

Concept note

Project Title:

GSCNet-Optimizer: Software-as-a-Decision-Support-System (SaaS) for Green Shipping Corridor Network Optimization

Problem Statement:

Of the 84 announced Green Shipping Corridor (GSC) initiatives, only 4 have reached realization, 12 are in preparation, 44 remain in exploration, and 24 are at initiation. The core barrier is the absence of a data-driven, evidence-based framework for policy-aligned, demand-aware, and cost-effective GSC network decision-making. No tool currently aligns GSCs with international regulations (IMO MEPC 81, EU ETS, FuelEU Maritime), with diverging national policy mandates, or with real-life circumstances—market conditions, future shipping demands. Decisions therefore rely on months-long manual processes, producing redundant investments and economically unviable corridors.

Objective:

To develop GSCNet-Optimizer, an ML- and optimization-empowered Software-as-a-Decision-Support-System (SaaS) platform that: (i) analyzes all 84 announced GSC initiatives; (ii) designs a policy-aligned, demand-aware, cost-minimized, and fully implementable GSC network; and (iii) provides a digital sandbox for stress-testing network designs under real-life conditions.

Requirements:

We are seeking partners with expertise in one or more of:

- Renewable maritime fuels: Techno-economic characteristics and bunkering requirements of renewable maritime fuels (e.g., methanol, ammonia, hydrogen, LNG, and electricity—shore power); fuel-type and vessel-type compatibility; fuel burning ratios; lifecycle emissions; availability and scalability constraints for bunkering stations.
- Policy-making: International maritime regulations (e.g., IMO MEPC 81 guidelines, EU ETS, FuelEU Maritime) and national maritime strategies.
- Software engineering: Web-based platform development; API integration; interactive visualization (e.g., maps, dashboards); scalable system design.
- Maritime economics: Cost modeling; investment appraisal; supply-demand analysis; market-based measures.
- End-users: In the context of Lean Cycle Philosophy, any type of end-users/stakeholders-holders (e.g., policymakers, government officials, international organization coordinators, port authorities, shipping operators, vessel owners, investors, large-scale funding agency specialists).