Insights from maturing a global portfolio of green shipping corridors

Mærsk Mc-Kinney Møller Center
for Zero Carbon Shipping

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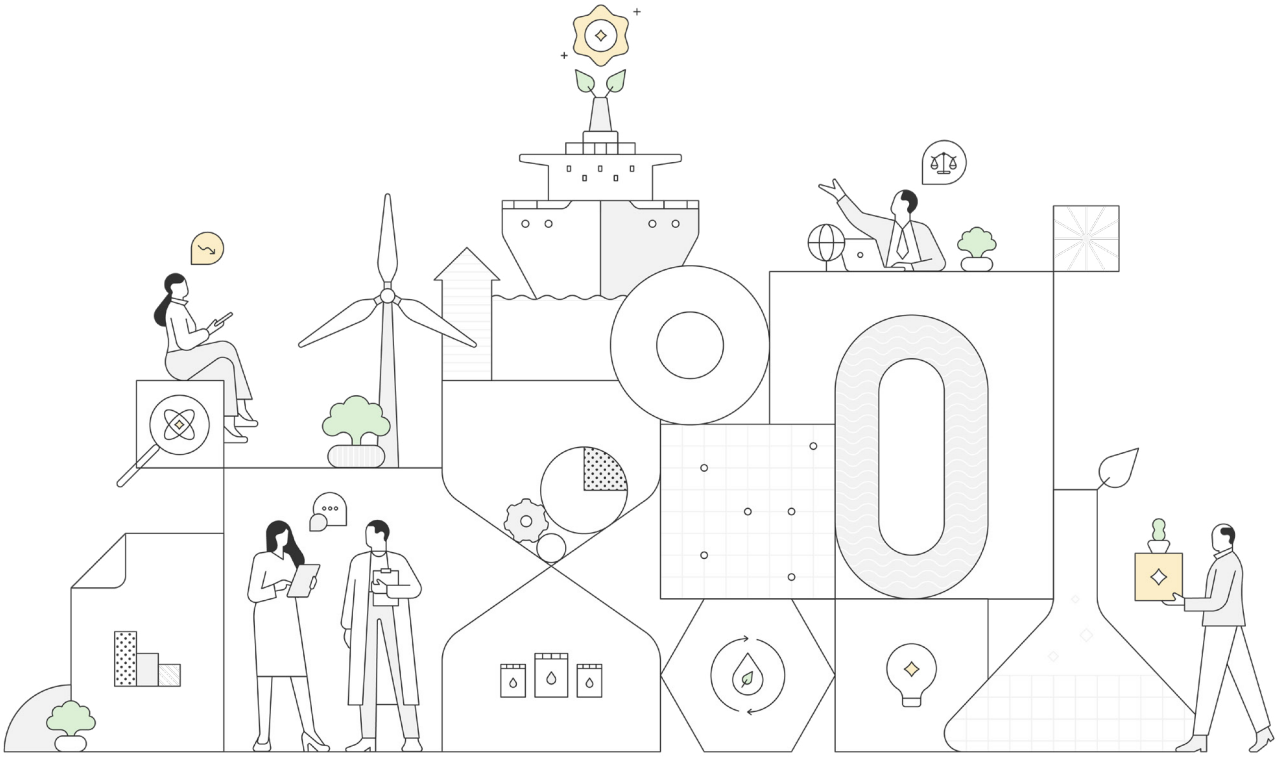


Summary

This paper builds primarily on insights and findings extracted from more than 20 green shipping corridor projects led by the Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping (MMMCZCS)[1] following the 2021 Clydebank Declaration, as well as from dialogue with strategic partners and ecosystem members. It provides a summary of learnings and enabling factors from some of the most developed green shipping corridor projects with the aim of inspiring and supporting the success of all corridor initiatives. In addition to highlighting project learnings, the paper calls upon all stakeholders to accelerate the implementation of the corridors and provides a fact base and potential solutions for how to make these corridors a reality in the coming years, as pledged in the Clydebank Declaration.

Green shipping corridors are routes where commercial vessels operate using alternative low-emissions fuels, or other means of low-carbon propulsion, such as electricity.

Widespread adoption of green solutions in the maritime ecosystem is challenging due to highly priced alternative fuels, extensive investment requirements, first-mover disadvantages, a lack of transparency around how to drive early adoption, and a complex stakeholder landscape.

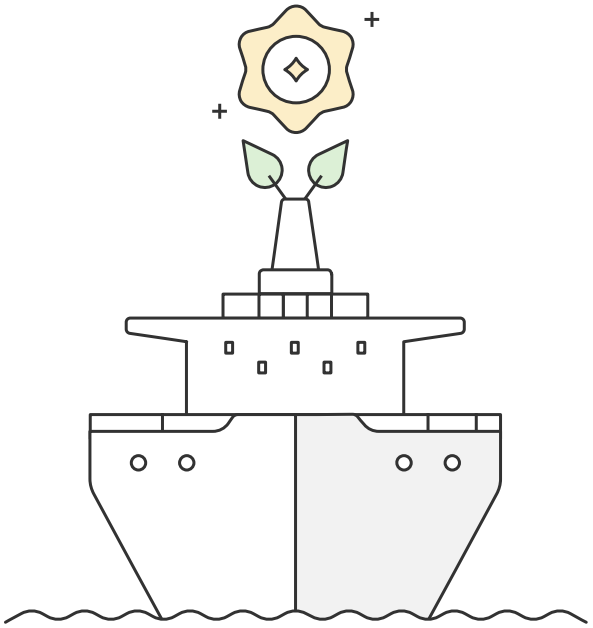
Corridors are a catalyst to accelerate the transition before decarbonization projects become commercially viable. The corridors can help mature the maritime deployment of green solutions by contributing to future cost-downs, enabling coordinated pace of investments, providing sandboxing and reducing complexity.

The potential of green shipping corridors was first recognized by the Clydebank Declaration, whose signatories set a collective ambition to establish at least six corridors by the middle of the decade.

There are several noteworthy examples of corridors with line of sight to operation. These are characterized by successful value chain collaboration and active investigation of measures to close the cost gap, showing that challenges can be overcome to enable maritime decarbonization.

Value chain collaboration and the ability to cover the cost gap is required for green corridors to become operational. A stringent methodology enables collaboration. Similarly, it is easier to collaborate if the project has low complexity. Several measures, when combined, may close the cost gap. These include optimized financing, regulation, an end-customer green premium, value chain cost management, and public funding.

Green shipping corridors inform regulatory bodies and funding instruments. By demonstrating that the zero- and near-zero-emissions (ZNZ) fuels for the 2050 fuel mix are doable, the green corridors provide an important backbone for further regulation and pricing of CO_2. At the same time, the individual green corridor projects are ready for allocation of funding for either parts of, or the full value chain.

