

# Ocean Disclosure Initiative

TRANSPORTATION  
AND LOGISTICS  
INDUSTRY REVIEW

SDA Bocconi  
SCHOOL OF MANAGEMENT  
SUSTAINABILITY LAB

McKinsey  
& Company

 CSIC  
CONSEJO SUPERIOR DE INVESTIGACIONES CIENTÍFICAS

## Table of contents

About One Ocean Foundation	04
About the Ocean Disclosure Initiative	05
Introduction to the transportation and logistics industry	07
The main pressures exerted by the transportation and logistics industry	10
In Depth: Innovations in logistics	20
The importance of disclosing the business pressures on the ocean	21



# About One Ocean Foundation

This research has been carried out by the One Ocean Foundation as part of its Ocean Disclosure Initiative project.

The mission of the Foundation is to accelerate solutions to ocean issues by inspiring international leaders, institutions, companies and people, promoting a blue economy, and enhancing ocean knowledge through ocean literacy. The Foundation intends to develop a leading platform, bringing together and strengthening the voices speaking out on behalf of the ocean around the world.

The distinctive feature of the One Ocean Foundation is its scientific scope and, at the same time, its strong educational drive, with the aim of increasing awareness and establishing constructive relationships between all stakeholders engaged in marine preservation at different levels.

Thanks to its extensive network of partners, the One Ocean Foundation is engaged in numerous unique, innovative, and high-value projects related to its mission of ocean protection in three main areas: education, environmental research, and the blue economy.

For information please contact  
the One Ocean Foundation at:  
[secretariat@1ocean.org](mailto:secretariat@1ocean.org)  
Tel: +39 02796145  
Via Gesù 10, Milan - Italy

To see the latest One Ocean Foundation  
contents please visit:  
[www.1ocean.org](http://www.1ocean.org)

# About the Ocean Disclosure Initiative

The Ocean Disclosure Initiative project is part of the multi-year research “Business for Ocean Sustainability” promoted by the One Ocean Foundation (OOF) in collaboration with SDA Bocconi School of Management Sustainability Lab, McKinsey & Company and CSIC (Consejo Superior de Investigaciones Científicas) and aimed at building knowledge about the relationship between business activities and the ocean.

The project commenced in 2019 with the goal of investigating the role of companies in addressing ocean challenges, focusing on the pressures on marine ecosystems, the level of awareness within the business community and the main responses (technological and organisational) implemented.

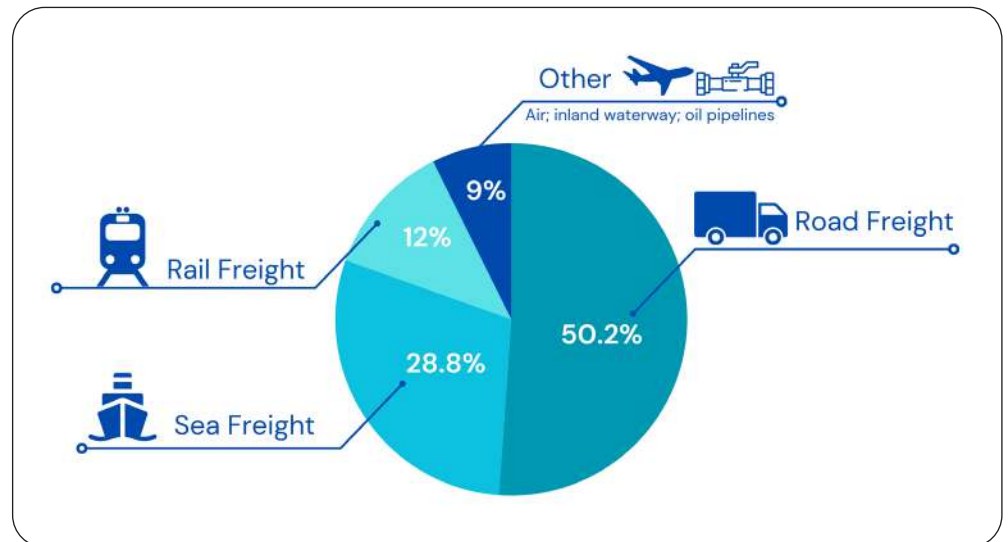
The Ocean Disclosure Initiative aims to provide a science-based framework and methodology with the objective of supporting businesses from all industries in taking action on ocean-related issues, promoting prevention and/or mitigation responses, and favouring disclosure and reporting.



