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ESSAY

Maritime Emissions Taxation: An Alternative to the EU Emissions Trading Scheme?

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I. INTRODUCTION

The advent of the eighteenth session of the United Nations Framework Convention on Climate Change (UNFCCC) Conference of the Parties (COP18)[1] internationalized a new sense of urgency[2] towards preventing the planet from spiraling towards an unsustainable rise in global temperatures, with an emphasis that states must simply do more than fulfill their existing obligations.[3] Prior to the summit, the European Union (EU) raised the issue of maritime greenhouse gas (GHG) emissions,

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1. *What is COP?*, COP18, http://www.cop18.qa/en-us/aboutcop18cmp8/cop18cmp8.aspx (last visited Oct. 17, 2013). The 18th session of the Conference of the Parties to the UNFCCC and the 8th session of the Meeting of the Parties to the Kyoto Protocol, to review the implementation of the Kyoto Protocol and take decisions to promote its effective implementation, took place from Nov. 26, 2012 to Dec. 7, 2012 in Doha, Qatar.

2. *See generally* THE WORLD BANK, TURN DOWN THE HEAT: WHY A 4°C WARMER WORLD MUST BE AVOIDED (2012), *available at* http://climatechange.worldbank.org/sites/default/files/Turn_Down_the_heat_Why_a_4_degree_centrigrade_warmer_world_must_be_avoided.pdf (warning that the world must take greater measures than currently agreed, in order to avoid a 4°C rise in global temperatures).

3. Press Release, Eur. Comm'n, Climate Action: Questions and Answers on the UN Climate Conference in Doha No. 12/888 (Nov. 23 2012), *available at* http://europa.eu/rapid/press-release_MEMO-12-888_en.htm (stressing the importance of entering new binding commitments to reduce GHGs).

where an absence of any binding international agreement meant that the shipping industry was not privy to the same emissions reduction imperatives[4] as other sectors.[5]

Having previously bound itself to reducing emissions,[6] the EU proposed including GHG emissions from the maritime transportation sector in the EU Emissions Trading Scheme (EU ETS),[7] but also raised alternative options for internal measures including the imposition of an emissions tax.[8] Such action from the EU could have far-reaching implications for the rest of the world,[9] potentially instigating other states to take any number of possible actions.[10] These actions may include objecting to such a

4. The International Monetary Fund (IMF) considered the maritime transport sector to be 'undercharged' (in terms of their fuel). INT'L MONETARY FUND, MARKET-BASED INSTRUMENTS FOR INTERNATIONAL AVIATION AND SHIPPING AS A SOURCE OF CLIMATE FINANCE 5 (2011), *available at* http://www.imf.org/external/np/g20/pdf/110411a.pdf.

5. *See* Press Release, Council of the EU, Conclusions on the Preparations for the 18th Session of COP 18 to the UNFCCC and the 8th Session of the Meeting of the Parties to the Kyoto Protocol (Doha, Qatar, Nov. 26 - Dec. 7, 2012) 3194th Environment Council Meeting, Luxembourg 6 (Oct. 25, 2012), *available at* http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/envir/133227.pdf.

6. *See infra* text accompanying notes 14-22.

7. Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 Amending Directive 2003/87/EC so as to Improve and Extend the Greenhouse Gas Emission Allowance Trading Scheme of the Community, 2009 O.J. (L 140) 63, 63 [hereinafter Directive 2009/29/EC], *available at* http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0063:0087:en:pdf.

8. EUR. COMM'N, ROADMAP: MEASURES TO INCLUDE MARITIME TRANSPORT EMISSIONS IN THE EU'S GREENHOUSE GAS REDUCTION COMMITMENT IF NO INTERNATIONAL RULES AGREED 2 (2011) [hereinafter ROADMAP], *available at* http://ec.europa.eu/governance/impact/planned_ia/docs/2012_clima_001_maritime_transport_emissions_en.pdf.

9. *Benefits of Trade Liberalisation: Trade Costs*, OECD, http://www.oecd.org/tad/benefitlib/trade-costs.htm (last visited Oct. 17, 2013) (noting that as of 2007, 90% of global trade by volume is carried by ship); JASPER FABER ET AL., TECHNICAL SUPPORT FOR EUROPEAN ACTION TO REDUCING GREENHOUSE GAS EMISSIONS FROM INTERNATIONAL MARITIME TRANSPORT 11 (2009), *available at* http://ec.europa.eu/clima/policies/transport/shipping/docs/ghg_ships_report_en.pdf (noting approximately one third of world shipping emissions stemmed from voyages arriving at or departing from EU ports).

