Can Slow Steaming be the Solution to Shipping Emissions?

The shipping industry contributes about 3% to global greenhouse gas (GHG) emissions. Container ships are responsible for approximately 20% of those emissions. Slow steaming, traveling of freight ships at reduced speeds, has been widely implemented since the 2008 financial crisis. Slow steaming shipping companies benefit from cost savings - a 10% speed reduction reduces fuel consumption by 20%; the world benefits from reduced carbon pollution - between 2008 and 2012 emissions dropped by about 13%. Moreover, a ship traveling at a lower speed creates less underwater noise pollution and significantly reduces the risk of harming marine mammals. Although slow steaming has many benefits, it cannot be the only solution. Achieving emission reductions in line with climate goals requires more effective policies, regulations, adoption of green technologies and vessel designs.

Slow Steaming Example: 4000 TEU Container Ship

Speed Type	Speed in knots (kn)	Percent Speed Reduction	Fuel Consumption (tons/ day)
Full Speed	24	-	182
Slow Steaming	17 - 18	27%	85

Incomplete Overview of Regulatory Frameworks

	Dates	Resolution	Goal
United Nations Framework Convention on Climate Change	2015	Paris Agreement (excluded the shipping industry)	Limit Global Warming to between 1.5C and 2.0C
International Maritime Organization (IMO)	2003	Resolution A.963	Use technical, operational, market-based means to reduce emissions (no specific emissions target)
MARPOL Convention	2011	Annex VI Prevention of Air Pollution from Ships GHG Charter	Mandatory technical and operational energy efficiency measures
International Maritime Organization (IMO)	2018	MEPC.304(72)	Reduce emissions through efficient ship designs, speed & trip optimization
International Maritime Organization (IMO)	2023		Revisiting of emissions targets, regulatory measures

References

https://digital.hbs.edu/platform-rctom/submission/maersk-feeling-slow-steamed-by-regulators/

https://container-xchange.com/blog/slow-steaming/

https://link.springer.com/article/10.1057/mel.2013.2

https://splash247.com/new-report-claims-slow-steaming-is-closest-thing-to-a-silver-bullet-for-imo/

Cariou, P. (2011, January 21). Is slow steaming a sustainable means of reducing CO2 emissions from container shipping? Retrieved January 17, 2021, from https://www.sciencedirect.com/science/article/abs/pii/S1361920910001690

Wan, Z., Makhloufi, A., Chen, Y., & Tang, J. (2017, December 22). Decarbonizing the international shipping industry: Solutions and policy recommendations. Retrieved January 17, 2021, from https://www.sciencedirect.com/science/article/abs/pii/S0025326X17310214

Mander, S. (2016, April 22). Slow steaming and a new dawn for wind propulsion: A multi-level analysis of two low carbon shipping transitions. Retrieved January 17, 2021, from https://www.sciencedirect.com/science/article/pii/S0308597X16301300

Barbara Bengtsson, January 2021