs, *supra* note 154.

164. ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (OECD), DECARBONISING MARITIME TRANSPORT: PATHWAYS TO ZERO-CARBON SHIPPING BY 2035, at 51 (2018).

options to implement low- and zero-carbon technologies in the 2020s and 2030s.<sup>165</sup> Viable technologies could lead to deep decarbonization of shipping if regulations incentivize private investment.<sup>166</sup>

Thus, the IMO is positioned to enact deep reductions to shipping's emissions in a way that would be impossible for aviation, which like shipping serves developed and developing States, and the land use and agriculture sectors, which simultaneously face increased disruption from climate impacts and increased demand for food and bioenergy.<sup>167</sup> The principle of intragenerational equity thus calls for the IMO not only to adopt levels of ambition that are consistent with the 1.5-degree temperature goal as discussed above, but also to adopt an emissions-reduction pathway that reflects its unique technological capacity to reduce emissions.

Arguably, it would conflict with intragenerational equity—from a North-South perspective—to require emission reductions from shipping greater than the global average.<sup>168</sup> Some scholars have argued the sector should be allowed more time to reduce emissions because of its importance to world trade and developing economies,<sup>169</sup> and some developing countries have opposed increasing the IMO's levels of ambition for reductions.<sup>170</sup> Yet, studies show that although shipping benefits both developing and developed countries, “global trade is significantly driven by wealthier countries,”<sup>171</sup> and more than 70% of the world's merchant fleet is owned by companies in developed countries.<sup>172</sup>

Therefore—assuming measures do not unfairly burden developing States—sustainable development and its component principles of intergenerational and intragenerational equity indicate that a fair share for shipping would include urgent and immediate reductions beyond those required by the IMO's 2023 Strategy. That con-

clusion is consistent with arguments by European States and SIDS that fairness for shipping should be defined in relation to its technological capability and in comparison with other sectors.<sup>173</sup>

### C. Special Circumstances for SIDS and LDCs

This principle “requires that the special circumstances and specific needs of developing States, especially those that are least developed, and particularly vulnerable, be given priority.”<sup>174</sup> The IMO Assembly has repeatedly resolved, including in the strategic plan adopted for 2018-2023, that the “IMO will ensure that the views of all stakeholders are taken into account in its decision-making processes and continue to pay particular attention to the needs of developing countries, especially small island developing States (SIDS) and least developed countries (LDCs).”<sup>175</sup> Those decisionmaking processes include ensuring a balance for “international shipping between the need for economic development, facilitation of international trade, safety, security and environmental protection.”<sup>176</sup>

In discussions about shipping's climate impacts, there has been little disagreement among SIDS and LDCs about whether the IMO should adopt an ambitious cap for GHGs from shipping and act quickly to reduce emissions. Eight of the SIDS that have publicly taken a position—Antigua and Barbuda, Fiji, Kiribati, the Marshall Islands, the Solomon Islands, Tonga, Tuvalu, and Vanuatu—have called for the highest possible level of ambition, and for shipping's decarbonization by mid-century.<sup>177</sup> Among LDCs, three of which are also SIDS, Kiribati, the Solomon Islands, and Tuvalu support a high level of ambition for reductions.<sup>178</sup> Angola has opposed a GHG emissions cap for shipping.<sup>179</sup> As IMO Member States have noted, SIDS and LDCs may not have necessary resources to travel to and participate in MEPC meetings, which could account for the lack of public comment on this and other issues by some SIDS and LDCs.<sup>180</sup>

The SIDS and LDCs that support a high level of ambition argue that although they face the highest per capita maritime transport costs in the world, they are the most vulnerable in terms of the effect and timing of climate change. For atoll and low-lying SIDS, those effects are potentially existential.<sup>181</sup> Those States argue that climate effects “outweigh the risks of hesitation. All sectors and all

165. Maria Sharmina et al., *Decarbonising the Critical Sectors of Aviation, Shipping, Road Freight, and Industry to Limit Warming to 1.5-2°C*, 21 CLIMATE POL'Y 455, 462 (2021); Bullock et al., *supra* note 161, at 12; Jonathan Köhler et al., *Transitions for Ship Propulsion to 2050: I AHOY Combined Qualitative and Quantitative Scenarios*, 140 MARINE POL'Y 105049 (2022) (rapid reductions of shipping's GHG emissions possible; aviation has “fewer realistic technical alternatives than shipping”); JASPER FABER ET AL., CE DELFT, SHIPPING GHG EMISSIONS 2030: ANALYSIS OF THE MAXIMUM TECHNICAL ABATEMENT POTENTIAL (2023), [https://cedelft.eu/wp-content/uploads/sites/2/2023/06/CE\\_Delft\\_230208\\_Shipping\\_GHG\\_emissions\\_2030\\_Def.pdf](https://cedelft.eu/wp-content/uploads/sites/2/2023/06/CE_Delft_230208_Shipping_GHG_emissions_2030_Def.pdf) (discussing technical feasibility of shipping's decarbonization).