10. M.E. DAVIES ET AL., BMT MURRAY FENTON EDON LIDDIARD VINCE LTD., STUDY ON THE ECONOMIC, LEGAL, ENVIRONMENTAL AND PRACTICAL IMPLICATIONS OF A EUROPEAN UNION SYSTEM TO REDUCE SHIP EMISSIONS OF SO_2 AND NO_X: FINAL REPORT FOR EUROPEAN COMMISSION CONTRACT 25 (2000), *available at* http://ec.europa.eu/environment/enveco/taxation/ship_emissions/pdf/

scheme, seeking instead to capitalize by attracting new shipping registrations through carbon leakage;[11] seeking an international agreement to avoid unilateral action by one legislature; or taking similar measures themselves rather than risk losing important revenues.[12]

Focusing on the EU's alternative proposal of an emissions tax, this article analyzes the possibility for the imposition by an EU Member State of a targeted environmental tax to reduce maritime emissions. It considers how such a tax can be imposed in a manner that will not be detrimental to commercial interests and can instigate the desired impact.[13] Importantly, it focuses upon providing a greater incentive for the maritime industry to invest in the most efficient shipping fleet to reduce emissions. It concludes by comparing whether such a perceived maritime emissions tax could be more advantageous than including maritime emissions in the EU ETS.

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mainfinal.pdf (noting approximately half of the world's ships gross registered at 250 tons or more are estimated to operate in European waters).

11. The European Commission defines carbon leakage as the term often

> used to describe the situation that may occur if, for reasons of costs related to climate policies, businesses were to transfer production to other countries which have laxer constraints on greenhouse gas emissions. This could lead to an increase in their total emissions. The risk of carbon leakage may be higher in certain energy-intensive industries.

Climate Action, Carbon Leakage, EUR. COMM'N, http://ec.europa.eu/clima/policies/ets/cap/leakage/index_en.htm (last visited Oct. 17, 2013). *See also* Mustafa H. Babiker, *Climate Change Policy, Market Structure, and Carbon Leakage*, 65 J. INT'L ECON. 421, 422 (2005) (explaining how some developing countries may be willing to relax carbon emissions rules to attract relocating companies).

12. INT'L MONETARY FUND, *supra* note 4, at 38 (calculating revenues from international maritime fuels).

13. Directive 2009/29/EC, *supra* note 7, at 63 (This is also in line with the stated intention of the EU in selecting from the various legal instruments available, with its Directive stating that any "proposal should [minimize] any negative impact on the Community's competitiveness while taking into account the potential environmental benefits.").

II. BACKGROUND: EU LAW

The EU's 20-20-20 policy, for decreasing emissions across the Union from 1990 levels by at least 20% by 2020,[14] imposed a deadline of December 31, 2011 to reach an international agreement through the UNFCCC[15] or through the International Maritime Organization (IMO),[16] incorporating maritime emissions reductions targets. While the EU envisioned progress at COP18 towards an international agreement,[17] it was conscious that neither the Kyoto Protocol[18] nor the Copenhagen Accord had enabled a binding commitment to reduce maritime emissions.[19] Since the deadline passed without the required international agreement, the European Commission (EC) was compelled to propose a new Community law requiring maritime emissions reductions targets, with an aim of it coming into force by 2013.[20]

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14. *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: 20 20 by 2020*: *Europe's Climate Change Opportunity,* at 2, COM (2008) 30 final (Jan. 23, 2008).

15. *See Background on the UNFCCC: The International Response to Climate Change*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/essential_background/items/6031.php (last visited Oct. 17, 2013) (noting "the question of what happens beyond 2020 was answered by Parties in Durban (2011)").

16. *Proposal for a Regulation of the European Parliament and of the Council on the Monitoring, Reporting and Verification of Carbon Dioxide Emissions from Maritime Transport and Amending Regulation (EU) No 525/2013*, at 10, COM (2013) 480 final (June 28, 2013), *available at* http://ec.europa.eu/governance/impact/ia_carried_out/docs/ia_2013/com_2013_0480_en.pdf.

17. *See Doha Conference Must Lay the Foundations for the 2015 Global Climate Deal,* EUR. COMM'N (Nov. 23, 2012), http://ec.europa.eu/clima/news/articles/news_2012112301_en.htm.

18. A binding treaty with obligations for states to stabilize their GHG emissions. Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 10, 1997, 37 I.L.M. 22, *available at* http://unfccc.int/resource/docs/convkp/kpeng.html (Article 2.2 simply calls upon Annex 1 parties to work through the IMO to "pursue limitation or reduction of emissions of greenhouse gases . . . from . . . marine bunker fuels. . . .").