# Introduction to the transportation and logistics industry

The transportation and logistics sector refers to the industry involved in the movement of goods along with the associated logistics services that support this movement. There are four major modes of freight transport: air freight or airlines, road, rail, and maritime transportation, each with their accompanying infrastructure and supply chains. Figure 1 illustrates these modes of transportation with the relevant estimated percentage of goods moved. Overall, the sector represents an essential network that facilitates the global exchange and movement of goods, supporting economic connectivity across regions.

FIGURE 1: Freight movement split by mode of transport in EU-27



Source: Author's elaboration from European Environment Agency, (2023) "Transport and Environment Report 2022"

**THE TRANSPORTATION AND LOGISTICS INDUSTRY IS A KEY DRIVER OF GLOBAL TRADE, FUELING ECONOMIC GROWTH AND CREATING JOBS WORLDWIDE**

Therefore, it can be asserted that the transportation and logistics industry is the heartbeat of the global economy and a key enabler of global trade, supporting economic growth, creating jobs and connecting people with essential services.

In the EU alone, transport services are supported by a vast network of approximately 1.3 million private and public companies, employing around 10.2 million people.<sup>1</sup> The sector is constantly growing, with expansion driven by various factors such as urbanisation, population growth and movement of people; the accelerating demand for online shopping via e-commerce platforms; and infrastructure development. In addition, under the Current Ambition scenario outlined by the International Transport Forum, freight demand will nearly double by 2050.<sup>2</sup>

Transportation and logistics services undoubtedly come with several socioeconomic benefits, but can potentially exert several pressures on the environment, including marine and coastal ecosystems. Nevertheless, the full extent of potentially damaging effects on the ocean are often not fully recognised by the companies operating in the sector. While the visible impact of exhaust emissions on atmospheric pollution is widely recognised, the indirect pressures exerted on the marine environment are less evident. These include, inter alia, pollution from plastic or other materials — stemming from tyre and brake abrasion and contributing to the issue of marine litter, and chemical contamination of seawater due to oil leakages from road transportation, potentially entering the marine environment through wastewater runoff.

Conducted within the framework of the Ocean Disclosure Initiative (ODI), this industry review looks at road, air and rail transportation, while maritime transportation is the subject of a separate industry review.<sup>3</sup>

The analysis involved a comprehensive review of relevant publications on the environmental pressures of the industry, along with sustainability reports from prominent companies operating in the sector. The core objective of the analysis is to map and better understand the pressures exerted on marine ecosystems, thus creating the basis for the industry-specific edition of the ODI questionnaire. To this end, the following paragraphs introduce the industry and present its main pressures on the ocean.

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1. European Commission (2024) “Transport in the European Union: Current trends and issues” [online]. Available at: <https://op.europa.eu/en/publication-detail/-/publication/d8a8fbfe-32b4-11ef-a61b-01aa75e-d71a1>

2. International Transport Forum, (2023). “ITF Transport Outlook 2023” [online]. Available at: [https://read.oecd-ilibrary.org/transport/itf-transport-outlook-2023\\_b6cc9ad5-en#page17](https://read.oecd-ilibrary.org/transport/itf-transport-outlook-2023_b6cc9ad5-en#page17)

3. One Ocean Foundation (2024) “Maritime Transportation industry review” Available at: [https://cdn.prod.website-files.com/622f5dc681e480028f7fc611/65cf7e25547ebdf0b5d292f0\\_ODI\\_Industry%20Review%20Maritime%20Transportation.pdf](https://cdn.prod.website-files.com/622f5dc681e480028f7fc611/65cf7e25547ebdf0b5d292f0_ODI_Industry%20Review%20Maritime%20Transportation.pdf)