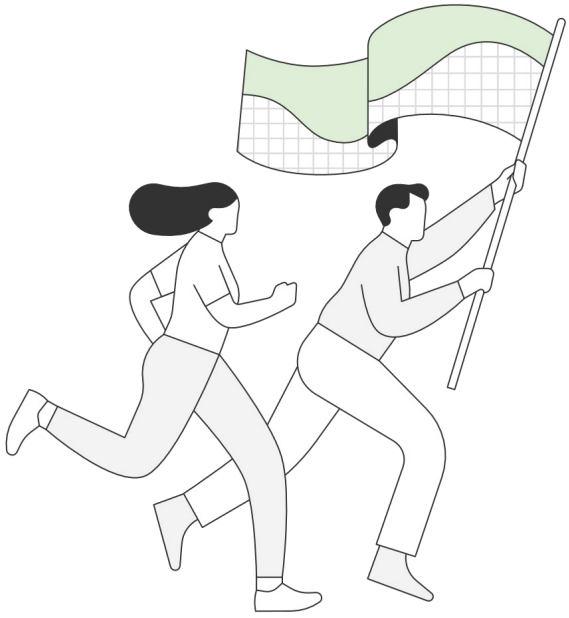


[1] Green Corridors, Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping, 2025.

01 Time to act

The maritime industry is working towards a large-scale green transition, with a goal to reach net-zero greenhouse gas emissions from international shipping by around 2050.[2] However, it takes time to initiate the transition and get the various parts of the value chain off the ground. Individual segments of the value chain – fuel producers, ports, shipowners/operators, and cargo owners –are each working with their individual suppliers and customers to initiate the transition.

Green shipping corridors offer an approach where these individual attempts can be coordinated in timing and pace, allowing first-mover actions to be matured into joint efforts, and enabling the cost gap to be estimated and funding options to be pursued. In this paper, we synthesize learnings and insights from our global portfolio of green corridor projects to highlight some key enablers that will allow green corridors to progress from plan to reality – thereby helping to catalyze the maritime industry's green transition.



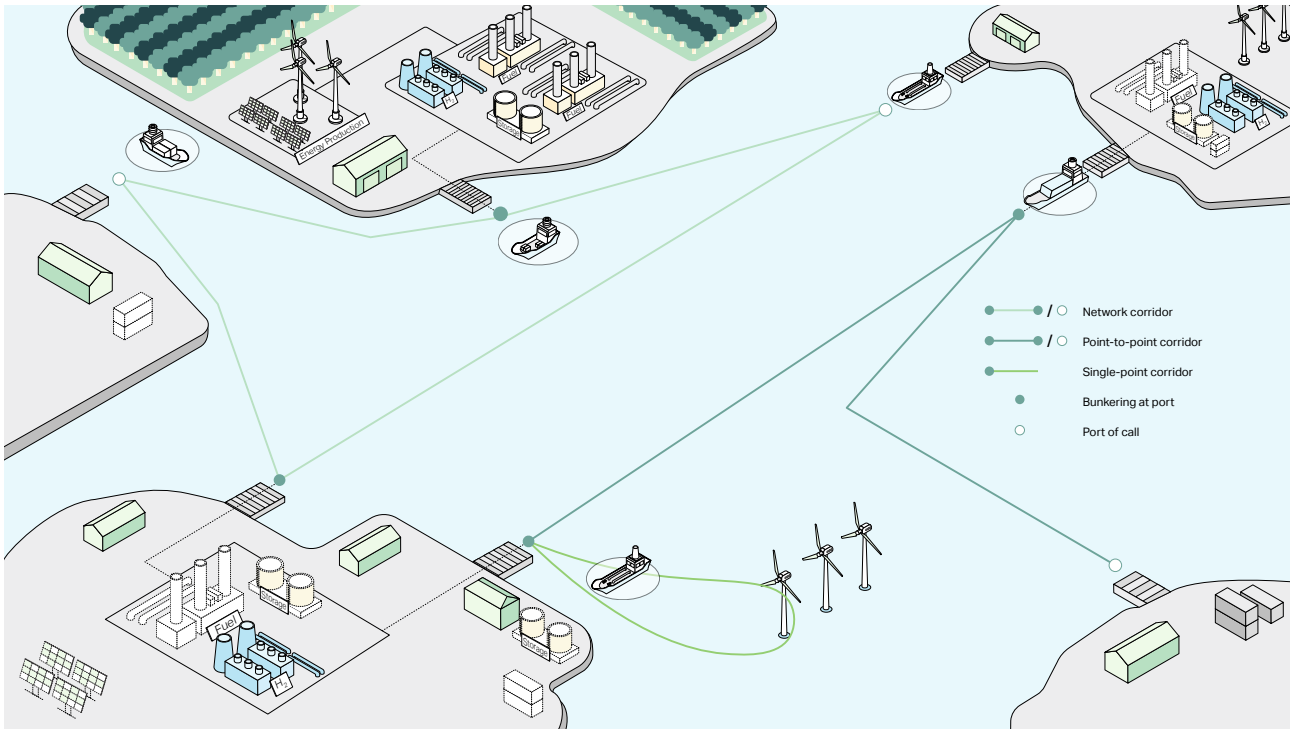
[2] 2023 IMO Strategy on the Reduction of GHG Emissions from Ships, International Maritime Organization, 2023.

02 The role: How green corridors can catalyze the transition

Green shipping corridors are routes where commercial vessels operate using alternative, low-emissions fuels or other means of low-carbon propulsion, such as electricity, supported by coordinated efforts across the value chain. Acting as strategic testbeds, they are designed to accelerate the maritime sector's transition to zero-emissions operations.

The corridors can be network, point-to-point or single-point corridors (Figure 1). Green corridor projects bring together the entire maritime ecosystem, including fuel producers, ports, vessel owners, and cargo owners, to assess the feasibility of deploying low-emissions fuels.

Figure 1: Three types of green corridors.



Widespread adoption of green solutions in the maritime ecosystem is challenging.

Independent efforts to decarbonize shipping are being made. These efforts include the installation of shore power and building of dual-fuel-powered vessels (such as the Maersk dual-fuel container fleet), bunkering trials with ammonia, the Zero Emission Maritime Buyers Alliance (ZEMBA),[3] Eco-Delivery (a sustainable shipping solution developed by Maersk),[4] and the Katalist book-and-claim system.[5] Furthermore, commercial demonstration plants for zero- and near-zero-emissions (ZNZ) fuels, such as the Kassø e-methanol plant,[6] are being constructed and operated.

The term "zero- and near-zero-emissions (ZNZ) fuels"

refers to those fuels or other means of propulsion needed in the 2050 shipping energy mix, meeting the requirements from the International Maritime Organization (IMO) for both carbon intensity and sustainability.

However, widespread adoption of green solutions in the maritime industry is challenging for several reasons:

1. ZNZ fuels cost more than conventional fuels.

The outlook from our portfolio of green corridor projects is that ZNZ fuels cost 1.5 to 4 times more than conventional fuels. This is primarily because ZNZ fuels are in a nascent state with limited economies of scale and high-risk premiums, and because the maritime industry can use cheaper fractions of crude oil and sustainable bio-oil.

2. There is a lack of transparency around what it takes to drive early adoption.

Instruments - such as regulation and public funding - must drive early adoption. However, the exact design of the instruments to best incentivize early adoption is unclear.

3. Large investments in decarbonization solutions must be made.

The maritime industry's infrastructure and technologies are currently geared toward fossil fuels. This means investments must be made to develop the infrastructure to produce, store, and distribute ZNZ fuels.

4. There is a first-mover disadvantage due to high investment costs and the risk of stranded assets

Pioneering investments carry higher costs, reflecting the early-stage development of ZNZ fuel solutions. At the same time, the full benefit of green investments may not be realized due to, for example, the low availability of green fuels.