19. *See generally* United Nations Framework Convention on Climate Change Conference of the Parties, Copenhagen, Den., Dec. 7-19, 2009, Decisions Adopted by the Conference of the Parties, FCCC/CP/2009/11/Add.1 (Mar. 30, 2010), *available at* http://unfccc.int/resource/docs/2009/cop15/ eng/11a01.pdf (No mention of maritime emissions was made in the Copenhagen Accord.).

20. Directive 2009/29/EC, *supra* note 7 at 63. *See also* Decision 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the Effort of Member States to Reduce Their Greenhouse Gas Emissions to Meet the

One of the four legal instruments proposed as options to achieve this goal was a maritime emissions tax[21] with hypothecated revenues.[22] Before considering how such a tax could effectively be designed, it is first necessary to summarize why change is required.

III. NEED FOR CHANGE

Aside from fuel costs, the status quo provides little incentive for the maritime industry to shift to a lower emissions model of transportation.[23] Continued failure to account for the negative externalities[24] caused by this sector may fulfill predictions that maritime transport emissions will rise further.[25] The EU's dictum of requiring the polluter to take financial responsibility

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Community's Greenhouse Gas Emission Reduction Commitments Up to 2020, 2009 O.J. (L 140) 136, 136, *available at* http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0136:0148:en:pdf.

21. *See* Public Consultation, Eur. Comm'n, Including Maritime Transport Emissions in the EU's Greenhouse Gas Reduction Commitment, http://ec.europa.eu/clima/consultations/articles/0014_en.htm (last updated Mar. 10, 2013) (noticing of the EC public consultation on the issue to be held until April 2012).

22. *See* ENVIRONMENTAL AUDIT COMMITTEE, THE 2007 PRE-BUDGET REPORT AND COMPREHENSIVE SPENDING REVIEW: AN ENVIRONMENTAL ANALYSIS, 2007-8, H.C. 149-I, at 8-9 (U.K.), *available at* http://www.publications.parliament.uk/pa/cm200708/cmselect/cmenvaud/149/149.pdf (noting that earmarking tax revenues for clear environmental purposes helps reach environmental objectives while increasing taxpayer support for the charge). *See also* ROADMAP, *supra* note 8, at 2.

23. *See Commission Staff Working Paper Annex to: The Communication on Thematic Strategy on Air Pollution and The Directive on "Ambient Air Quality and Cleaner Air for Europe" Impact Assessment,* at 30, COM (2005) 446 final (Sept. 21, 2005), *available at* http://ec.europa.eu/environment/archives/cafe/pdf/ia_report_en050921_final.pdf (estimating that maritime emissions of sulphur dioxide and nitrogen dioxide may be as polluting as the combined impact of the same land-based pollutants by 2020 if no actions are taken). *See also Commission Staff Working Paper Impact Assessment Accompanying the Document: Proposal for a Directive of the European Parliament and of the Council Amending Directive 1999/32/EC as Regards the Sulphur Content of Marine Fuels,* at 6, COM (2011) 439 final (July 15, 2011), *available at* http://ec.europa.eu/environment/air/transport/pdf/ships/sec_2011_918_en.pdf.

24. *See generally* A. C. PIGUO, WEALTH AND WELFARE (1912) (arguing for a corrective use of taxation so as to internalize negative externalities); *but see* R.H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 33-40 (1960) (questioning the use of taxation to internalize externalities); STEVEN N. S. CHEUNG, THE MYTH OF SOCIAL COST (3d ed. 1992).

25. FABER ET AL., *supra* note 9, at 11.

for its pollution[26] can reduce emissions by discouraging[27] harmful business-as-usual practices[28] and instigating a shift towards a more environmentally efficient method of transport.[29] Without it, society is left with the cost for an environmental negativity that, without action, will contribute to the world's progression towards a 4°C average rise in temperatures.[30]

Nevertheless, this article seeks a solution which does not hinder the competitiveness of the maritime sector, but which promotes its development in a sustainable fashion. With the shipping industry struggling financially[31] and host countries unwilling to lose the business of registered vessels which may be re-registered in a state with lighter regulations,[32] there are stark dangers of introducing a measure without clear objectives.

