

# Developing P&O Maritime Logistics' Decarbonisation Pathway

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# Introduction

As the Head of HSSEQ at P&O Maritime Logistics, I am entrusted with steering our company towards the important goal of decarbonisation. Our path to a more sustainable future can be compared to our vessels in Papua New Guinea that carefully navigate the uncharted waterways of the Fly River. The end goal is clear – a sustainable, low-carbon future – but the journey to reach it is filled with complexities and unexpected challenges that we're determined to overcome.

This white paper outlines the key challenges we have faced in developing our decarbonisation pathway and provides practical solutions to overcome these challenges. We draw on our experiences at P&O Maritime Logistics to shed light on these less-discussed obstacles.

While we recognise the importance of key decarbonisation steps like baseline assessment and goal setting, this paper explores often-overlooked aspects such as alternative fuels, regulatory diversity, offshore business challenges, and human factors. Our goal is to offer a fuller picture of implementing a decarbonisation pathway, thereby enriching industry knowledge and accelerating global climate efforts.



## Our goals

We are aligned with DP World's (our parent company's) decarbonization objectives.



**2030**

Reduce emissions by 28%



**2040**

Carbon neutral by 2040



**2050**

Net Zero by 2050

## POML – Decarbonisation Pillars

Our approach is to decarbonise our operations through implementing current and future reduction measures, which are grouped into five pillars.



### Process Efficiency and Digitalisation

#### Ambition

Reduce unnecessary trips and improve routing and scheduling.

#### We will achieve this by

Improved route planning through the use of artificial intelligence in the POML logistics platform.



### Equipment Electrification & Efficiency

#### Ambition

Reduce diesel and marine fuel consumption.

#### We will achieve this by

Applying measures to increase efficiency of equipment or shifting to electricity.



### Renewable Energy Supply

#### Ambition

Procure electricity from renewable energy or carbon-neutral sources.

#### We will achieve this by

Pursuing self-generation renewable energy, Power Purchase Agreements (PPA) and green energy tariffs.



### Low Carbon Fuel Supply

#### Ambition

Procure low or zero carbon fuel to replace diesel and marine fuel.

#### We will achieve this by

Procuring biofuels and/or substituting with alternative fuels. Partnering with clients on fuel reduction initiatives.



### Carbon Compensation

#### Ambition

Compensate the remaining carbon that cannot be avoided with carbon credits or other carbon offsetting.

#### We will achieve this by

Purchasing carbon credits and nature-based solutions such as the POML Mangrove planting.

# 1. Identifying the Availability of Alternative Fuels

“Methanol will be the fuel of choice!” “No, it won’t, ammonia will be!”  
“Biofuels, biofuels, it is a solution that can be implemented now” “We’re betting on hydrogen fuel cells” “Batteries, it’s all about the batteries”  
“Nuclear, is the only truly clean sustainable energy.”

In our pursuit of decarbonisation at P&O Maritime Logistics, we have found ourselves amid a whirlpool of discussions, presentations, seminars, and conferences about alternative fuels. From methanol to ammonia, biofuels to hydrogen fuel cells to batteries, and even nuclear energy, each fuel is championed as the next big thing in sustainable shipping.

Before we consider the significant steps of retrofitting existing vessels, converting engines, or acquiring new, purpose-built ships, our pathway requires a meticulous understanding of the alternative fuel landscapes within our operational regions. This understanding ensures that our decarbonisation efforts are not only guided by environmental responsibility, but also firmly anchored in practicality and feasibility.

## 1.1 Challenges

### **Fuel Suitability**

Different fuels offer varying advantages and disadvantages for specific types of operations, each presenting its own set of challenges in the path to decarbonization. Looking to the future, we anticipate a landscape where no single dominant fuel replaces the current fossil fuel reliance. In a low-carbon world, there will be space for a wide range of fuels—from methanol and ammonia to biofuels and electricity. This diversity presents a significant challenge, as each fuel type comes with its own set of requirements and limitations. For example, methanol could be an appropriate choice for an Offshore Support Vessel (OSV) if readily available in the operational area. However, it is crucial to understand that methanol contains a carbon atom, which means it will not achieve 100% decarbonization without the integration of early-stage and expensive onboard carbon capture and storage solutions. Similarly, an electric tug may be the optimal choice in regions with a well-developed shore power infrastructure. This multi-fuel future adds another layer of complexity to our decarbonization efforts but also provides opportunities for innovative solutions.