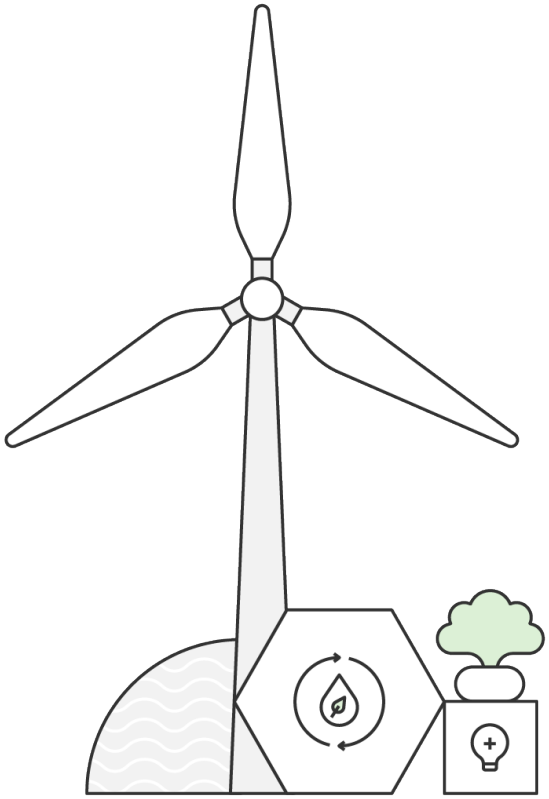
5. The maritime value chain is complex.

In the mature maritime industry, it is uncommon for collaborations to span entire value chains of fuel producers, ports, vessel owners, and cargo owners. Increased coordination and collaboration are required to ensure investment pace is aligned and to innovate new ways of working with green initiatives.

[3] Zero Emission Maritime Buyers Alliance
[4] Maersk ECO Delivery
[5] Katalist
[6] Kassø e-methanol facility officially inaugurated, European Energy, 2025.

The concept of green shipping corridors was launched in 2021, prior to which no outlook for global regulation for greenhouse gas (GHG) emissions was in place, and where several technical challenges still constituted concerns. At that point, green corridor efforts primarily concerned technical development and starting the collaboration on the first deployment of sustainable ZNZ fuels in full-scale demonstration projects (see Figure 2).

By 2025, the picture has evolved. Only limited work is needed on technical development, and most of the focus is on bringing organizations together in collaboration and on estimating the funding needed to bring green corridors into operation. The 83rd session of the IMO's Marine Environment Protection Committee (MEPC 83) outlook has made deployment of sustainable ZNZ fuels more likely, and there are now signs of the first actual commercial cases, indicating a nascent market. In the years to come, work on green corridors will focus on enabling funding for the demonstration of these corridors, as well as establishing collaboration within consortia, such that funding needs can be established.



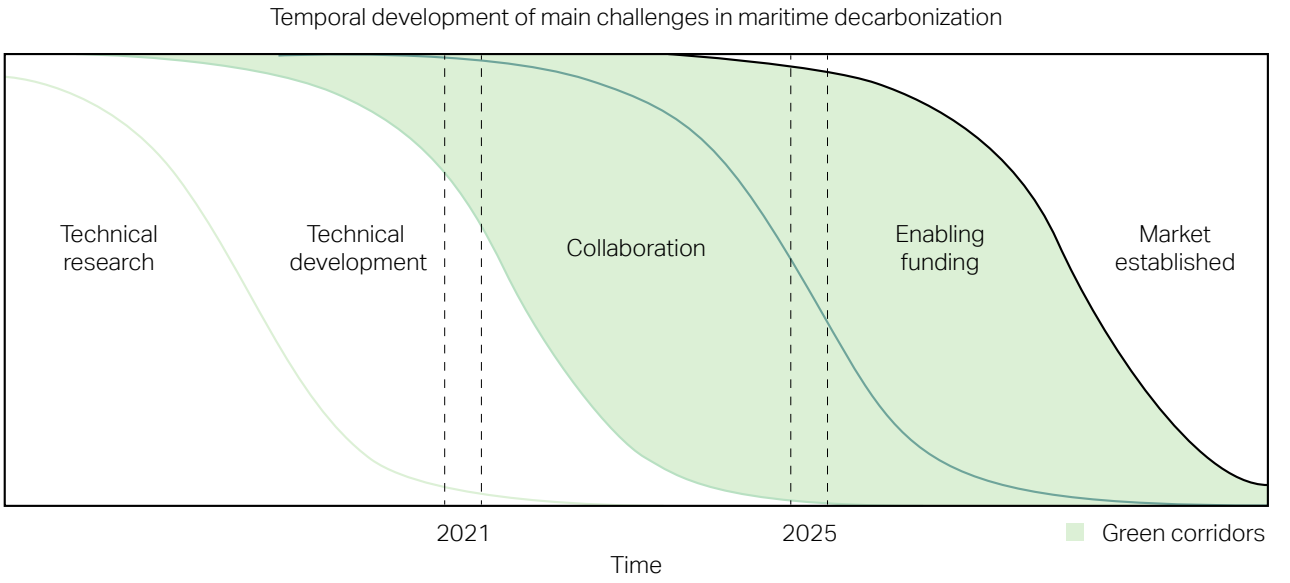
"When you resolve a problem, it is easy to forget, or diminish, the achievement of overcoming that problem as time passes. In the case of green corridors, many of the technical challenges have been solved, and we now sit with projects which face economic and collaborative challenges. But we should not forget or diminish the progress that has been made to get to this stage."

Sveinung Oftedal
Chief Negotiator, Green Shipping,
Norwegian Ministry for Climate and Environment

The role of green corridors is not their actual CO_2 emissions reduction, but their ability to address and resolve technical challenges that need to be overcome for specific projects, and to eliminate key uncertainties or barriers. Hence, they provide an option for regulators and the IMO to understand what is needed at local, national, regional, and global scales as a final push to move the deployment of sustainable ZNZ fuels from their current pre-commercial setting into a commercial market situation.

Green corridors demonstrate a number of connected elements required for maritime decarbonization and ensure that the elements are coordinated and matured at the same pace. Following a green corridor maturation project, which includes the aim of identifying specific funding needs for construction and operation, decision-makers may decide to fund only parts of a corridor. This could be in cases warranted by industry policies or specific funding options. An example could be the development of port and storage infrastructure to be used for numerous projects, or in instances where, for example, the funding of energy-and-fuel projects in developing economies has special focus (e.g., the IMO Multi-Donor GHG Trust Fund).

Figure 2: The changing role of green shipping corridors over time.



In April 2025, the IMO's Marine Environment Protection Committee (MEPC) approved the IMO Net-Zero Framework to incentivize energy transition. The framework's measures will come into force in 2027.

At the core of the Net-Zero Framework is the Global Fuel Standard, which sets an increasingly strict GHG fuel intensity (GFI) limit to reduce emissions. Ships that fail to meet these GFI targets must purchase Remedial Units as a contribution to the IMO Net-Zero Fund.

At the same time, those that go beyond the requirements can generate Surplus Units, which can be traded to compensate for non-compliance elsewhere in the global fleet.

The framework puts shipping on a path to emissions reduction, with the final impact largely dependent upon accessibility of sustainable ZNZ fuels to shipping, as well as trade growth projections. As the framework stands, however, internal modeling shows that the Net-Zero Framework does not close the cost gap in any of the MMMCZCS's green corridor projects.