IV. SOLUTIONS: REVENUE NEUTRALITY AND INCENTIVES

To avoid these problems, a revenue-neutral tax can be subject-friendly, allowing it to promote change without necessarily utilizing the maritime sector as a revenue base. While collecting taxes from this industry can be fiscally appealing

26. *See* Consolidated Version of the Treaty on the Functioning of the European Union, art. 191, § 2, 2010 O.J. (C 83) 47, 132. The "Polluter-Pays" principle is exemplified within the Rio Declaration on Environment and Development, which developed a broad understanding of the parties responsible for payment. United Nations Conference on Environment and Development, Rio de Janiero, Braz., June 3-14, 1992, *Rio Declaration on Environment and Development*, U.N. Doc. A/CONF.151/26/Rev.1 (Vol. I), Annex I (Aug. 12, 1992).

27. *See* HER MAJESTY'S TREASURY, STERN REVIEW: THE ECONOMICS OF CLIMATE CHANGE, 308 (2006) (explaining that, "[p]utting an appropriate price on carbon, through taxes [. . .], means that people pay the full social cost of their actions").

28. *See generally* William J. Baumol, *On Taxation and the Control of Externalities,* 62 AM. ECON. REV. 307 (1972).

29. *See* UNITED NATIONS ENV'T PROGRAM, THE EMISSIONS GAP REPORT 2012 32 (2012), *available at* http://www.unep.org/pdf/2012gapreport.pdf (emphasizing the need for low-carbon alternatives).

30. *See generally* THE WORLD BANK, *supra* note 2.

31. Press Release, Moody's, Moody's: Negative Outlook for Global Shipping Industry Due to Oversupply and High Oil Prices (May 31, 2012), *available at* https://www.moodys.com/research/Moodys-Negative-outlook-for-global-shipping-industry-due-to-oversupply--PR_247207.

32. *See* LLOYD'S REGISTER, COP 15 AND THE SHIPPING INDUSTRY 1 (2010), *available at* http://www.lr.org/Images/LRCOP15shippingbriefJan2010_tcm155-175436.pdf.

for policy-makers to raise liquidity for government expenditure, a perhaps more prudent solution in this instance is to design such a tax without the intention of raising revenues.[33] In this way, the environmental objective can be met without direct government expenditure. The objective is completed not by direct government expenditure, but rather via maritime taxpayer investments in low-emissions technology to reduce their overall emissions.[34] The EC's proposed tax option in this instance is to have hypothecated revenues,[35] which means they may retain tax revenues for expenditure on environmental projects.[36] The proposal herein is not to raise revenue for expenditure, but to utilize the revenues to offset losses in other taxes—for which the maritime taxpayer is seeking to have reduced—following their investment in replacement technology.[37]

It may be possible to introduce allowable deductions for such qualifying investments against, for example, corporation tax or tonnage tax.[38] While this may decrease a state's overall tax revenue from those charges, it can provide an additional incentive for taxpayer compliance with the environmental objective. With either method, the burden of the tax may be borne only by those maritime transportation companies who do not make the required shift to emissions abatement technology, and instead

33. *See* DAVID W. PEARCE, ET. AL., BLUEPRINT FOR A GREEN ECONOMY 164 (1989) (advocating the utilization of revenue-neutral taxation to avert climate change, in order to keep the burden on taxpayers from increasing).

34. It is noted that low emissions technology is just one of several methods for meeting an environmental objective.

35. ROADMAP, *supra* note 8, at 2.

36. *See, e.g., Environmental Fund*, DEP'T OF ENV'T, CMTY. & LOCAL GOV'T, (2007), http://www.environ.ie/en/Environment/Waste/EnvironmentFund/ (last visited Oct. 17, 2013) (describing how net revenues from Ireland's plastic bag levy were hypothecated to Irelands' Environment Fund, set up pursuant to The Waste Management (Amendment) Act 2001).

37. *See* APOLLONIA MIOLA ET AL., EUR. COMM'N, REGULATING AIR EMISSIONS FROM SHIPS: THE STATE OF THE ART ON METHODOLOGIES, TECHNOLOGIES AND POLICY OPTIONS 27 (2010), *available at* http://ec.europa.eu/dgs/jrc/downloads/jrc_reference_report_2010_11_ships_emissions.pdf.

38. *See TTM01010 - Introduction to Tonnage Tax: A Brief Guide*, HM REVENUE & CUSTOMS, http://www.hmrc.gov.uk/manuals/ttmmanual/ttm01010.htm (last visited Oct. 17, 2013) (explaining that the United Kingdom's tonnage tax regime "is an alternative method of calculating corporation tax profits by reference to the net tonnage of the ship operated").

suffer the charge in line with the polluter-pays principle.[39] Revenues charged from such non-complying taxpayers may recover some losses in government revenue endured by deductions or allowances in corporation or tonnage tax.

