

# Wind First

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## One Planet Shipping Case Studies #1

### Introduction

Shipping is booming! Over the past 40 years, maritime transport has expanded by an impressive 250%. By 2023, the global merchant fleet counted over 100,000 ships, with a combined capacity of 2.2 billion deadweight tonnes (DWT) - and numbers continue to grow.<sup>1</sup> At the same time, however, shipping poses a growing threat to climate and ocean health. It supports unsustainable levels of international manufacturing and trade - major catalysts of climate breakdown and biodiversity collapse at sea and on land.

To address this, maritime transport urgently needs a new paradigm. *One Planet Shipping*, a Seas At Risk project to steer shipping down a more sustainable path, reframes maritime transport within our planet's boundaries. It argues that a more holistic approach to sustainable shipping can contribute to fair consumption, safe harbours, sustainable trade and a just transition. Four themes - Wind First, Reimagining Trade, All Aboard and Homeward Bound - serve as guiding principles for the vision.

By presenting two complementary case studies for each theme, this series aims to make the One Planet Shipping vision tangible. The first case study examines a recent event that disrupted global shipping, resulting in major financial, ecological or social consequences, and lays bare the underlying problem. The second introduces a concrete solution to that problem, that rethinks current models and illustrates what sustainable shipping within the One Planet Shipping narrative can look like.


### Summary


The first case study, *Drought in the Panama Canal*, explains how shipping traffic through the Panama Canal was heavily disturbed due to a year of extreme droughts. This resulted in major financial and environmental consequences for local communities and global trade. The drought was linked to climate change - a crisis to which maritime transport ironically contributes heavily.

But solutions do exist. The second case study, *Wind Propulsion in Brittany*, explores wind propulsion as a powerful tool to drastically reduce emissions. By zooming in on the region of Brittany (France), it highlights how regional and national initiatives and incentives can help the wind propulsion industry thrive - and contribute directly to the urgent decarbonisation of shipping.

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## Drought in the Panama Canal

### The drought

The Panama Canal, connecting the Atlantic and the Pacific Ocean, has been a major thoroughfare for international trade for over 100 years. Today, the waterway allows up to 1,000 ships to cross per month, carrying a total of over 40 million tonnes of goods - about 40 percent of US container traffic or five percent of global maritime trade volumes.<sup>2</sup>

In April 2023, one of the most persistent and severe droughts in the country set in, leading to a whole year of low water levels in both the canal and the Gatún Lake that provides water for the locks to operate. As a result, the canal authority imposed restrictions on ship draughts, curbing the amount of cargo they hold, and drastically limited the operation of the locks. The number of vessels passing through the canal was cut down by more than a third, leading to waiting times for merchant ships of more than 10 days.<sup>3</sup>

### The consequences

The year of extreme drought in the Panama Canal region had major consequences. Global trade was disrupted and shipments were delayed. The amount of economic loss is a subject of debate, but estimates suggest the crisis added approximately \$1.1 billion in shipping costs. The canal authority estimated a \$600 to \$800 million decline in revenues.<sup>4</sup>

To compensate for lost time, ships were compelled to travel faster, burning more fuel per mile, and to reroute their voyages. Many vessels followed longer maritime routes circumnavigating South America via Cape Horn, increasing directly and drastically their fuel consumption and carbon emissions.<sup>5</sup>

### Climate change

Scientists agree that the extreme drought was directly linked to El Niño, a recurring climate phenomenon in which warm ocean waters spread further into the Eastern Pacific Ocean, triggering both extreme rainfall and severe droughts.

Although El Niño is a natural phenomenon, growing scientific evidence shows that rising greenhouse gas concentrations are making these events more intense and more frequent around the world.<sup>6</sup>

The irony is then hard to ignore: the shipping industry - so heavily affected by drought - is itself a major contributor to climate change. Today, the industry is responsible for roughly 3% of global emissions, comparable to a midsize industrialised country such as Germany or Japan. At current growth rates that share could rise to 10% by 2050.<sup>7</sup>

If maritime transport wants to safeguard its own future, a radical shift away from fossil fuels seems therefore ever more urgent. Swift decarbonisation will help reduce the risk of extreme weather conditions, as well as their serious consequences for local communities and global trade.



