

Green Shipping Corridors in the Baltic: status, barriers, and the path forward

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Shipping contributes to about 3% of total anthropogenic greenhouse gas (GHG) emissions. In response, the International Maritime Organization's revised GHG strategy aims to reduce emissions from international shipping by at least 20% by 2030, 70% a decade later, ultimately reaching net-zero around 2050. Decarbonizing seaborne trade requires an accelerated transition to fossil-free fuels, e.g., electricity, biofuels, and renewable hydrogen and its derivatives such as ammonia and electro-methanol. This is true both globally and around the Baltic, a region that has been actively involved in unpacking the Green Shipping Corridor (GSC) concept, a potential enabler for the maritime fuel transition.

The Clydebank Declaration, launched at the COP26 Climate Conference in Glasgow in 2021, is an international initiative to speed up shipping decarbonization through the development of Green Shipping Corridors (GSCs). GSCs are defined as zero-emission maritime routes between two or more ports, where at least one vessel operates on fuel that achieves net-zero GHG emissions on a life-cycle basis, accounting for emissions associated with production, distribution, and use. **The Declaration commits the 27 signatory countries** – including Denmark, Finland, Germany, Lithuania, and Sweden – to collaborate in establishing at least six GSCs by 2025. Remarkably, five years after its launch, the idea still resonates across the world of transport and logistics.

What's green already/soon

Numerous GSC initiatives are underway worldwide, with the Baltic Sea region

clearly at the forefront of this development. **According to the Global Maritime Forum**, two out of four GSCs that reached the officially recognized realization stage (vessels and infrastructure either operational or being built/retrofitted) are here: the Vaasa-Umeå and Stockholm-Turku ferry crossings. Just outside the region's borders, there's another one: between Oslo and Rotterdam (and Gothenburg is also eyeing a GSC with the Dutch seaport as well as with the Belgian Ghent or Zeebrugge). A GSC between Lübeck and Trelleborg is also on the table, as is one between Estonia and Finland (Tallinn-Helsinki most probably).

In August 2025, the Vaasa-Umeå corridor became the very first operational GSC, as announced by Wasaline, which plies with its *Aurora Botnia* ro-pax on this world's northernmost regular ferry route. The vessel uses biomethane under a mass-balance agreement with Gasum and has substantial battery capacity (recently

upgraded from 2.2 to 12.6MWh; Kvarken Ports, the port authority of Vaasa-Umeå, also provides onshore power supply at both ends of the Finnish-Swedish corridor). Similarly, Viking Line runs gas-powered cruise ferries on the Stockholm-Turku crossing, using biomethane on a 50% drop-in basis. In these cases, no major investments in new bunkering infrastructure or vessel modifications were required. The Oslo-Rotterdam GSC will be very different, as Samskip has ordered two hydrogen-capable container ships here.

Meanwhile, in the spring of 2024, X-Press Feeders and six North European ports – Antwerp-Bruges, HaminaKotka, Helsinki, Klaipėda, Riga, and Tallinn – joined forces to establish two North Sea-Baltic green (methanol) corridors. The Green Baltic X-PRESS (GBX) service connects the ports of Rotterdam, Antwerp-Bruges, Klaipėda, and Riga (two vessels in the 1,036-1,250 TEUs range). The Green Finland X-PRESS



Photo: Gasum/Wasaline

(GFX) loop links Rotterdam, Antwerp-Bruges, Helsinki, Tallinn, and HaminaKotka (a pair of 1,250-TEU feeders).

Through the Nordic Council of Ministers, regional stakeholders are collaborating to establish GSCs in Northern Europe. As part of this effort, **the Nordic Council of Ministers funds the Nordic Roadmap for the Introduction of Sustainable Zero-Carbon Fuels in Shipping programme.** Its second phase (2026-27) focuses on the implementation and realization of GSCs and the uptake of low-carbon alternative maritime fuels in the Nordics. It seeks to support the development of several corridor consortia. Six of these have recently been selected to receive technical, commercial, and/or organizational support. They were picked based on their maturity, likelihood of deployment, stakeholder commitment, geographical spread, and ability to advance learning across various fuels and ship segments.

Barriers and support

Key obstacles for GSC development are consistent across the Nordic-Baltic region: costs of bunker, fuel storage, and propulsion machinery; limited availability of renewable fuels, bunkering infrastructure (on- and offshore), and handling know-how thereof; lack of customer demand for green shipping services; safety concerns; complex multi-stakeholder and cross-border coordination; and insufficient policy instruments tailored to advance GSCs.

To promote low-carbon fuels, the EU has introduced several policy instruments, including the FuelEU Maritime Regulation and the inclusion of shipping in the EU

Emissions Trading System. In addition, the Alternative Fuels Infrastructure Regulation requires ports to develop infrastructure for new maritime fuels and shore-side electrification. FEUM aims to progressively reduce the fleet-level GHG intensity of marine fuels until mid-century. Its pooling mechanism allows ships to combine their compliance performance, enabling vessels that outperform the GHG intensity target to offset those that fall short. This can support the uptake of low-carbon bunkers on selected routes, as showcased in the Vaasa-Umeå corridor (which was likely a contributing factor to Stena Line's takeover of Wasaline and its 'FEUM compliance-generator' ferry). The Samskip Oslo-Rotterdam GSC highlights the importance of public funding, among others, grants for newbuilds. However, the high cost of (green) hydrogen will remain a major challenge without measures like subsidies or a carbon tax on marine fuels.

Currently, there are no dedicated financial instruments or regulatory frameworks for GSCs at either national or EU level (that's

maybe why X-Press Feeders' methanol services do not carry the official GSC designation, as it gives no access to publicly 'monetizing' the concept – at least not yet). Such support mechanisms are needed to reduce the fuel price gap and facilitate the uptake of more expensive renewable marine fuels.

From ambition to implementation

The Baltic Sea represents a seedling bed for further GSC development, not only those involving ferries or container feeders as things stand today. Several regional ports are actively investigating the development of bunkering infrastructure for future fuels. In addition, numerous renewable fuel production projects are planned in the region (particularly methanol), and there is considerable experience in using renewable bunkers (especially biomethane, most likely 'the' stepping stone for other GSCs in the region). To move from ambition to implementation, GSCs must identify tangible pathways to close the fuel cost gap. Policy support, from the EU or individual governments, could prove valuable as well. ■

The BalticSea-GSC: Building Capacity for Green Shipping Corridor Development in the Baltic Sea Region is a seed funding project running from October 2025 to September 2026. It is funded by the Swedish Institute Baltic Sea Neighbourhood Programme and is led by IVL Swedish Environmental Research Institute, in partnership with the Baltic Ports Organization and the Port of Klaipėda. The project's core activities include identifying the most promising shipping segments, fuel types, and routes for a follow-up GSC project in the Baltic Sea; expanding the partnership across the maritime value chain; developing a project concept and identifying relevant EU funding calls for the next phase; and mapping financial and regulatory instruments supporting GSC in Estonia, Lithuania, and Sweden. BalticSea-GSC is explicitly positioned as a launchpad toward a larger transnational EU-funded initiative. The project welcomes engagement from all organizations interested in contributing to GSC development in the Baltic Sea region and beyond. Visit ivl.se/english to learn more about the project.