### **Geographical Variations**

The production and supply of alternative fuels are not evenly distributed worldwide, leading to geographical variations that can significantly affect the feasibility of transitioning to alternative fuels. Some regions have made substantial advancements in the production of particular types of fuels, making them more suited for specific alternative fuel options in the future. For instance, areas rich in renewable energy resources may be more

conducive for electricity-based solutions, while regions with advanced biofuel or hydrogen production capabilities may be more appropriate for those fuel types. This uneven landscape not only affects the practicality of adopting alternative fuels but also informs strategic decisions on which fuels are most effective for operations in specific regions.

### **Infrastructure Requirements & Investments**

Alternative fuels present a variety of logistical challenges, requiring specific infrastructure for storage, transportation, and refuelling. This infrastructure's availability can be inconsistent across different regions, thereby affecting the viability of using alternative fuels. One approach to mitigating this issue is the development of "green corridors," specialized routes with the necessary infrastructure to support alternative fuels like hydrogen, biofuels, or electric charging. Transitioning to these alternative fuels usually demands substantial investments, including new fuel storage and distribution facilities, refuelling stations, and modifications to ships' engines and fuel systems. These financial requirements can act as significant barriers for smaller operators looking to make the switch.

### **Prioritisation of Alternative Fuels**

The maritime industry is not the only sector competing for alternative fuels; hydrogen, which is a crucial component for the production of methanol and ammonia, is also highly sought after by various other industries, each with varying levels of urgency for its adoption. Countries may prioritize these more public-facing or urgent industries for hydrogen and other alternative fuel allocations, potentially relegating maritime operations to a lower position on the priority list. This competition for crucial resources like hydrogen can pose a significant challenge to the maritime industry's decarbonization efforts.

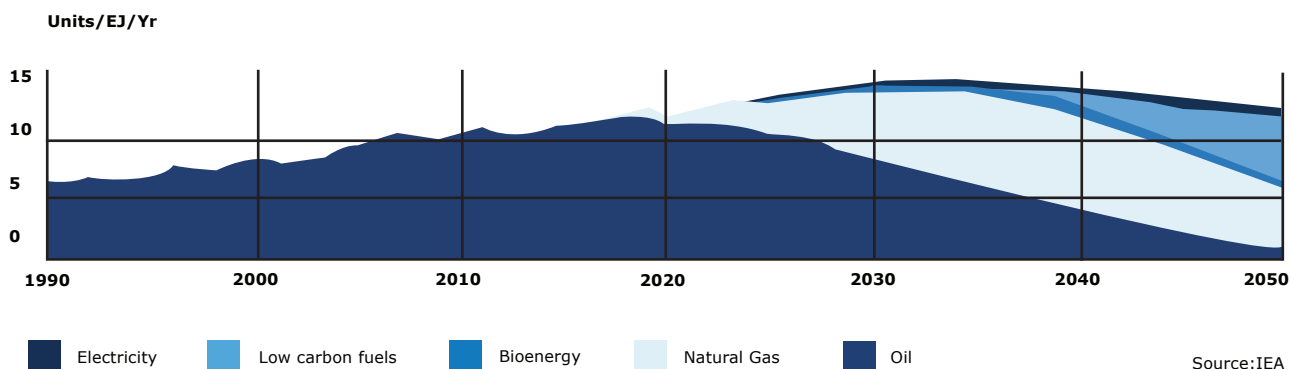
### **The Costs**

The cost of alternative fuels poses a significant barrier to their widespread adoption. While some options may be more economical than traditional fossil fuels, others can be considerably more expensive. Furthermore, transitioning to hybridized or alternative fuel vessels often involves increased capital expenditures. This presents another economic challenge, especially when customers may not be willing to absorb these additional costs. Regional variations, influenced by local production capacity, demand, and government policies, can also affect fuel prices. It is still early days, and as demand for large volumes of alternative fuels like hydrogen grows across multiple sectors, it remains to be seen how this will impact long-term prices. This intricate financial landscape, coupled with customer reluctance to pay more, adds yet another layer of complexity to the already challenging endeavour of transitioning to alternative fuels.