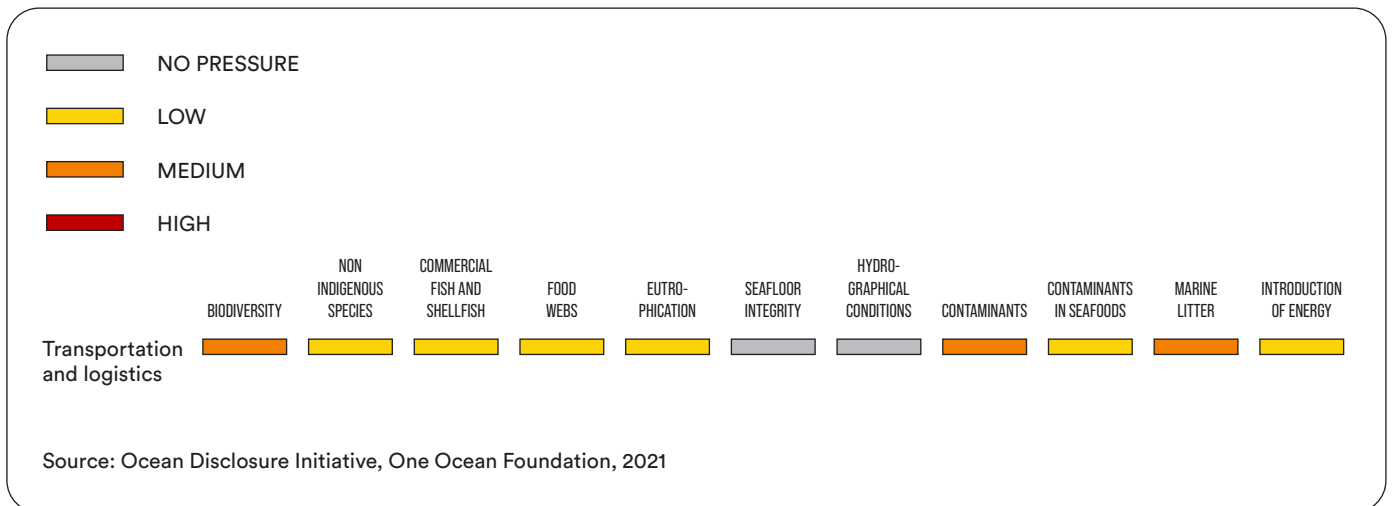


The industry review conducted within the framework of the ODI project, as shown in Figure 2, verified that the most significant pressures on ocean health exerted by the transportation and logistics sector, marked in orange, concern:

- Loss of biodiversity
- Introduction of contaminants
- Introduction of marine litter

Furthermore, the following paragraphs will also discuss how the sector’s emissions of greenhouse gases (GHGs) and other air pollutants can lead to the degradation of marine and coastal ecosystems. Finally, the introduction of energy in the form of noise is also considered as a potential pressure on marine biodiversity.

FIGURE 2: Review of negative pressures of the transportation and logistics industry



# The main pressures exerted by the transportation and logistics industry

## Biodiversity loss

Oil spills, plastic pollution, and greenhouse gas (GHG) emissions from the transportation and logistics sector pose significant threats to marine biodiversity, potentially leading to its decline or loss. A major driver of this impact is the combustion of fossil fuels, such as petrol and diesel, which releases GHGs and other pollutants that harm marine and coastal ecosystems by contributing to global warming and ocean acidification. Additionally, oil runoff from roads and drainpipes contaminates seawater, disrupting its chemical balance and degrading water quality, which negatively affects marine organisms. Furthermore, microplastics generated from tyre and brake abrasion enter the ocean as marine litter, causing severe harm to marine life through ingestion, leading to digestive damage, hormonal imbalances, and impaired growth. These combined pressures from the transportation and logistics industry create cascading pressures on marine ecosystems, accelerating biodiversity loss.

## Introduction of contaminants

Large spills account for only 12% of the oil discharged into the ocean, with three times as much oil introduced into the marine environment through oil runoff originating from roads and drainpipes.<sup>4</sup> It may not seem obvious how pollution from land and air transportation is linked to the contamination of the ocean, however fuel, chemicals, and hazardous particulates discarded by aircraft, cars and trucks find their way into marine environments mainly through land-based runoff, often originating from motor oil leaks, where they contribute to changes in the chemical composition of seawater and water quality in general. It is estimated that oil discharges generated by the transportation industry have increased by 20% in the past two decades.<sup>5</sup>

**RUNOFF FROM ROADS AND DRAINPIPES INTRODUCES THREE TIMES MORE OIL TO THE OCEAN THAN LARGE SPILLS FROM SHIPPING**

4. Ocean Action Hub. "80% Of Pollution To Marine Environments Originates from Land Sources – Including Car Pollution" [online]. Available at: <https://www.oceanactionhub.org/80-pollution-marine-environments-originates-land-sources-including-car-pollution/>

5. National Academies of Sciences, Engineering, and Medicine. (2022) Oil in the Sea IV: Inputs, Fates, and Effects.

## Good practices

### REGULAR VEHICLE MAINTENANCE IS CRUCIAL FOR PREVENTING OIL SPILLS FROM ROAD TRANSPORTATION

Regular vehicle maintenance is essential in order to avoid oil spills from road transportation. This preventative approach helps ensure that all parts of the vehicle are operating correctly, minimising the risk of leaks or spills during movement. Additionally, routine maintenance helps detect and rectify wear and tear, corrosion, or damage to critical components, reducing the likelihood of mechanical failures that could also lead to oil spills.

