Clean Maritime Policy Unit

POLICY BULLETIN

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Regional Ports – economic and emissions advantages

Ports and shipping are subject to increasing pressure to decarbonise. This provides opportunities to reconsider shipping routes and to enhance port competitiveness. This bulletin provides an overview of an economic and environmental impact assessment of rerouting Asia-Europe deep sea container ships via the Port of Liverpool as a case study.

Container shipping routes are often formed and changed due to strategic alliances. Choice of port is determined not only by location, but port tariffs, port infrastructure, cargo volume, inland distance, intermodal connectivity, port productivity, port portfolio and environmental issues.

Regional ports, despite being located off mainstream shipping routes, fulfil important logistical functions due to their proximity to regional hinterlands and transshipment markets. This can lead to overall logistical advantages in terms of total costs and environmental impact.

This research appraises the economic costs and environmental impacts in a low carbon world using a scenario-based approach across container shipping supply chains, including deep-sea services, port operations, feeder services, and inland rail or road transport. The three scenarios that were explored:

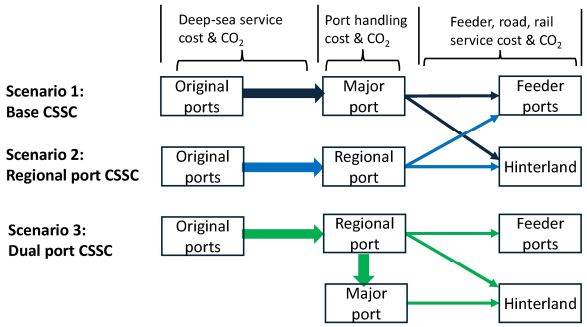

Figure. *Three container shipping supply chain (CSSC) scenarios*

Scenario 1 is the "business as usual" case where the Asia-Europe route uses the UK major Port of Southampton. Scenario 2 is where Port of Southampton is replaced with the regional Port of Liverpool. Scenario 3 is a dual port strategy where the Asia-Europe route calls at both the regional Liverpool port and the major Southampton port.

Subject to several assumptions it was found that:

- Port economic and environmental competitiveness is influenced by slow steaming practices, hinterland shipment volume, and modal shift at regional ports.
- Scenarios 2 and 3 offer economic advantages over the base scenario in almost all test cases and scenario 3 is environmentally advantageous depending on vessel speed, hinterland volumes, marine fuel emission factor and rail usage at the regional port.
- A dual port strategy (scenario 3) offers more economic benefits than scenario 2 and better environmentally compared with the base scenario.

POLICY IMPLICATIONS

Rerouting deep-sea container shipping to include regional ports can lead to economic and environmental benefits when appraising the wider container supply chain system.

These findings could support a place-based policy strategy to promote the use of regional ports in deep-sea container shipping. This would lead to lower logistics costs and lower emissions contributing to achieving national decarbonisation targets.

RESEARCH PUBLICATION

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