166. IPCC WG III REPORT, *supra* note 83, at 1744, 1764.

167. See Beatriz Martínez Romera & Harro van Asselt, *The International Regulation of Aviation Emissions: Putting Differential Treatment Into Practice*, 27 J. ENV'T L. 259, 262 (2015) (discussing debate over the CBDR-RC principle within the International Civil Aviation Organization); IPCC, *Summary for Policymakers*, in CLIMATE CHANGE AND LAND: AN IPCC SPECIAL REPORT ON CLIMATE CHANGE, DESERTIFICATION, LAND DEGRADATION, SUSTAINABLE LAND MANAGEMENT, FOOD SECURITY, AND GREENHOUSE GAS FLUXES IN TERRESTRIAL ECOSYSTEMS 21 (Priyadarshi R. Shukla et al. eds., IPCC 2019).

168. Intragenerational equity is concerned with the implications of climate policy in a North-South context. See Rajamani et al., *supra* note 15, at 990.

169. See Bullock et al., *supra* note 9, at 303 (citing literature).

170. See discussion *supra* Part I.

171. Bullock et al., *supra* note 9, at 303.

172. This figure includes ships owned by companies in South Korea, Hong Kong, and Taiwan. UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT, REVIEW OF MARITIME TRANSPORT 36 (2015).

173. See IMO, *supra* note 60, at 3-4; IMO, *supra* note 76, at 3; discussion *supra* Part I.

174. Rajamani et al., *supra* note 15, at 989.

175. IMO Doc. Assembly Res. A.1110(30), *supra* note 103, at 4.

176. *Id.*

177. IMO, *supra* note 80, annex 16, at 2, 3, 4, 11-12, 32, 40; IMO, *Report of the Marine Environment Protection Committee on Its Seventy-Ninth Session*, IMO Doc. MEPC 79/5/Add.1 (Feb. 9, 2023), annex 16, 33-34.

178. IMO, *supra* note 80, at 2-4.

179. IMO, *Proposal on How to Progress on the Contribution of International Shipping to GHG Emissions Reductions Efforts*, at 2, IMO Doc. MEPC 70/7/4 (Aug. 25, 2016).

180. IMO, *Report of the Marine Environment Protection Committee on Its Seventy-Fourth Session*, at 53, IMO Doc. MEPC 74/18 (June 9, 2019).

181. IMO, *supra* note 71, at 2.

actors must bear their share if the effects of some are not to be disproportionate on others.”<sup>182</sup>

There was disagreement among SIDS and LDCs about whether the IMO met that standard with its 2023 levels of ambition. Fiji stated that the Strategy “has fallen short of the 1.5 degree target,” but nevertheless “sets the pathway to achieving decarbonization by 2050.”<sup>183</sup> Kiribati, Tuvalu, and Vanuatu likewise expressed disappointment with the outcome.<sup>184</sup> Jamaica noted the importance of the indicative checkpoints, and a further revision of the Strategy planned for 2028, where it anticipates that the targets will change.<sup>185</sup>

The Marshall Islands similarly stated that more work needed to be done.<sup>186</sup> The Cook Islands and Palau made positive remarks.<sup>187</sup> Among LDCs, the only States that commented were Bangladesh, which welcomed the adoption of the Strategy and said that it takes into account the concerns of SIDS, LDCs, and climate-vulnerable countries, and Madagascar, which stated that the IMO did not fail in its mission but that much remains to be done, in particular in this decade.<sup>188</sup>

The principle of special consideration for SIDS and LDCs indicates that the IMO should weigh those States’ needs heavily. Yet, as discussed above, the IMO’s 2023 levels of ambition for reductions are inconsistent with limiting global warming to 1.5 degrees, and will exacerbate rather than address climate risks for SIDS and LDCs.<sup>189</sup> Therefore, like the sustainable development principle, special consideration for SIDS and LDCs suggests that a fair share for shipping would reflect the highest possible levels of ambition for GHG reductions.