If such budgetary allowances are not affordable in a given situation, then instead, an emissions excise or fixed charge could be introduced. This could be offset or reduced via investments in low emissions or technology, so that the taxpayer has the option to either pay the tax or invest in the technology. An elementary comparison may be drawn with the United Kingdom's Vehicle Excise Duty, which enables motorists to select a low-emissions vehicle with the option of a zero annual tax charge, or to select a higher-emitting vehicle liable for a higher annual rate of tax.[40] Additionally, by incentivizing investment in more efficient maritime technology to reduce emissions, such measures may instigate an advanced benefit of increasing investment in research and development of new technologies.[41] These incentives for companies to minimize taxes can instigate the development of new technologies, thus helping further the environmental gains through possible methods of emissions reductions.[42] By encouraging emissions abatement measures, this type of banding structure is preferable to the United

39. However depending on elasticity, the maritime transport company may be able to pass on the cost to the end user, and therefore final incidence may not be borne by those intended.

40. Vehicle Excise and Registration Act, 1994, c. 22, sch. 1 (Eng.).

41. *See* HM TREASURY, SUPPORTING GROWTH IN INNOVATION: ENHANCING THE R&D TAX CREDIT 21 (2005) (U.K.), *available at* http://www.hmrc.gov.uk/consult_new/rd-taxcredit.pdf.

42. For instance where there are bands of tax deductions similar in concept to Vehicle Excise Duty, taxpayers may seek to avoid higher bands by purchasing technologies suitable to lower bands. The U.K.'s Finance Act of 2001 introduced the possibility of a zero annual charge, despite there being no vehicles on the market at the time with suitably lower emissions to achieve such a charge. Nevertheless such vehicles were subsequently introduced onto the market, whilst other high emitting vehicle manufacturers produced lower emitting vehicles to attract buyers wishing to mitigate their annual charge. *See, e.g., Range Rover Evoque,* LAND ROVER, http://www.landrover.com/us/en/lr/range-rover-evoque/explore/range-rover-evoque/ (follow "Engine" hyperlink) (last visited Oct. 17, 2013) (comparing the lower engine size of the Range Rover Evoque with traditional Range Rover models).

Kingdom's rudimentary Air Passenger Duty,[43] which simply charges per distance travelled rather than per emissions, thus failing to incentivize a shift in technology.[44]

If such measures can be introduced in a manner not designed to raise revenue but to encourage required changes, then it may enable the intention of protecting commercial interests and retaining competitiveness—by not adding to the overall costs of maritime transport companies—while achieving the environmental objective through incentivizing private sector implementation of emissions abatement measures. There may also be further benefits, including possible economic benefits of promoting a state's shipbuilding industry, plus environmental and industry cost-saving benefits of reduced fuel costs. It is estimated that $310 billion in fuel costs can be saved by 2030 with increased fuel-efficient technology resulting from IMO measures.[45] For policy-makers, the revenue-neutral approach can have the attractive option of enabling expenditure-free[46] achievement of environmental positivity.[47]

V. LIMITATIONS

Having established the basic premise for a revenue-neutral tax to promote technological improvements to achieve maritime emissions abatements, the possible limitations of introducing such a proposed tax are considered and feasible means of overcoming them are discussed.

43. Finance Act, 1994, c. 9, §§ 28-44, sch. 6 (Eng.), *available at* http://www.legislation.gov.uk/ukpga/1994/9/pdfs/ukpga_19940009_en.pdf.

44. *See* Jon M. Truby, *Reforming the Air Passenger Duty as an Environmental Tax*, 12 ENVTL. L. REV. 94, 102 (2010) (U.K.).

45. *Report Shows Significant Reductions in Shipping's CO2 Emissions from IMO Measures*, CARBON POSITIVE, http://www.carbonpositive.net/industry-updates/339-report-shows-significant-reductions-in-shippings-co2-emissions-from-imo-measures.html (last visited Oct. 17, 2013).

46. Magnus S. Eide et al., *Future Cost Scenarios for Reduction of Ship CO_2 Emissions*, 38 MAR. POL'Y & MGMT. 11, 11 (2011).

47. Francisco J. André et al., *Performing an Environmental Tax Reform in a Regional Economy. A Computable General Equilibrium Approach,* 39 ANNALS REG'L SCI. 375, 376 (2005) (noting "if a double dividend exists, it is possible to improve the environmental quality without any cost in terms of non-environmental economic welfare").