## Alternative Fuels

Fuel availability is the real limiting factor for fast decarbonization. Large scale availability of low carbon fuels in shipping is not expected to pick up until 2030.



## 1.2 Solutions

### Comprehensive Assessment

In our decarbonization efforts at P&O Maritime Logistics, we assess the alternative fuel landscape in each operating region, considering current availability and future trends. Commitment levels to decarbonization vary among countries; those aligned with the Paris Agreement usually have mature alternative fuel markets and supportive infrastructure, making transition easier. However, in countries with less commitment or infrastructure, moving to alternative fuels presents greater challenges.

### Flexible Fuel Strategy

At P&O Maritime Logistics, our approach to alternative fuels is as dynamic as the maritime landscape itself. Rather than committing to a single fuel option, we adopt a flexible strategy that caters to the unique needs and market maturity of each region. This adaptability allows us to utilize methanol, batteries, or other fuel sources depending on availability and suitability. In mature markets, we are ready for rapid transition; in emerging ones, we bide our time, focusing on other decarbonisation methods while supporting the growth of alternative fuel options. This versatile strategy enables us to continually adapt and progress toward our low-carbon objectives, much like a sailor adjusting sails to changing winds.

### Cost-Benefit Analysis

To accurately gauge the financial implications of transitioning to alternative fuels, a thorough cost-benefit analysis needs to be conducted. This assessment should not only account for the direct expenses associated with each type of fuel but also factor in indirect costs and benefits. These could include potential savings from reduced emissions or the opportunity to enter new markets and attract environmentally-conscious customers.

### Adaptation, Collaboration and Innovation

At P&O Maritime Logistics, we engage in multi-faceted collaboration to advocate for maritime decarbonization. This aligns with our parent company DP World's involvement in the Mærsk Mc-Kinney Møller Centre for Zero Carbon Shipping. A cornerstone of their efforts is the

European Green Corridors Network, established in cooperation with various Port Authorities to lay down a framework for alternative fuel supply. Beyond these institutional partnerships, we are actively collaborating with customers to develop sustainable business models that make alternative fuel adoption financially viable. We are also collaborating closely with suppliers to tackle scope 3 emissions, which include greenhouse gases emitted during the production and transportation of goods. These partnerships empower us to shape policies, share knowledge, and leverage collective influence for systemic change. Our collaborative approach not only advances our own operations but also propels the industry-wide transition to decarbonization, exemplifying the transformative power of collective action against global challenges like climate change.

## 2. Navigating Diverse Regulatory Environments

As we sail towards our sustainable and low-carbon future, we find ourselves navigating not just the physical waters of the world's oceans, but also the metaphorical waters of diverse regulatory environments. The regulatory landscape for carbon emissions in the offshore industry is as varied as the seas, with different rules, standards, and practices in different countries and regions. This diversity presents both challenges and opportunities as we develop and implement our decarbonisation pathway.

### 2.1 Challenges

**As a truly global organisation with operations in the Americas, multiple locations in Europe, Africa, the Middle East, the Caspian, and Oceania, we are subject to a wide array of environmental regulations and standards. These regulations can vary significantly, with different regions having stringent emissions standards and others having less rigorous requirements. This diversity presents a significant challenge in developing a consistent and effective decarbonisation pathway.**

In regions like Europe, where regulations on carbon emissions are mature and stringent, we need to ensure our decarbonisation efforts meet these regulations. On the other hand, in regions like Papua New Guinea, where data on carbon emissions is not readily available, we face a distinct set of challenges. Here, we collaborate closely with local authorities and stakeholders to understand the regulatory landscape and contribute to its development.