Cargo ships waiting in Panama Bay for transit through the Panama Canal during the 2023-2024 drought. (© Agustín Herrera/The Associated Press)

#1 The State of Shipping and Oceans (2023), Seas At Risk

#2 Climate Change is Disrupting Global Trade (2023), IMF

#3 'Unprecedented challenges': Drought at the Panama Canal disrupts global trade (2023), WEF

#4 Panama: Crisis In The Canal (2024), Global Finance

#5 The Climate Impact of Avoiding the Panama and Suez Canals (2024), TIME

#6 El Niño and La Niña have become more extreme and frequent because of climate change, study finds (2023), ABC News

#7 What is the impact of shipping on climate change? (2025), T&E

# Wind Propulsion in Brittany

## Wind first

Under its Wind First theme, One Planet Shipping advocates for prioritising wind power as a key energy source in the decarbonisation of the shipping sector. While high tech alternative fuels often dominate the conversation - despite their typically low energy efficiency - the big potential of wind propulsion to cut emissions and reduce dependence on fossil fuels must not be overlooked.<sup>8</sup>

Technologies that harness wind power, from modern sails to rotor systems, are ready to be deployed. In the short term, retrofitting vessels with wind-assisted propulsion systems (WAPS) is estimated to achieve up to one third of the IMO's 2030 GHG emissions reduction target of 30%.<sup>9</sup>

## Brittany under sail

If there is one European region where the wind propulsion industry has taken big steps in recent years, it is Brittany. Located on France's western coast, Brittany has always had a strong connection to the ocean, and the region has long been a hub for (competitive) sailing.

About 10 years ago, several companies developing wind solutions for shipping began establishing themselves in the region. While some worked on retrofittable systems for cargo vessels, others - like Grain De Sail, TOWT or Neoline - started conceiving full sail newbuilds, capable of saving several hundred tonnes of CO<sub>2</sub> per transatlantic crossing.<sup>10</sup>

To tap into that potential, the regional government of Brittany in 2021 formally adopted a roadmap for the wind propulsion sector setting out key objectives, and mandated Bretagne Développement Innovation (BDI) to develop the sector and its value

chain by assisting companies to find the right partners and funding.<sup>11</sup> They also commissioned a study on the sector, which revealed that Brittany had 61 active actors in the market at the time, representing 155 jobs and €28 million in yearly sales.<sup>12</sup>

## New incentives

Today, four years later, the Breton wind propulsion sector is thriving even more, with 92 active companies and another 63 interested in joining. Their activities are diverse, ranging from engineering and designing to production and installation.<sup>13</sup> And the sector is expected to keep growing. On a national level, the *Loi Vélisque* was recently proposed, a law building on the earlier adopted *Pacte Vélisque* providing clearer legal frameworks and stronger support mechanisms.<sup>14</sup>

It shows how the right networks, incentives and policies can create the right conditions for a performant wind propulsion industry. As a frontrunner, Brittany can inspire other regions to take a similar course - and contribute directly to the urgent decarbonisation of shipping.



The Anemos, TOWT's 80-meter long sailing cargo vessel, crossing the Atlantic Ocean. (© TOWT/Ronan Gladu)

#8 One Planet Shipping - Navigating the waves of climate change and overconsumption (2024), Seas At Risk

#9 Wind First! How wind-assisted ship propulsion is the zero-emission fuel for shipping's future (2025), Seas At Risk

#10 Decarbonised shipping: The wind as solution (2025), TOWT

#11 Transport maritime et propulsion par le vent: lancement de la filière bretonne (2021), Bretagne Développement Innovation

#12 Wind Propulsion for Shipping (2022), Bretagne Développement Innovation

#13 État des lieux du marché du transport maritime propulsé par le vent en Bretagne (2025), Bretagne Développement Innovation

#14 Une proposition de loi pour soutenir le vélisque français déposée à l'assemblée nationale (2025), Mer et Marine