A. Type of Tax and International Rules

It is important to distinguish the proposed emission tax[48] from any sort of tax on marine fuel such as an excise tax, which would not be permissible, at least for EU Member States.[49] A vessel emissions tax option raised in an EC report suggests taxing "emissions weighted by sea region and distance from shore."[50] This approach was found to be the best option in terms of environmental and economic efficiencies, though difficulties in administering and monitoring such emissions were noted.[51] An effective design may be in the form of an en-route emissions charge on vessels,[52] which would provide an incentive to reduce the regular level of emissions for each trip, so as to reduce the charge.

Such emissions tax measures however have not been fully tested by the courts, and may face legal challenges pursuant to the right to innocent passage of foreign vessels[53] under the United Nations Convention of the Law of the Sea (UNCLOS) agreement.[54] Article 26 prohibits charges levied on foreign ships

48. Defined as "payments on direct releases into the environment, based on pollutant characteristics and on the quantity of discharges." MARKET-BASED INSTRUMENTS FOR ENVIRONMENTAL MANAGEMENT: POLITICS AND INSTITUTIONS 4 (Mikael Andersen & Rolf-Ulrich Sprenger eds., 2000).

49. Directive 92/81/EEC of the European Council of 19 October 1992 on the Harmonization of the Structures of Excise Duties on Mineral Oils, 1992 O.J. (L 316) 12, 14, *available at* http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri =OJ:L:1992:316:0012:0015:EN:PDF (prohibiting EU Member States from taxing marine fuels). *See also* Directive 2003/96/EC of the European Council of 27 October 2003 on Restructuring of the Community Framework for the Taxation of Energy Products and Electricity, 2003 O.J. (L 283) 51, 56, *available at* http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri= OJ:L:2003:283:0051:0070:en:pdf (prohibiting EU Member States from introducing taxes on non-domestic shipping pursuant to Article 14).

50. DAVID HARRISON, JR. ET AL., EVALUATION OF THE FEASIBILITY OF ALTERNATIVE MARKET-BASED MECHANISMS TO PROMOTE LOW-EMISSION SHIPPING IN EUROPEAN UNION SEA AREAS 3 (2004), *available at* http://ec.europa.eu/ environment/air/pdf/04_nera_report.pdf.

51. *Id.* at 7.

52. *See id.* at 11.

53. *Id.* (explaining Part 2, Section 3, of UNCLOS).

54. *See generally* United Nations Convention on the Law of the Sea, Dec. 10, 1982, 1833 U.N.T.S. 397, *available at* http://www.un.org/Depts/los/ convention_ agreements/texts/unclos/unclos_e.pdf.

"by reason only of their passage through the territorial sea,"[55] but permits non-discriminatory charges "as payment only for specific services rendered to the ship."[56] Emissions charges are unlikely to be classified as services. Equally, they may not be regarded as charges purely for passage through a state's waters since they are for an environmental purpose rather than a charge for the right of entry. Nevertheless, the ambiguity may prevent legislatures from enacting a taxation measure that may result in expensive, time-consuming, and potentially politically embarrassing legal challenges that may be overturned.[57]

B. Leakage

A further legitimate reason for not implementing marine fuel excise taxes is to mitigate the risk of leakage, whereby maritime transporters switch fuelling purchases to retailers in non-taxing jurisdictions.[58] This example exerts caution to the present, similar situation of implementing maritime emissions taxation where it is important to avoid causing tax leakage, whereby maritime transportation companies avoid such a tax by re-registering in non-charging or low rate jurisdictions and thus providing less-environmentally proactive states with an economic benefit of added business.[59] Lloyd's Register emphasizes the simplicity by which vessels can re-flag to other states, mainly to developing countries.[60] Re-registration may allow the avoidance

55. *Id.* at art. 26(1).

56. *Id.* at art. 26(2).

57. Nigeria's gross tonnage levy, pursuant to Marine Environment Management (Sea Protection Levy) Regulation, treats foreign-flagged vessels differently from Nigerian-flagged vessels, and poses a risk of being challenged under UNCLOS Part II, Section 3, Article 26(2). *See Shipping & Transport – Nigeria: New Marine Environment (Sea Protection) Levy for Ships*, INT'L L. OFFICE (Oct. 10, 2012), http://www.internationallawoffice.com/newsletters/detail.aspx?g=c0fc3aec-4f10-4d56-86dc-f025d12da09f.

58. *See generally* Piet Rietveld et al., *Spatial Graduation of Fuel Taxes; Consequences for Cross-Border and Domestic Fuelling*, 35 TRANSP. RES. 433 (2001).