## 2.2 Solutions

### Leveraging Internal Resources

Navigating complex regulatory environments requires deep regional understanding, often prompting companies to hire external consultants. However, at P&O Maritime Logistics, we leverage our internal expertise. Our on-the-ground professionals intimately understand our operations and the regions we operate in—insights external consultants cannot fully replicate. We have invested in building internal capabilities, training teams, and adopting tools like MarineRegulations.com, aligning with ISO 9001 and 14001 standards to stay abreast of regulations. Before seeking external solutions, we look inward to optimize our existing resources, empowering our team to turn challenges into growth opportunities. This approach not only reduces the cost of external consultancy but also ensures our decarbonization pathway is compliant and aligns with our business goals, creating a win-win situation.

### Leveraging Regulatory Opportunities

Understanding regulations can reveal opportunities for carbon reduction that offer regulatory benefits like reduced fees or tax breaks. In Europe, for example, low-carbon operations may qualify for incentives such as subsidies and funding. These incentives can vary by region but are often linked to the adoption of low-carbon technologies or meeting specific emission targets. Leveraging these opportunities can yield both environmental and cost benefits. However, while financial incentives can enhance our decarbonization efforts, they are not the core driver. Our primary motivation is addressing the urgent issue of climate change and contributing to a sustainable future; any financial benefits are secondary but welcome bonuses.

### Proactive Engagement

Being reactive in regulatory compliance can result in missed opportunities and penalties, whereas proactive engagement allows us to stay ahead and influence regulations to align with our decarbonisation goals. We actively liaise with regulators, participate in industry forums, and advocate for eco-friendly regulations in all regions where we operate. This proactive approach ensures compliance and opens up new opportunities. For example, contributing our technical expertise in discussions about new regulations helps shape them to be both environmentally effective and industry practical. Additionally, staying ahead of regulatory changes enables us to plan and implement required adjustments in advance, offering a competitive advantage over less proactive companies.





## 3. The Current Maritime Offshore Business Model

At P&O Maritime Logistics, we are well aware that our current maritime offshore divisions business model, characterised by short-term contracts and a focus on cost efficiency, can pose a significant hurdle to our decarbonisation efforts. The fleeting nature of contracts can make it challenging to justify investments in decarbonisation, which often require a long-term perspective to realise their benefits.

### 3.1 Challenges

#### **Short-term Contracts**

Our industry is often characterised by short-term contracts, which can make it challenging to justify the long-term investments required for decarbonisation. These contracts typically focus on immediate cost efficiency, leaving little room for investments that will pay off in the long term. The current spot contract business model will also not work with the availability of alternative fuels. For instance, an offshore vessel could be one week in the Middle East working for a client and two weeks later working in Africa for another client.

#### **Fuel Ownership**

A unique challenge we face at P&O Maritime Logistics is that in a lot of our operations we do not pay for our fuel; it is supplied by our clients. While this may seem advantageous from a cost perspective, it categorizes our emissions as Scope 3 emissions, rather than Scope 1. This distinction complicates our decarbonization efforts, as we do not have direct control over the source or type of fuel used, making it challenging to reduce emissions at the source. The responsibility for decarbonization is shared with our clients, adding complexity to our sustainability goals.

#### **Cost Efficiency Focus**

The focus on cost efficiency in our business model can also be a barrier to decarbonisation. Investments in decarbonisation, such as transitioning to alternative fuels or upgrading vessels to be more energy efficient, can be significant. However, the benefits of these investments, such as reduced fuel costs and lower emissions, are often realised over the long-term.



## 3.2 Solutions

### **Exploring Alternative Contract Models**

We need to explore alternative contract models that provide more stability and certainty, which can facilitate investments in decarbonisation. For example, long-term contracts can provide the certainty needed to justify investments in decarbonisation. These contracts can also include clauses that incentivise decarbonisation, such as reduced fees for lower emissions.

