

Revisiting the Role of International Shipping for Energy Security: A Research Agenda for Europe's Strategic Transformation

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Extended Abstract

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Abstract Summary

International shipping carries the vast majority of globally traded LNG, crude oil, refined products, and the critical minerals underpinning the energy transition, making maritime infrastructure a foundational, yet underappreciated, dimension of energy security. Recent events have forced a reassessment of this relationship. The 2023–2024 Houthi attacks in the Red Sea, the uncertainty surrounding the Strait of Hormuz, after the Israel and US attacks on Iran, the Ever Given grounding, and the post-2022 reconfiguration of Russian energy flows have each demonstrated how geopolitical shocks to maritime corridors translate rapidly into supply volatility, price pressure, and strategic exposure for energy-importing economies. Europe, simultaneously pursuing decarbonisation, rearmament, and strategic autonomy, is particularly exposed to these dynamics, as its dependence on maritime supply chains for both fossil fuels and green technology inputs deepens.

Yet standard energy security frameworks have not kept pace with this reality. They treat shipping as a logistical background condition rather than as a critical infrastructure system that is itself subject to disruption, innovation, and geopolitical contestation. This paper argues that an innovation and resilience lens is necessary to capture how energy firms, infrastructure operators, and policymakers actually respond to maritime vulnerability, and how those responses generate new capabilities, business models, and governance arrangements.

Building on a structured synthesis of innovation systems scholarship, critical infrastructure resilience research, and EU industrial policy, the paper proposes a research agenda organised around four questions: how energy firms innovate in response to maritime disruption; how Europe's decarbonisation and rearmament agendas create structural tensions over critical resources; how EU instruments such as REPowerEU, the Critical Raw Materials Act, and the European Defence Industrial Strategy govern the security-innovation trade-off; and how firms build preparedness as a strategic organisational capability under conditions of sustained geopolitical danger.

Presenting Author Biography

Michele Acciaro is Associate Professor at the Department of Strategy and Innovation of the Copenhagen Business School. He holds a BSc and a MSc (cum Laude) in Statistics and Economics from the University of Rome "La Sapienza"; a MSc in Economics and a PhD from Erasmus University Rotterdam. Previously he worked for Erasmus University in the Netherlands, DNV in Norway, and Kuehne Logistics University in Germany. His research interest are energy transition, shipping, ports and transport, alternative fuels, resilience, climate change and geopolitical risk.