59. Jon M. Truby, *Towards Overcoming the Conflict Between Environmental Tax Leakage and Border Tax Adjustment Concessions for Developing Countries,* 12 VT. J. ENVTL. L. 149, 164-65 (2010); *see* Directive 2009/29/EC *supra* note 7, at 8.

60. LLOYD'S REGISTER BRIEFING, *supra* note 32, at 1.

of national shipping regulations, charges, or taxes.[61] This risk is highlighted by the EC, which emphasizes that "Member States at individual level have been reluctant to develop legislation to reduce emissions in this area as it may lead to reduced business for their ports without a corresponding increase in environmental integrity."[62] The significant danger of such leakage, to avoid any maritime emissions taxation, reinforces the justification for a revenue-neutral tax model that can be attractive for companies to participate in, and the need for a multi-lateral effort to solve this so that a state does not lose out economically through unilateral measures.[63]

One potential means of overcoming competitiveness concerns is to utilize border tax adjustments upon imports from states not introducing similar environmental measures. However, in addition to the complexity of its administration and potential harm to world trade,[64] in the case of shipping, this—depending on the bargaining strength of the state—may neither bring worthwhile financial return nor encourage states enjoying the benefits of increased port action to introduce similar environmental measures.[65]

C. State Aid

Finally, the proposed revenue-neutral model, which encourages investments in sustainable marine transportation technology, may be deemed to favor a shipbuilding nation by offering such goods or services, and be regarded as a form of state

61. *See generally* Ronald Becerra Rodríguez, *Flags of Convenience Regulation within the European Union and its Future on International Trade,* 11 REVISTA REPUBLICANA 15, 16 (2011).

62. ROADMAP *supra* note 8, at 2.

63. *See* Anna Mellin & Hanna Rydhed, *Swedish Ports' Attitudes Towards Regulations of the Shipping Sector's Emissions of CO_2*, 38 MAR. POL'Y & MGMT. 437, 441 (2011) (Swed.).

64. *See* Gilbert E. Metcalf & David Weisbach, *The Design of A Carbon Tax*, 33 HARV. ENVTL. L. REV. 499, 551 (2009).

65. PER KÅGESON ET AL., MARKET BASED INSTRUMENTS FOR ABATEMENT OF EMISSIONS FROM SHIPPING: A PILOT PROJECT FOR THE BALTIC SEA 81 (Katharina Koppe & Falk Heinen eds., 2008), *available at* http://www.isl.org/sites/default/files/projects/mbi/3852.pdf (noting that in the similar situation of port charges, "the fairway dues are in most cases not large enough to allow for an environmental differentiation that reflects the difference in emissions among ships").

aid. EU rules[66] on state aid do allow some incentives for environmentally efficient ship models, but the risk of a legal challenge remains.[67]

VI. EU ETS

While the scope of the EU market means that a Union-wide measure could have a considerable impact within the Union and be influential outside of it, the EU is actually limited in its options to introduce a measure that can have the desired impact and be legitimate.[68] Despite the feasible impact of a possible maritime emissions tax as discussed, the sovereignty of each Member State over its own tax affairs prevents the EU from introducing EU-wide taxes.[69] Thus, the EU ETS has been a carefully contemplated market-based measure, designed in part to avoid the illegitimacy of being an EU imposed tax, and has successfully defeated legal challenges to prove that it is not an illegal charge under international law.[70] Though the comparative efficiencies are not considered herein, its ability to incentivize change in a similar manner as a revenue-neutral tax discussed are not doubted.[71]

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66. *See generally* Commission Communication C(2004) 43 Community Guidelines on State Aid to Maritime Transport, 2004 O.J. (C 13) 3, *available at* http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2004:013:0003:0012:en:pdf.

67. *See* Iliana Christodoulou-Varotsi, *A Maritime Competition Reading of Regulation 1408/71/EC on the Co-ordination of Social Security Systems in the European Union: Is the Current Regime Out-of-Date?, in* COMPETITION AND REGULATION IN SHIPPING AND SHIPPING RELATED INDUSTRIES 207, 219-20 (Antōnios M. Antapasis, Lia I. Athanassiou, & Erik Røsæg eds., 2009); MARK CLOUGH & FERGUS RANDOLPH, SHIPPING AND EC COMPETITION LAW 284-85 (1991).

68. *See generally* Henrik Ringbom, *Global Problem—Regional Solution? International Law Reflections on an EU CO_2 Emissions Trading Scheme for Ships*, 26 INT'L J. OF MARINE & COASTAL L. 613 (2011) (explaining ETS and discussing options).