## Introduction of marine litter

### PARTICLES FROM TYRE EROSION ARE THE SECOND-LARGEST SOURCE OF MICROPLASTICS IN THE OCEAN

The erosion of tyres due to use significantly contributes to the introduction of marine litter in the ocean. An average tyre releases approximately 4 kg of microplastics throughout its lifetime, resulting in a staggering global annual total of 6.1 million tonnes.<sup>6</sup> These microplastics not only are produced in vast quantities, but can also travel over long distances by air or be washed into water bodies by rain, thus contaminating marine ecosystems. Every year, 100,000 metric tonnes of microplastics are shed from tyres and dumped in the ocean.<sup>7</sup> As a result, tyres represent the second largest source of microplastics in the world ocean, accounting for 28% of the total amount, surpassed only by synthetic fibres.<sup>8</sup>

The effects of microplastics on marine fauna are detrimental as they can be ingested, causing starvation, endocrine disruption, stunted growth, and injury to digestive systems. Moreover, microplastics can accumulate within organisms and transfer through the trophic levels, ultimately affecting the entire food chain, including humans.

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6. Reuters, (2023). "Rising microplastics in seas puts pressure on tyre industry" [online]. Available at: <https://www.reuters.com/sustainability/land-use-biodiversity/rising-microplastics-seas-puts-pressure-tyre-industry-2023-07-17/>

7. The Conversation, (2020). "How your car sheds microplastics into the ocean thousands of miles away" [online]. Available at: <https://theconversation.com/how-your-car-sheds-microplastics-into-the-ocean-thousands-of-miles-away-142614>

8. IUCN (2017). "Primary Microplastics in the Oceans: a Global Evaluation sources" [online]. Available at: <https://portals.iucn.org/library/sites/library/files/documents/2017-002-En.pdf>

In addition, brakes can also deteriorate through the friction between metal rotors and multi-layer brake pads. Brake linings are made of five main components: binders, fibres, fillers, frictional additives or lubricants, and abrasives. When the brake pad makes contact with the disc, it generates particles of different sizes due to the friction. In addition to mechanical abrasion, braking creates significant heat, causing the linings and rotors to wear down and produce mostly micron-sized particles. Not all of these particles become airborne, some settle on the road surface and can end up in the ocean, entering the water cycle.

FIGURE 3: Air-water exchange of abrasion-derived microplastics from traffic



Source: Author's elaboration

Another important aspect linked to the issue of plastic pollution in the ocean is packaging. Apart from the transportation of goods, logistics companies are responsible for the packaging and safety of the products they transport. Transportation packaging, also known as tertiary packaging, protects the product during storage and transportation. There are three main types of transportation packaging: containers, pallets and liquid storage tanks or drums. Containers, such as boxes and crates, can be made from many types of materials including cardboard, plastic, and metal. Pallets are traditionally made from wood, although plastic pallets are an option. Liquid storage containers, on the other hand, can be made from metal or plastic.

Plastic is the most widely used material. Its low cost, light weight and durability make plastic a perfect material for packaging. However, despite its practical advantages, its environmental impact is substantial. In fact, according to the United Nations Environment Programme, around 36% of the world's plastic production is used in packaging,<sup>9</sup> and 85% of this ends up in landfills.<sup>10</sup> Therefore, extensive use and mismanagement of plastic in the operational activities of transportation and logistics companies indirectly contribute to the proliferation of marine litter in the ocean. Plastic particles from packaging contaminate the ocean, adversely affecting water quality and posing a severe threat to the well-being of marine biodiversity and aquatic ecosystems.

### Good practices

To effectively reduce the generation of microplastics from tyre erosion, a comprehensive approach must be adopted, focusing on the final use phase.