Green shipping corridors are a catalyst to accelerate the transition before decarbonization projects become commercially viable. The corridors can help mature the maritime deployment of green solutions by:

1. Enabling the coordinated pacing of investments
across the value chain and coordinated allocation of accrued investment costs for individual projects.

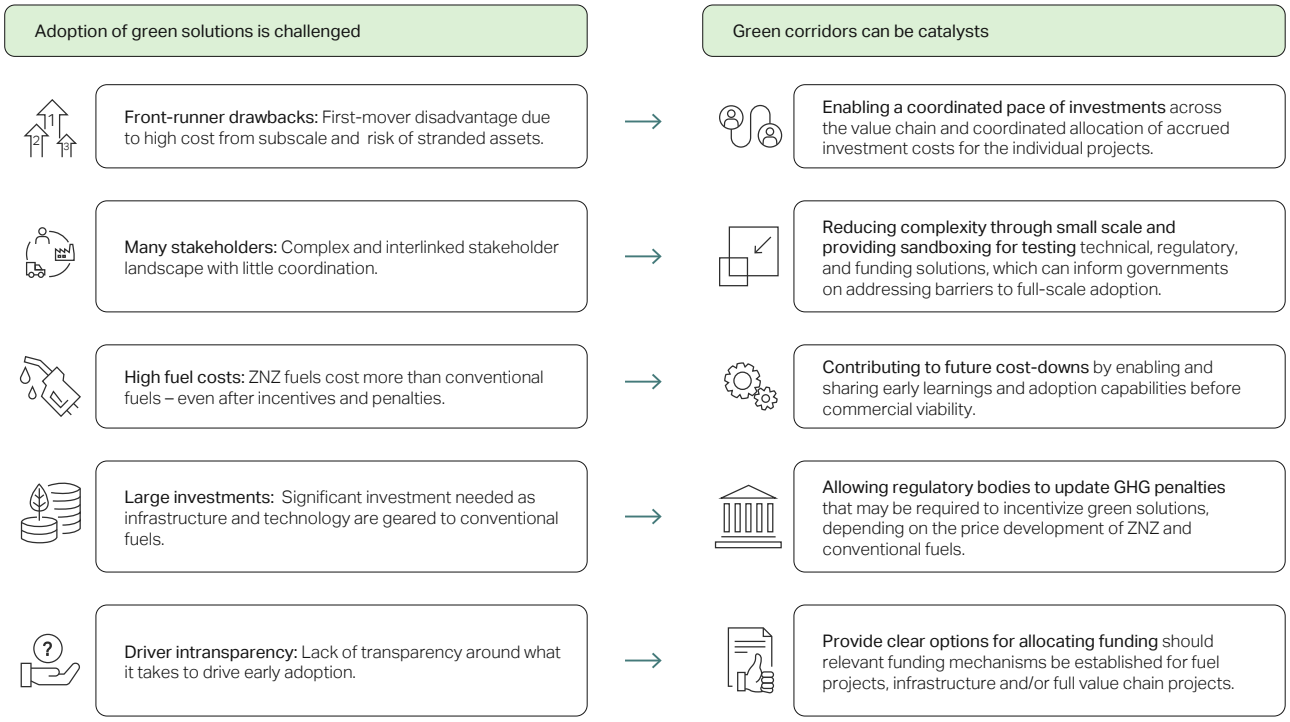
2. Reducing complexity
through small-scale implementation and providing sandboxing for testing technical, regulatory, and funding solutions, which can inform governments in addressing barriers to full-scale adoption.

3. Contributing to future cost-downs
by enabling and sharing early learnings and adoption capabilities prior to commercial viability. Here, 'cost-downs' refers to technological advancements and learnings gained through concrete implementation (e.g., building a fuel production facility), which reduce the costs for subsequent projects of a similar nature.

4. Allowing regulatory bodies to update GHG penalties
that may be required to incentivize green solutions, depending on pricing developments in ZNZ and conventional fuels.

5. Providing clear options for allocating funding
should relevant funding mechanisms be established for fuel projects, infrastructure, and/or full value chain projects.

Figure 3: Summarizing the role of green corridors as catalysts of the green transition.



The potential of green shipping corridors was first recognized by the Clydebank Declaration.

At COP26 in 2021, 22 nations signed the declaration, which now has 27 signatories (see Figure 4 and fact box). The declaration set a collective aim to provide relevant support and incentives for green shipping corridors, promote partnerships, establish at least six green shipping corridors by the middle of the decade, and scale up activity in the following years. Many corridor projects are now ready to discuss support and incentives with relevant national bodies, and it is cardinal that the support (particularly funding) is provided quickly and efficiently.

Figure 4: Clydebank Declaration signatories.

"It is our collective aim to support the establishment of at least six green corridors by the middle of this decade, while aiming to scale activity up in the following years, by inter alia supporting the establishment of more routes, longer routes and/or having more ships on the same routes. It is our aspiration to see many more corridors in operation by 2030."

"Signatories pledge to:

- ⟶ Facilitate the establishment of partnerships, with participation from ports, operators and others along the value chain, to accelerate the decarbonisation of the shipping sector and its fuel supply through green shipping corridor projects.
- ⟶ Identify and explore actions to address barriers to the formation of green corridors. This could cover, for example, regulatory frameworks, incentives, information sharing or infrastructure.
- ⟶ Consider the inclusion of provisions for green corridors in the development or review of National Action Plans.
- ⟶ Work to ensure that wider consideration is taken for environmental impacts and sustainability when pursuing green shipping corridors."[7]

[7] Clydebank Declaration for green shipping corridors, 2021.

03 The challenges: Why no green corridors are yet operating

By the end of 2024, 62 green shipping corridor initiatives had been identified by the Getting to Zero Coalition.[8] Due to their predictable routes, roll-on roll-off (RORO) and ferry (ROPAX) are the most common shipping segments amongst these initiatives. With most shipping segments featured in project initiatives, some 80% of maritime emissions are represented, although dry and liquid bulk are underrepresented. This variety of initiatives means that the green corridor projects currently underway have the potential to demonstrate solutions and generate learnings that are relevant for most of the maritime industry.

Green corridor projects are yet to prove economic feasibility.

The maturation and implementation of pre-commercial projects takes time. In the feasibility phase of a green corridor project, the technical, regulatory, and economic viability of the corridor is assessed. While several battery-electric and hybrid-electric green ships are in operation today, none of the 62 green corridors identified by the Getting to Zero Coalition have passed this feasibility phase. It has proven more challenging to get the corridors up and running than expected when the Clydebank Declaration was signed in 2021, aiming for six mid-decade. The Getting to Zero Coalition's annual progress report thoroughly describes this situation, highlighting that although several green corridor projects, "are becoming increasingly mature, [they] risk hitting a 'feasibility wall' if economic challenges are not resolved."

The outlook from our portfolio is that these green corridor projects will not become economically feasible without public funding for the first projects or regulation adequately pricing CO_2 emissions.

Projects lacking definition or commitment across the value chain struggle to mature.