69. *See* MATHIEU ISENBAERT, EC LAW AND THE SOVEREIGNTY OF THE MEMBER STATES IN DIRECT TAXATION 452 (2010).

70. *See* Jon Truby, *Extraterritoriality or an Illegal Tax? A Challenge to the Inclusion of Aviation in the EU Emissions Trading Scheme*, 14 ENVTL. L. REV. 301, 305 (2012) (U.K.).

71. Markus Lederer, *Market Making Via Regulation: The Role of the State in Carbon Markets*, 6 REG. & GOVERNANCE 524, 529 (2012); *see generally* Mustafa Babiker et al., *Is International Emissions Trading Always Beneficial?*, 25 ENERGY J. 33 (2004).

The attraction of a maritime emissions tax fades against this option, since it faces risks of legal challenges, leakage, and competitive disadvantages. Further, since only individual states are empowered to enact tax measures, it lacks the same influential impact for environmental improvement as a tax made by the EU at Union level. The EU ETS' ability to initiate this environmental change in the entire EU would be a game-changer, for the maritime emissions of EU registered ships as well as any such ships utilizing EU waters.[72]

VII. CONCLUSION

Consequently, the inclusion of maritime transportation emissions in the EU ETS remains a more attractive option as opposed to a maritime emissions tax.[73] With reduced complexity and fewer potential legal challenges, the framework for the EU ETS already exists, and the transition to include maritime emissions would thus be relatively straightforward and can be enacted centrally rather than locally. The EU has already experimented with this preferred option with air transport, having legally defeated the same extraterritoriality arguments from non-EU states that the inclusion of maritime emissions in the EU ETS would face.[74] Though it faced external political

72. Despite winning a lengthy legal battle to prove that the inclusion of aviation in the EU ETS was not contrary to international law, the EU has proposed the temporary suspension of the inclusion of non-EU aircraft into the EU ETS, pending an international agreement on the matter by the International Civil Aviation Organisation. *Proposal for a Decision of the European Parliament and of the Council Derogating Temporarily from Directive 2003/87/EC of the European Parliament and of the Council Establishing a Scheme for Greenhouse Gas Emission Allowance Trading within the Community*, at 3, COM (2012), 697 final (Nov. 20, 2011).

73. There also remains the unexplored option of utilising border tax adjustments as mentioned above to support tax measures, to support any reduction of competitiveness caused by the EU ETS. *See generally* Ronald Ismer & Karsten Neuhoff, *Border Tax Adjustment: A Feasible Way to Support Stringent Emission Trading*, 24 EUR. J.L. & ECON. 137 (2007); Javier de Cendra, *Can Emissions Trading Schemes be Coupled with Border Tax Adjustments? An Analysis vis-à-vis WTO Law*, 15 REV. EUR. CMTY. & INT'L ENVTL. L. 131 (2006).

74. *See* Jon Truby, *Extraterritoriality or an Illegal Tax? A Challenge to the Inclusion of Aviation in the EU Emissions Trading Scheme*, 14 ENVTL. L. REV. 301, 305 (2012) (U.K.).

pressure to end the scheme,[75] the inclusion of both EU and non-EU airlines in the EU ETS, provided sufficient global pressure to ensure that the International Civil Aviation Organization eventually agreed to implement—by 2020—a new global market-based mechanism to aviation emissions—a major success for the EU following decades of inaction by the organization.[76] Thus the global political implications of including maritime emissions in the EU ETS could be far wider reaching than just the EU, potentially ensuring the issue is taken seriously at a global scale.

75. Barbara Lewis & Valerie Volcovici, *Insight: U.S., China Turned EU Powers Against Airline Pollution Law*, REUTERS, (Dec. 10, 2012, 7:08 AM), http://www.reuters.com/article/2012/12/10/us-eu-airlines-climate-idUSBRE8B801H20121210.

76. Int'l Civil Aviation Org. [ICAO], *Assembly—Thirty-Eighth Session Report of the Executive Committee on Agenda Item 17 (Section on Climate Change)* at 17-6, ICAO Doc. A38-WP/430 (Mar. 10, 2013), *available at* http://www.icao.int/Meetings/a38/Documents/WP/wp430_en.pdf; *see* *Reducing Emissions from Aviation: Inclusion of Aviation in the EU ETS*, EUR. COMM'N, (Oct. 23, 2013), http://ec.europa.eu/clima/policies/transport/aviation/.