For the purpose of this review of the transportation and logistics industry, the main emphasis is on mitigation efforts that can be applied by business operators during vehicle movement. In this framework, focusing on optimising vehicle operation parameters such as tyre pressure, wheel alignment, vehicle load, speed, driving conditions and driving behaviour, represent good practices that can be applied relatively easily.<sup>11</sup> Companies within the sector should carefully consider their choice of suppliers and collaborators, prioritising tyre manufacturing companies that adhere to sustainable practices throughout their production processes, such as the use of sustainable raw materials (natural rubber and recycled materials), energy efficiency, emissions reduction and the application of ESG requirements to the supply chain. Furthermore, encouraging eco-driving practices, such as maintaining lower and constant speeds, can significantly reduce tyre wear. In the recycling phase, when tyres reach the end of their operational life, proper collection and recycling are essential to minimise waste.

**TO REDUCE  
MICROPLASTICS  
FROM TYRE EROSION,  
COMPANIES COULD  
PRIORITISE SUSTAINABLE  
TYRE SUPPLIERS,  
PROMOTE ECO-DRIVING  
AND ENSURE PROPER  
TYRE RECYCLING**

9. UNEP, (2023). "Everything you need to know about plastic pollution" [online]. Available at: <https://www.unep.org/news-and-stories/story/everything-you-need-know-about-plastic-pollution>

10. Ibidem.

11. OECD (2021). Policies to Reduce Microplastics Pollution in Water: Focus on Textiles and Tyres [online]. Available at: [https://www.oecd-ilibrary.org/sites/7ec7e5ef-en/1/3/3/index.html?itemId=/content/publication/7ec7e5ef-en&csp\\_=ff2633d8c36c71f785df2de9984c508f&itemIGO=oecd&itemContentType=blook#section-d1e12155](https://www.oecd-ilibrary.org/sites/7ec7e5ef-en/1/3/3/index.html?itemId=/content/publication/7ec7e5ef-en&csp_=ff2633d8c36c71f785df2de9984c508f&itemIGO=oecd&itemContentType=blook#section-d1e12155)

Additionally, to address environmental issues in logistics and mitigate plastic pollution, companies can incorporate sustainable packaging practices in their operations. This can be achieved by reducing packaging waste, utilising recyclable or biodegradable materials, and adopting renewable energy sources in the production process.

For instance, implementing new and alternative materials such as seaweed, mushrooms, edible films, or replacing traditional materials like bubble wrap with inflatable air pillows could provide possible solutions.<sup>12</sup> To further minimise packaging waste, logistics companies can use recycled materials such as recycled cardboard, or encourage customers to return and reuse empty product containers. Furthermore, optimising freight loads and managing customer package dimensions and weights can lead to increased cargo efficiency and a reduction in overall waste in logistics.

### GHG emissions and air pollution

Transportation is widely recognised as a significant and growing source of air pollution worldwide. This is due to its reliance on oil products, accounting for almost 91% of its final energy consumption, down only 3.5% since the early 1970s.<sup>13</sup> GHG emissions from the industry are composed mainly of carbon dioxide (CO<sub>2</sub>) resulting from the burning of petroleum-based products, such as gasoline and diesel fuel, in internal combustion engines.

Recent data from the World Bank show that the transportation and logistics sector<sup>14</sup> currently accounts for 20% of global greenhouse gas (GHG) emissions. As populations expand, economies thrive, and the demand for mobility rises, emissions from the sector could increase by up to 60% by the year 2050.<sup>15</sup>

**THE SECTOR IS A  
SIGNIFICANT SOURCE  
OF AIR POLLUTION,  
ACCOUNTING FOR 20%  
OF GHG EMISSIONS,  
PRIMARILY FROM THE  
BURNING OF PETROLEUM  
PRODUCTS**

12. DHL (2023). "Green packaging and why it is important to your business" [online]. Available at: [https://www.dhl.com/discover/en-global/logistics-advice/sustainability-and-green-logistics/sustainable-packaging-in-logistics?\\_ga=2.174771558.554558632.1705591301-1438126324.1705591301](https://www.dhl.com/discover/en-global/logistics-advice/sustainability-and-green-logistics/sustainable-packaging-in-logistics?_ga=2.174771558.554558632.1705591301-1438126324.1705591301)

13. International Energy Agency (IEA), (2023). [online]. Available at: <https://www.iea.org/energy-system/transport>

14. With the inclusion of maritime transportation.

15. World Bank, (2023). [online]. Available at: <https://www.worldbank.org/en/topic/transport/overview>

In the European context, road transportation is the largest contributor to transportation emissions. In 2022, it generated around 80% of total GHG emissions from the transportation sector,<sup>16</sup> compared to approximately 11% for aviation. According to the International Energy Agency, in 2022 aviation accounted for 2% of global energy-related CO<sub>2</sub> emissions, having grown faster in recent decades than other types of transport,<sup>17</sup> while the emissions from rail transportation are limited to less than 1%.