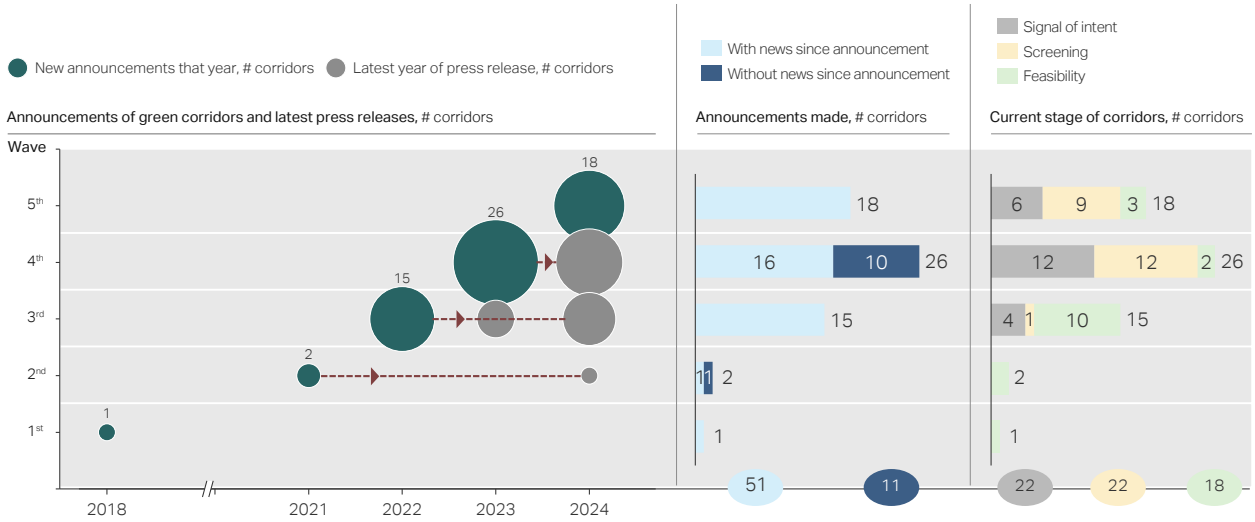
Without clear definitions on what a project is testing the feasibility of, such as quantity of cargo carried, number of vessels required, type and quantity of ZNZ fuel, and storage and bunkering requirements, no statement of feasibility can be given. Equally, statements of feasibility are not easily obtained without commercial companies being committed to carrying out their respective assessments. Press releases may be used as a supplementary source to gauge the level of activity for individual green corridor projects. Some have not published subsequent press releases following the initial announcement (Figure 5), which likely indicates periodical dormancy or that the projects are too loosely defined to progress. We do, however, see many corridors progressing, and the pace of moving through to feasibility is picking up. For example, two of the 26 green shipping corridors announced in 2023 have reached the feasibility stage, as per our definition. Additionally, several of the 18 announced in 2024 are already in feasibility.

[8] Annual Progress Report on Green Shipping Corridors 2024, Getting to Zero Coalition, 2024.

Multiple competitors within a green corridor consortium can reduce appetite to share data.

Many of the announced projects feature large consortia comprising several competing companies. Although large consortia ensure significant outreach and multiple points of view, they can also pose challenges that may slow the progress of green corridor projects. A feasibility study requires not only technical and regulatory assessments, but also disclosure of cost estimates across the value chain to assess economic feasibility. In our experience, commercial stakeholders can be reluctant to share this information when competitors are involved in the project.

Figure 5: Announcement and stages of green shipping corridors.



* Source: MMMCZCS, press search, company and governmental websites

3.1 Noteworthy corridors in the MMMCZCS portfolio advancing toward operation

The MMMCZCS's project portfolio features several examples of green shipping corridors with line of sight to operation within the next five years. The ROK-US PCTC green corridor (using green methanol), for instance, is planned to be in operation during 2027, while the Chile Copper Concentrate green corridor (using green ammonia) will be operational around 2030 (Figure 6). These projects are characterized by successful value chain collaboration, close collaboration with key governmental bodies, and active investigation of measures required to close the cost gap – showing that challenges can be overcome to enable maritime decarbonization.

At the MMMCZCS, the green corridor maturation process generates value in several ways. In its raw form, the maturation of a green corridor leads to the identification of a specific funding need which, if granted, can move the pre-commercial project into construction and operation. As no public funding has yet been granted for any green corridor project on the planet, this full process is yet to be seen.

The MMMCZCS has performed early-phase green corridor maturation for projects with all vessel segments, all fuel types, and on six continents. These projects have added value in a variety of ways and their nature is summarized below:

- → Input to national hydrogen strategies
- → Input to maritime National Action Plans
- → Input to element funding (such as port studies & port and bunkering infrastructure)
- → Input to initial design of actual green corridor funding
- → Input to discussions around IMO GHG funds
- → Input to EU Global Gateway Green Shipping Corridor design and funding

For more details, see www.zerocarbonshipping.com/green-corridors

In the next section, we turn to a summary of the learnings and enabling factors from some of the most developed green corridor projects in our portfolio. Our aim here is to share insights and inspire other stakeholders to apply these learnings.

Figure 6: Noteworthy front-runner green corridor projects from the MMMCZCS portfolio.

Case study: ROK-US PCTC green corridor.

Starting year
2024

Planned first year of operation
2027

Milestones
Vessels have been ordered for delivery from 2026H2.

Commitment of governmental financial support for bunkering infrastructure.

Ports	Ulsan, Tacoma
Fuel type	Green methanol
Vessel type	9,300 CEU (Car Equivalent Units) pure car, truck carrier
Number of vessels	2
Cargo type	Automobiles, high & heavy, & breakbulk

What makes this corridor project special

- The ROK-US PCTC green corridor project has been fast-moving with only three years between start and first operation.

Design choices to ensure progress

- Decision to progress without bunker supplier for now while confirming willingness, assets, and capabilities of bunkering green methanol among the stakeholders.
- Initial study with two methanol dual-fuel vessels with ability/flexibility to allocate more vessels with green methanol or other low/zero-carbon fuels to the green shipping corridor.
- Plan to scale up to additional cargo owners throughout phases to slowly increase value chain complexity.

Other learnings

- Higher degree of risk-taking and green corridor investment willingness if consortium members have internal decarbonization target to reach.
- Higher government support if selected ports are part of their development priorities.
- Higher port maturity if port is used to handling methanol as a commodity.

Consortium members

greenmarine
울산항만공사 ULSAN PORT AUTHORITY
THE NORTHWEST SEAPORT ALLIANCE
Wallenius Wilhelmsen

Other stakeholders involved

Ministry of Oceans and Fisheries
KR KOREAN REGISTER

Case study: Chile Copper Concentrate green corridor.

Starting year
2022

Planned first year of operation
2030

Milestones
Letter of commitment by Chile's Minister of Energy to green corridors.

Ports	Port of Mejillones
Fuel type	E-ammonia
Vessel type	Handymax bulk carrier
Number of vessels	10
Cargo type	Copper concentrate

What makes this corridor project special

- The Chile Copper Concentrate green corridor project was one of the first projects to be initiated clearing the path for others, e.g., by overcoming technical challenges of ammonia engines.

Design choices to ensure progress

- In the first years of operation, the corridor will only be green one way. This enables progression, without having solved for the availability of e-ammonia at all relevant ports.
- Other nearby e-ammonia off-takers mean that the fuel plant is willing to move ahead with investments.

Other learnings

- E-ammonia production can take place at port site to limit transportation.
- Involvement of state-owned companies e.g., cargo owners, can mean higher willingness to engage in green corridors due to government-set green targets.
- Overlap between stakeholders in value chain simplifies coordination e.g., if port is subsidiary of fuel producer.
- Stronger government support if there is an existing green hydrogen strategy.