### **Collaborative Fuel Transition**

To address the challenge of Scope 3 emissions, we must engage in collaborative efforts with our clients to transition towards cleaner fuels. This involves open dialogues with clients to encourage the use of low-carbon or alternative fuels in our operations. We can also explore partnerships with fuel suppliers to ensure a sustainable and decarbonized source of fuel. By working together, we can align our interests in reducing emissions and achieving our decarbonization goals.

### **Exploring Alternative Business Models**

Does the current on-demand, right-now model work, or would it be better to consider a different approach? A conclusion from an SPE paper by Kris Vedat, Morgan Eldred, Jimmy Thatcher, Abdul Rehman, and Hassaan Anjum titled 'Reducing Offshore Logistics Emissions Through Artificial Intelligence' suggests that thinking about the offshore supply chain and the offshore drilling and production activities as a system, rather than a collection of individual entities each with their own priorities, can lead to significant reductions in emissions. This change in mindset, coupled with AI techniques and digital technology, can allow us to make meaningful progress in the reduction of emissions and the creation of an eventual net-zero economy. It is perhaps the only way we will get there while still being able to maintain the level of energy production necessary to the prosperous societies we now enjoy.



## 4. The Human Element to Decarbonisation

As the Head of HSSEQ at P&O Maritime Logistics, I have seen first-hand the complexity of implementing a decarbonisation pathway across a multinational organisation. It is not a task that can be siloed into one department or left to a few individuals. It requires a coordinated, company-wide effort and we have had support from Unifeeder and the DP World Group HSE Decarbonisation team within the DP World family.

### 4.1 Challenges

#### **Human Element in Decarbonisation**

Implementing a decarbonisation pathway is not just about technology and operations; it is also about people and the human element is crucial. It involves not only training and education for our teams but also communication of our decarbonisation goals and incentives for our employees to contribute to these goals.

#### **Cross-Functional Collaboration**

Implementing a decarbonisation pathway involves a wide range of activities, from technical, operations to financial planning to human resources management. This requires effective collaboration between different departments, which can be challenging in a large organisation.

### 4.2 Solutions

#### **Establishing a Decarbonisation Team**

We have established a dedicated decarbonisation team comprised of representatives from key departments, including operations, finance, HR, and sustainability. With the invaluable support of our partners at Unifeeder and the DP World Group HSE Decarbonisation team, this specialized unit is responsible for developing, implementing, and continually monitoring our decarbonisation pathway. This ensures that our pathway is fully aligned with the company's overarching strategic objectives.



### Cross-Functional Collaboration

Establishing a decarbonisation team, in collaboration with Unifeeder and the DP World Group HSE Decarbonisation team, serves as a catalyst for cross-functional collaboration. This approach unites diverse perspectives and expertise from different departments and partners, thereby fostering innovation, problem-solving, and effective communication. Such cross-functional teams not only break down organizational silos but also ensure alignment toward the common goal of decarbonisation. This collective effort accelerates our progress and magnifies the impact of our decarbonisation pathway.