#### D. Evidence-Based Decisionmaking Balanced With the Precautionary Principle

In 1981, the IMO Assembly resolved that the organization should only entertain proposals for new measures “on the basis of clear and well documented demonstration of compelling need . . . and having regard to the costs . . . and the burden on the legislative and administrative resources of Member States.”<sup>190</sup> This became known as the evidence-based decisionmaking principle, and as Chircop and other scholars have stated, in the maritime context it means that

pollution-control technologies should be available and their need proven before regulations are put into place.<sup>191</sup>

After the Rio Declaration was adopted, the IMO Assembly resolved that the precautionary approach—as articulated in Principle 15 of the Rio Declaration—should guide “anticipation and prevention of environmental problems arising from any regulatory activities of IMO and striving for continual improvement in all facets of those activities.”<sup>192</sup> Principle 15 states that “where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.”<sup>193</sup> But the IMO Assembly also resolved that “the precautionary approach should not be considered in isolation of other IMO practices, procedures, and resolutions, including resolutions A.500 and A.777,” which articulate evidence-based decisionmaking.<sup>194</sup>

As Chircop and Desai Shan state, the effective fulfillment of the IMO’s climate goals will require reconciling these two principles in order to “shift from the IMO’s history of predominantly reactive regulation, to greater proactive regulation that sets the long-term path to decarbonisation.”<sup>195</sup> In other words, the organization will need to proactively regulate in a way that encourages the adoption of low- and zero-carbon shipping technology quickly and across the sector. Thus far, the IMO has implemented the principle through a “three-step approach” to its energy efficiency and GHG emission reporting measures that consists of data collection, a pilot phase, and full implementation.<sup>196</sup>

In my view, the three-step approach is inapplicable to shipping’s levels of ambition for reductions and whether they represent a fair share, as opposed to the discrete measures that the IMO adopts to operationalize its goals. As stated above, it is unclear how quickly shipping could decarbonize, with the Organisation for Economic Cooperation and Development estimating that 2035 would be feasible, and other studies showing that there are significant market barriers that would make such a target difficult to achieve.<sup>197</sup> Certain delegations to the IMO opposed setting a reduction target because of uncertainties about low- and zero-carbon shipping technologies and their supply chains, and argued that the IMO’s levels of ambition

182. *Id.*

183. IMO, *Report of the Environmental Protection Committee on Its Eightieth Session*, IMO Doc. MEPC 80/17/Add.1, annex 30, at 57-58 (Aug. 5, 2023).

184. *Id.* at 62, 69, 72-73.

185. *Id.* at 62.

186. *Id.* at 63-64.

187. *Id.* at 65-66.

188. *Id.* at 52, 63.

189. UNITED NATIONS ENVIRONMENT PROGRAMME, *EMISSIONS GAP REPORT 2020*, at xiii (2020) (international shipping and aviation together will consume between 60% and 220% of the allowable carbon budget by 2050 to meet the 1.5-degree temperature threshold).

190. Intergovernmental Maritime Consultative Organization, *Objectives of the Organization in the 1980s*, IMCO Doc. Assem. Res. A XII/500 (Nov. 20, 1981).

191. Aldo Chircop & Desai Shan, *Governance of International Shipping in the Era of Decarbonisation: New Challenges for the IMO?*, in *MARITIME LAW IN MOTION* 109 (Proshanto K. Mukherjee et al. eds., Springer 2020).

192. IMO, *Guidelines on Incorporation of the Precautionary Approach in the Context of Specific IMO Activities*, IMO Doc. MEPC 37/22/Add.1, annex 10, at 1, 3 (Sept. 15, 1995).

193. UN Gen. Assem., *Report of the United Nations Conference on the Environment and Development*, at 3, U.N. Doc. UNGA A/CONF.151/26 (Vol. I) (Aug. 12, 1992).

194. *Id.*

195. Chircop & Shan, *supra* note 191, at 109.

196. Kjersti Aalbu & Tore Longva, *From Progress to Delay: The Quest for Data in the Negotiations on Greenhouse Gases in the International Maritime Organization*, 22 *GLOB. ENV'T POL.* 136, 137 (2022); Kopela, *supra* note 81, at 140-41.