Consortium members

Sumitomo Corporation (Chile) Limitada
Enriching lives and the world
Interacid GROUP
CODELCO
NYK LINE NIPPON YUSEN KAISHA

Other stakeholders involved

CIP Copenhagen Infrastructure Partners
OSHIMA
ANTOFAGASTA PLC
Everllence

04 The solution: How to unlock green shipping corridors

The MMMCZCS sees two specific unlocks as necessary to ensure the continued progress of green corridors. First, projects must have the right collaboration tools, paired with as little complexity as possible.

Second, when the project is appropriately matured, the project consortium must actively and stringently work to estimate the cost gap and evaluate measures to close it.

Figure 7: What it takes to ensure continued progress for green corridors.

1. Enable collaboration

Value chain collaboration is required for green shipping corridors to be successful. A stringent methodology on the project path and roles & responsibilities enables collaboration. Similarly, it is easier to collaborate if the project is low complexity with only few cargo owners, or existing port expertise with chemicals.

2. Cover costs

Green shipping corridor projects must be able to cover costs to become operational. Several measures which, combined, may close the cost gap include: optimized financing, regulation, end-customer green premium, value chain cost management, and public funding.

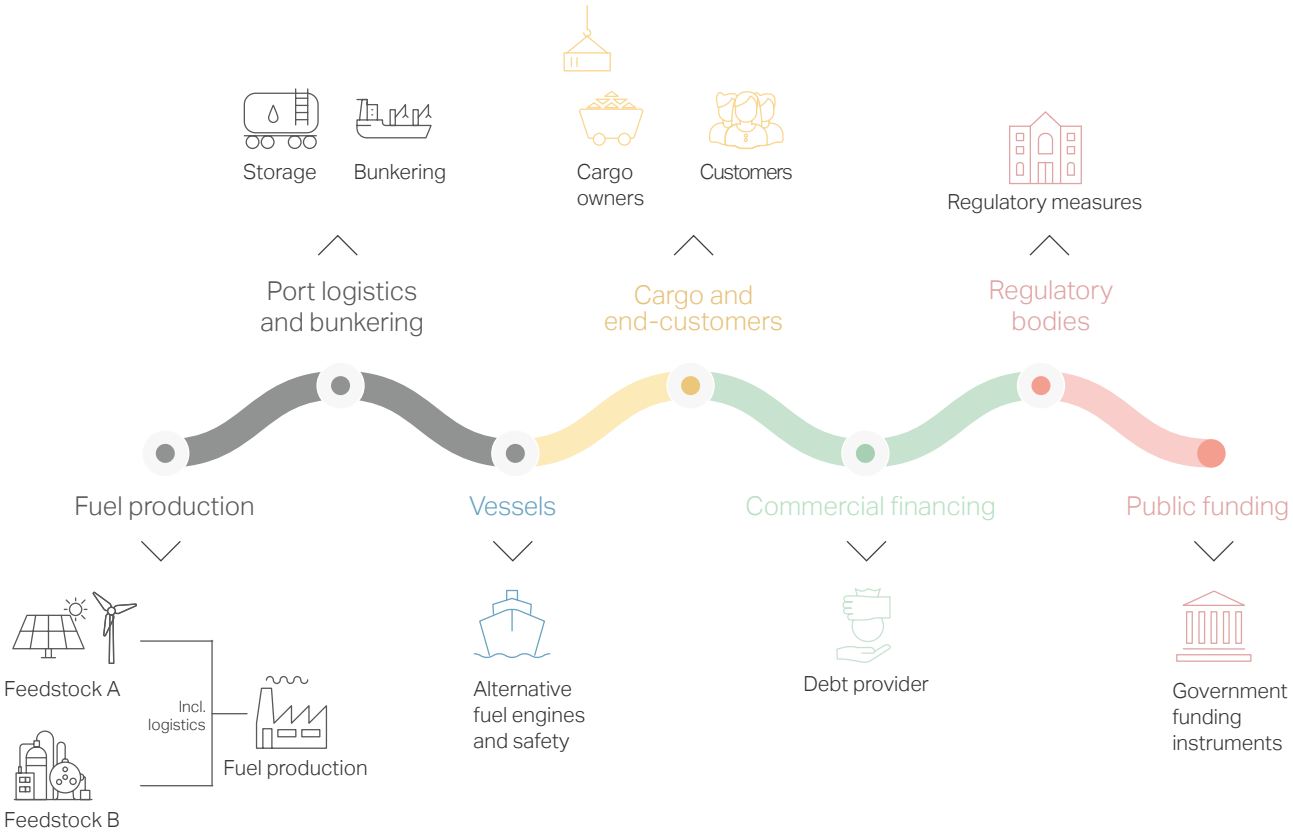
4.1 Stringent methodologies and facilitators can enable collaboration

Successful green shipping corridors require collaboration across the value chain. Collaboration is necessary to design the new ways of working needed for the transition to ZNZ fuels, where no positive monetary return exists in the short term and where no previous projects have paved the way forward.

Here, it is important to use a rigorous methodology to run the green corridor project and to assess how to close the cost gap. Such a methodology provides stakeholders with a roadmap for running the project, sets expectations for each stakeholder, and ensures a shared vocabulary for the project's funding needs, given the economic unfeasibility. The MMMCZCS has developed such methodologies and made them publicly available.[9] Our feasibility methodology provides a transparent view of the cost modelling and what is needed regarding public funding.

In addition to a stringent methodology, appointing a neutral facilitator can help to foster collaboration between commercial companies in the consortium, thus accelerating maturation of green shipping corridors. In fact, the six projects that have made the most progress all have an independent facilitator on board.[10]

Figure 8: Green shipping corridor projects involve collaboration across the entire value chain.



[9] Green Corridor Feasibility Methodology, Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping, 2025.
[10] Annual Progress Report on Green Shipping Corridors 2024, Getting to Zero Coalition, 2024.

4.2 Collaboration benefits from simplicity

There are several ways to design projects with less complexity, improving their likelihood of success. While these simpler corridors may not yield the most substantial CO_2 reductions or involve deep-sea shipping, they offer an accessible entry point for initial green corridor engagement. By serving as tangible demonstrations, they enable valuable knowledge exchange – and we can learn just as much from these projects as from a more ambitious one.

Lower-complexity projects:

Focus on cargo where only a few cargo owners are involved...

such as raw material or ferry passengers, to limit the number of stakeholders involved in the collaboration. The Chile Copper Concentrate green corridor (Figure 6), with its focus on copper transport, is an example of this approach.

Select routes where ports already manage chemicals as part of the cargo...

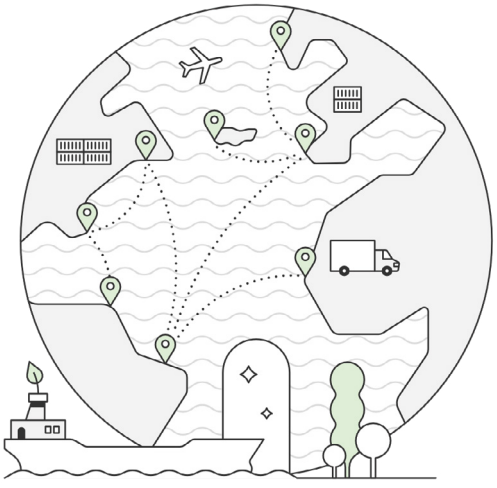
to leverage their experience handling these chemicals (which will be fuels in the future) and navigating regulatory barriers, as seen in the ROK-US PCTC corridor (Figure 6).