### Creating a Culture of Environmental Responsibility

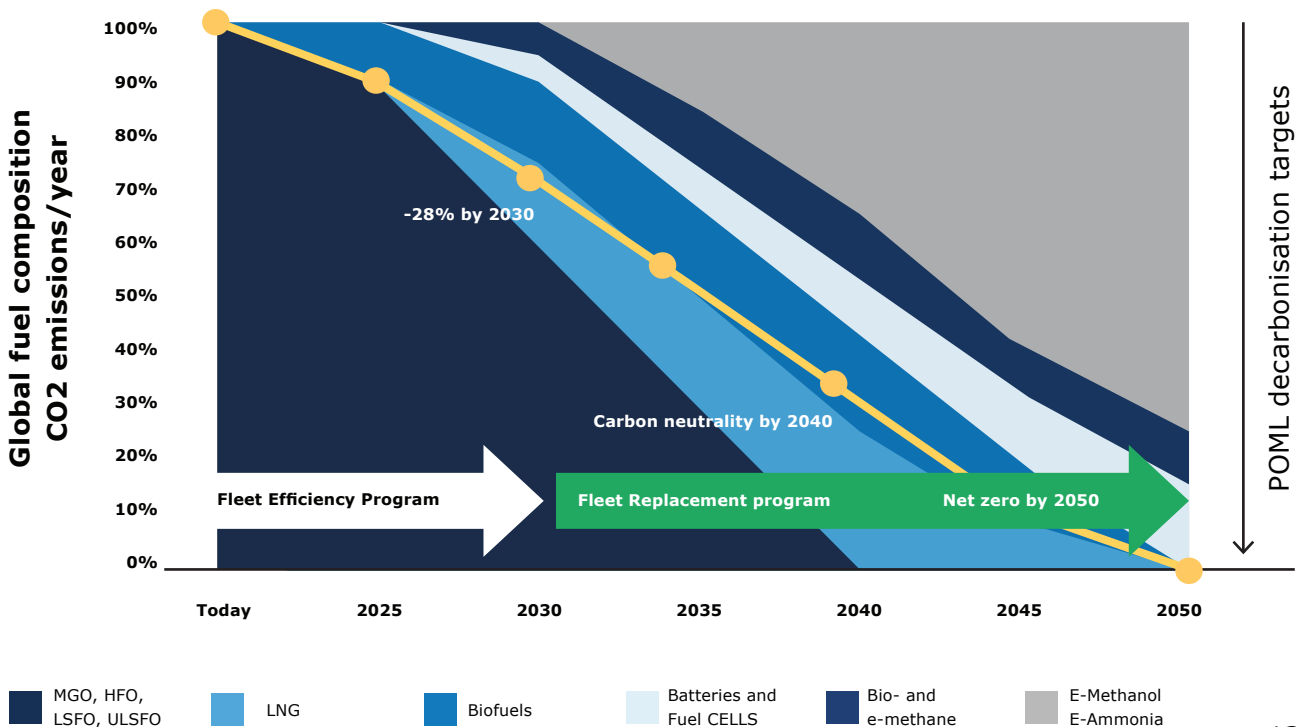
Clear, consistent communication serves as the cornerstone of our decarbonisation pathway, ensuring that everyone in the organization is both aware and invested in our collective sustainability goals. Alongside this, we harness the power of employee engagement by actively soliciting their ideas and feedback, thereby enriching our approach with diverse perspectives. Additionally, we value and reward contributions to our decarbonisation efforts, whether through formal recognition programs, incentives for energy-saving initiatives, or everyday acknowledgments. Together, these elements create an inclusive, dynamic environment where everyone is empowered to contribute to our sustainability journey.

### Leadership

Lastly, we recognise the importance of leadership commitment in shaping our organisational culture. As leaders, we set the tone for the organisation. Our commitment to decarbonisation is not just something we talk about; it is something we demonstrate through our actions and decisions. By leading through example, we can inspire our teams to embrace our environmental responsibility.

## Decarbonization Pathway

From fleet efficiency via fuel flexibility to net zero



## Conclusion

In conclusion, P&O Maritime Logistics is deeply committed to the intricate but crucial mission of decarbonization. We have set ambitious milestones along our journey, aiming for a 28% reduction in emissions by 2030, achieving carbon neutrality by 2040, and targeting net-zero emissions by 2050. Our multi-pronged approach incorporates a mix of alternative fuels, navigates complex regulatory landscapes, adapts our business model in collaboration with customers, and collaborates closely with suppliers to tackle scope 3 emissions. This strategy is all underpinned by a corporate culture fundamentally committed to environmental stewardship. We are not merely passengers on this transformative journey; we are the architects, directing the course with proactive, innovative strategies. Central to this endeavour is our dedicated decarbonization team, which fosters cross-functional collaboration to ensure agile and effective implementation. The path to a sustainable, low-carbon future is both challenging and exhilarating, yet we see it as more than just a destination—it is a transformative expedition that we are excited to champion. Facing challenges head-on, seizing opportunities, and continually adjusting our sails, we are unwavering in our voyage toward a greener, more sustainable horizon.

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