197. *Compare* OECD, *supra* note 164, with Michael Traut et al., *CO<sub>2</sub> Abatement Goals for International Shipping*, 18 *CLIMATE POL'Y* 1066, 1073 (2018).

should be informed by scientific assessments on the availability of alternative fuels and technologies.<sup>198</sup>

But in light of expected increases in demand for global shipping and the limited carbon budget, there is a “demonstrated need” for GHG reductions from shipping, and the necessary technology is known, even if not widely available.<sup>199</sup> In addition, emission reductions need to be front-loaded in order to preserve the option “to further tighten remaining carbon budgets in light of new scientific findings,” and sooner and faster climate mitigation action is a more cost-effective way of achieving the Paris Agreement’s temperature goals.<sup>200</sup> Therefore, a high level of ambition for shipping’s reductions is consistent with evidence-based decisionmaking.

Moreover, as mentioned above, when compared to reductions from other sectors, shipping reductions are a low-cost option for mitigating climate change.<sup>201</sup> Any lack of certainty about the feasibility of pollution-control measures should not be a basis for postponing reductions. That is especially so because the climate crisis requires policy responses that are larger in scope and effect than other types of pollution control.<sup>202</sup> Accordingly, evidence-based decisionmaking balanced with the precautionary approach indicates that shipping’s levels of ambition for reductions should reflect what might be technologically achievable in the future rather than what is achievable now.

#### IV. Conclusion

Under the IMO’s current policies, international shipping will consume an increasing share of the carbon budget that remains to prevent global warming above 1.5 degrees, even though the sector has a unique technological ability to reduce emissions compared with international aviation and other sectors such as land use and agriculture. Within the IMO, States, industry groups, and nongovernmental organizations appeal to notions of fairness and a fair share for shipping to support their position. The IMO specifically cited equitable principles of international environmental law in its climate resolutions, and those principles are integrated into its overall regulatory mandate. Because these

norms apply to the IMO in parallel to States and other legal subjects, their content and meaning can be derived from the climate regime and international environmental law generally.

These principles signal that the IMO is not contributing its fair share toward addressing the climate crisis. Compatibility with the Paris Agreement’s temperature goal requires a level of ambition for reductions that is at least equal to the average global effort required to limit warming to 1.5 degrees. Sustainable development and its component equitable principles, as well as special consideration for SIDS and LDCs, point to a more stringent reduction pathway that reflects the highest possible ambition for the sector. The precautionary approach, balanced with evidence-based decisionmaking, implies that the IMO should set its levels of ambition based on what might be technologically achievable in the future rather than what is presently available. These principles taken together mean that a fair share for shipping would be its highest possible ambition in light of the sector’s unique capacity to mitigate.

That capacity is dynamic and difficult to define. The IMO resolved that it would revisit its levels of ambition for reductions every five years, but there is no legal reason why it cannot do so more flexibly and iteratively. Periodic reassessments of States’ emission-reduction commitments is contemplated by the Paris Agreement, which provides that a Party to it “may at any time adjust its existing nationally determined contribution with a view to enhancing its level of ambition.”<sup>203</sup> And reassessments of shipping’s technological capacity may be required if the Paris Agreement’s temperature goals are to be met—achieving net-zero emissions requires ambitious long-term targets that are made credible with near-term action and flexible intermediate goals.<sup>204</sup>

Therefore, the IMO’s levels of ambition will need to be frequently revisited in order for them to be consistent with the principles discussed here. As the IMO moves forward, the application of equitable principles to its levels of ambition for GHG reductions will help ensure that shipping’s share of the mitigation burden is truly fair, integrate the sector into the climate regime, and further the coherence of international law.

198. See discussion *supra* Part I; Aalbu & Longva, *supra* note 196, at 148; Kopela, *supra* note 81, at 143.

199. Traut et al., *supra* note 197, at 1069-70 (discussing expected rise in demand for shipping as driver in increasing emissions); IMO, *supra* note 86, at 4-5 (85% of cost of decarbonizing will involve land-based renewable energy infrastructure).

200. Sam Fankhauser et al., *The Meaning of Net Zero and How to Get It Right*, 12 NATURE CLIMATE CHANGE 15, 17 (2022).

201. See sources cited *supra* notes 165-67. See also IMO, *supra* note 86, at 4 (cost of decarbonizing shipping \$1.5 trillion); Benjamin Wehrmann & Nikolaus J. Kurmayer, *€860 Billion Needed to Finance German Climate Goals*, EURACTIV (Dec. 8, 2021), <https://www.euractiv.com/section/energy-environment/news/e860-billion-needed-to-finance-german-climate-goals/>.

202. See generally William Boyd, *The Poverty of Theory: Public Problems, Instrument Choice, and the Climate Emergency*, 46 COLUM. J. ENV’T L. 399 (2021).

203. Paris Agreement, *supra* note 14, art. 4(11).

204. Fankhauser et al., *supra* note 200, at 17.