Include domestic routes...

making it easier to quantify local positive externalities (such as job creation and GDP multiplication, as well as impact on national CO_2 reduction targets), hence lowering barriers to public funding.

Limit or avoid involving competing companies in consortia...

as this can hamper willingness to share technical learnings and especially the project's development costs, as well as the cargo owner's willingness to pay.



4.3 Green shipping corridor projects must cover costs to become operational

A 2025 report[11] authored by the UCL Energy Institute and UMAS stated that: "Without a considerable level of willingness to pay for green shipping from customers, or regulations and measures that either oblige or support early-mover adoption of zero emissions fuels, this cost gap presents the most critical obstacle to the execution of these projects."

To assist in addressing this issue, the MMMCZCS has developed a Green Corridor Cost Model[12] and has identified several measures that, when combined, may be able to close the cost gap generated by the higher cost of ZNZ fuels. These measures, listed below and visualized in figure 9 on the following page, are being assessed by the individual green shipping corridor consortia in the feasibility phase:

A. Banks and financial institutions can provide optimized financing through better loan terms, such as guarantees and lower interest rates. Projects with clear and measurable sustainability targets are likely to have access to better financing options.

B. Governments and other regulatory bodies can introduce regulations such as CO_2 pricing, other carbon restrictions, tax incentives, and further non-competitive measures that can play a vital role in closing the cost gap. These elements are in addition to global regulation, as these are included in the first two columns of Figure 9. Supporting mechanisms such as tax incentives and production incentives (such as the Inflation Reduction Act and the Hydrogen Production Tax Incentive) also contribute.

C. Cargo owners and end-customers must pay green premiums for low-carbon transportation. It is paramount that all the cost of sustainable shipping ultimately lands at the customers, and hence, by around 2040, the cargo must carry all the incremental cost. The initial distribution of cost can potentially be dealt with through a book-and-claim system such as Katalist.[13] It is easier to allocate some of the cost to the end-customer if the cargo is close to the end-user, such as with car carriers, ferries, and cruises, as it enables transparency around willingness to pay. Similarly, homogenous cargo, such as the aforementioned as well as raw materials and liquid bulk, enables transparency in allocating the premium. In the case of cargo owners, a group of front-runners have indicated that they are willing to pay a premium of between 5 and 10 percent for sustainable logistics services.[14]

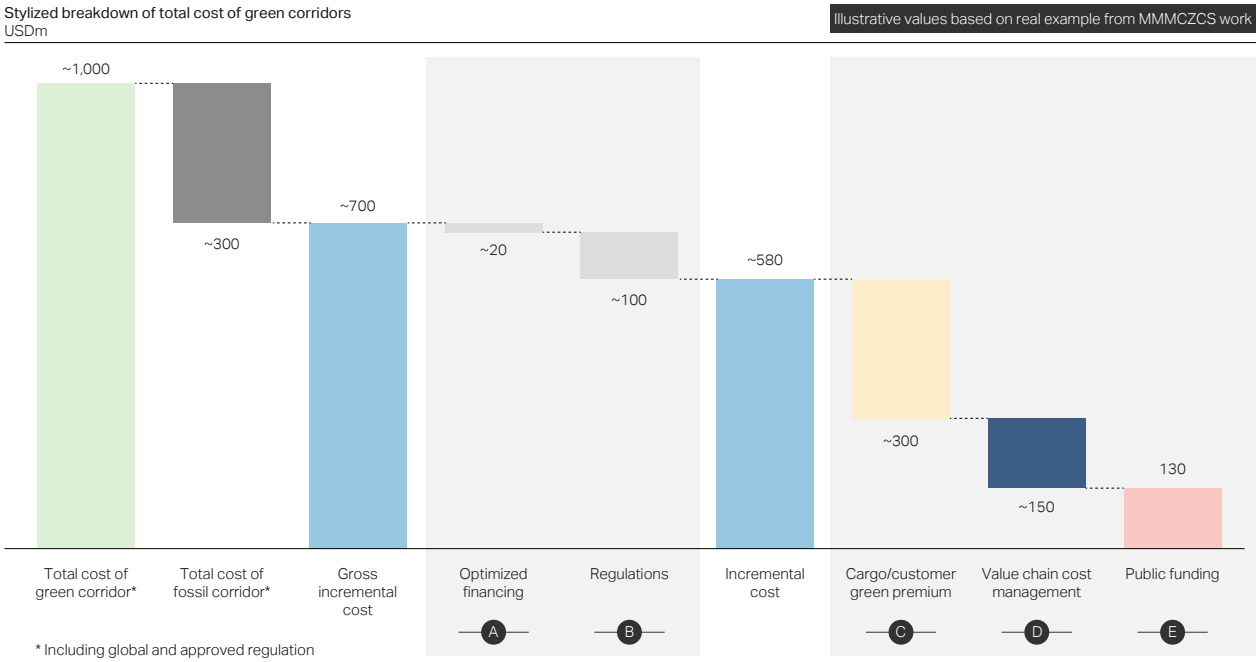
D. The value chain can actively manage part of the project's costs. Fuel producers can lower costs by aggregating fuel demand[15] with other offtakers, and port infrastructure costs can be shared across multiple corridors. For vessels, learnings from dual-fuel engines may help the vessel owner/operator cover part of the cost. Ordering more vessels will also reduce the incremental unit cost of transportation, due to economies of scale.

E. Governments must provide public funding, such as grants and direct subsidies, which play a vital role in closing the cost gap and are the last resort when the previous areas have been explored. This has been a well-known method of stimulating new industries to move from pre-commercial to actual market commercialization. Governments should consider the socio-economic benefits of green shipping corridors when evaluating funding requests, such as job creation, positive GDP impact, and contribution to decarbonization ambitions.[16] In the MMMCZCS's experience, it is easier to obtain public funding for green shipping corridors from countries with a strategic commitment to maritime and climate initiatives. These countries already have funding options and/or understand what is required to enable decarbonization projects.

[11] Building a Business Case for Green Shipping Corridors, UCL and UMAS, 2025.
[12] Green Corridors: cost model and CO_2 calculations, Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping, 2025.
[13] Katalist
[14] Driving decarbonization: Accelerating zero-emission freight transport, McKinsey & Company, 2022.
[15] Insights on Fuel Demand Aggregation for Sustainable Maritime Fuels, Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping, 2025.
[16] Green Corridors: cost model and CO_2 calculations, externalities, Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping, 2025.

Figure 9 illustrates the economic challenge of green corridors and the solution framework developed by the MMMCZCS. The visualization is indicative of the total costs (CapEx and OpEx) across the lifetime of the green corridor, set against the comparative costs of a fossil corridor moving the same type and quantity of cargo. The solution framework is built upon the principle that, for green corridors, no one measure or stakeholder can carry all the incremental cost, but collectively covering this cost can be manageable. In this illustrative example, measures A through to D are utilized to reduce the incremental cost from 700 million USD to 130 million USD. This final value of 130 million USD is what would be required in public funding to make the corridor in this example economically viable.

Figure 9: Illustration of measures to close the cost gap for a green corridor project.



"The IMO plays a significant role in maritime decarbonization. The climate crisis is a global challenge. It is crucial that enabling the green fuels is not a task for a single country, or based on a single ideology, but is a shared task for all."

Diego Pardow
Minister of Energy, Chile.

05 Conclusion

Green shipping corridors have the potential to accelerate the transition in multiple ways.

By addressing specific contexts and challenges, and **enabling the estimation of funding needed to realize each corridor project,** green corridors provide clear guidance for the allocation of funding from public, private and philanthropic funding options aiming to initiate the green transition. By estimating abatement cost, job creation, GDP impact, and other value parameters, individual corridors can be compared, ensuring that the right corridors are funded.
Metrics for corridors in developing economies are necessarily different, as these economies have additional challenges in the form of cost of capital, infrastructure availability, and more.

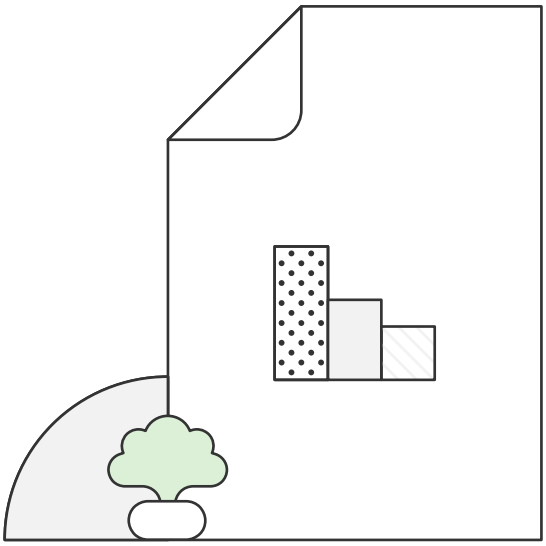
Green corridors also support shaping and implementation of policy and regulation. **The largest challenge to transition to ZNZ fuels by 2050 is the large cost gap** between the sustainable fuels of the future and the unsustainable fuels of the present. To bridge the cost gap, it is paramount that adequate regulation/pricing around CO_2 is invoked (by the IMO and other bodies). Green corridors also provide critical information to regulators to ensure regulation is sufficiently strong to incentivize decarbonization using ZNZs, rather than simply 'paying to pollute'. Furthermore, corridors will provide confidence and de-risking for industry investors and decision-makers to pursue a strong decarbonization pathway.

The projected decarbonization of the global maritime industry relies on significant cost-downs of the 2050 ZNZ fuels. But the cost-down does not happen by itself. Instead, it requires initial projects to be courageous, producing at a cost that tomorrow will likely be 'too high', as others have learned from the first projects.
Green corridors provide a way to explore cost-downs for parts of the value chain. Individual projects demonstrate that it is technically and regulatorily feasible to use 2050 ZNZ fuels, although funding is needed to realize the first projects. By being specific in scope, these projects may receive funding for either part of or the full value chain. Funding support is needed for the first movers, to avoid the waiting game in relation to the cost-down.

In summary, the activation of green corridors will accelerate the transition. Collaboration is key to maturing green corridor projects, while funding is the critical enabler for moving them from maturation to execution. Addressing these two vital aspects will contribute to the cost-down and will allow regulators to invoke the necessary pricing on CO_2, moving the decarbonization of shipping through its current pre-commercial space into genuine action.

06 The project team

This report was prepared by the Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping (MMMCZCS) with assistance from our partners. We would like to extend our deep thanks to the participants from all green corridor projects in the MMMCZCS portfolio.



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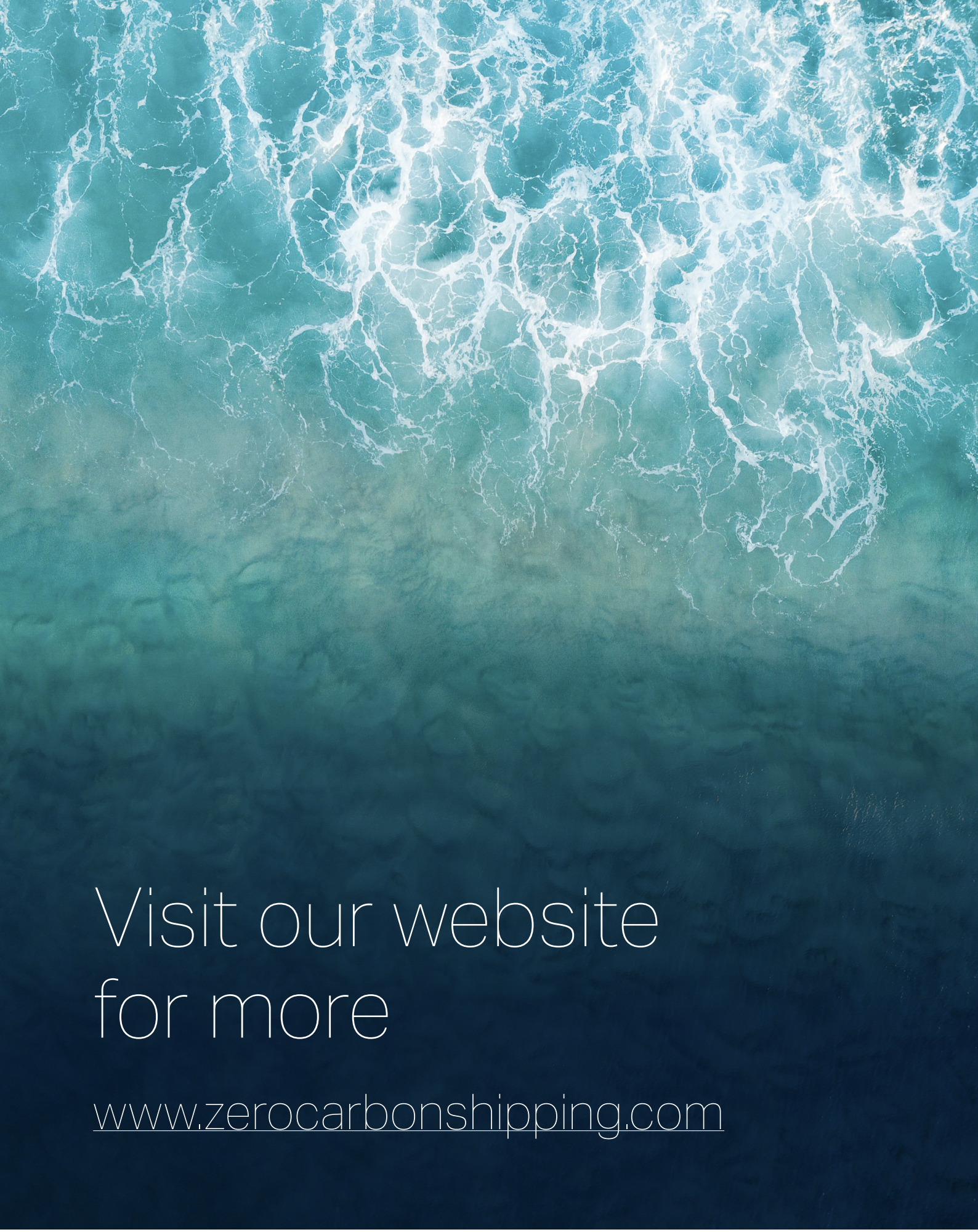

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