The impact of GHG emissions on global warming has significant implications for water temperature, as the ocean absorbs surplus heat from the atmosphere. Ocean warming represents the main driver for rising sea-levels, coral bleaching, and biodiversity loss. Even a small increase in the sea level has the potential to cause detrimental impacts on coastal habitats, damage to infrastructure and disturbance for local communities. Rising water temperature leads to deoxygenation, which exerts negative pressures on marine biodiversity including high levels of mortality, loss of breeding grounds and mass migration. Furthermore, the absorption of carbon dioxide by the ocean contributes to ongoing ocean acidification, with a detrimental impact on marine ecosystems, especially those relying on calcium carbonate structures like coral reefs. Increasing temperatures and acidification could thus jeopardise the ocean's capacity to provide sustenance, livelihoods, and safe coastal living for billions of people.

Besides emitting CO<sub>2</sub> from burning fuel, the transportation industry, in particular air transportation, affects the concentration of other gases and pollutants in the atmosphere such as nitrogen oxides (NO<sub>x</sub>), hydrocarbons (HC), sulphur oxides (SO<sub>x</sub>), and other gases.<sup>18</sup> Additionally, hydrofluorocarbon (HFC) emissions also occur in the sector, associated with the use of mobile air conditioners and refrigerated transport.<sup>19</sup>

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16. European Environment Agency, (2023). "Transport and Environment Report 2022" [online]. Available at: <https://www.eea.europa.eu/publications/transport-and-environment-report-2022/transport-and-environment-report/view>

17. International Energy Agency (IEA), (2023). [online]. Available at: <https://www.iea.org/energy-system/transport/aviation>

18. International Civil Aviation Organization, (2011). "Airport Air Quality Manual" [online]. Available at: <https://www.icao.int/environmental-protection/Documents/Doc%209889.SGAR.WG2.Initial%20Update.pdf>

19. United States Environmental Protection Agency (EPA), (2023). "Sources of Greenhouse Gas Emissions" [online]. Available at: <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>

## Good practices

To reduce GHG emissions, a key objective is to significantly boost the use of low-emission modes of transport and alternative fuels, in the form of cleaner electric (or hybrid) vehicles, sustainable fuel and hydrogen fuel.

Adopting new technologies aimed at reducing fuel consumption and ensuring the timely renewal of vehicle fleets could represent another way of moving the industry towards a more sustainable model. This proactive approach not only aligns with the broader goal of minimising emissions, but also contributes to businesses' operational efficiency.

Given that fuel is the primary contributor to transportation's environmental footprint, adopting new, alternative types of fuel, such as hydrogenated vegetable oil, hydrogen fuel, SAF (Sustainable Aviation Fuel) and others, is crucial to any solution. Hydrogen fuel has emerged as a promising alternative. Hydrogen-powered vehicles, using fuel cells, convert energy to electricity more efficiently, making them two to three times more effective than internal combustion engines. These fuel cells also reduce vibrations and noise. Hydrogen fuel allows for longer travel distances, making it suitable for heavy-duty vehicles, such as trailers and buses, or for aviation.<sup>20</sup> Powering aviation with hydrogen fuel presents substantial technological and environmental advantages – its efficiency is 45-50% higher than conventional fuel<sup>21</sup> – and it could be used to fuel larger planes because of its high gravimetric energy density. Despite these notable benefits, transitioning to hydrogen-based fuel systems poses several challenges: they require large and heavy storage capacities, a lot of new infrastructure, and design changes that are difficult to implement given the current level of technologies.

Another alternative to kerosene in air transportation is Sustainable Aviation Fuel (SAF). SAF is a biofuel derived from renewable biomass and a variety of waste resources such as waste oil and fats, used clothing and others. However, current technology allows fuel to be produced from other alternative sources, including non-biological resources.

**TO REDUCE GHG EMISSIONS, IT IS ESSENTIAL TO USE ALTERNATIVE FUELS, SUCH AS SUSTAINABLE AVIATION FUEL (SAF), AND HYDROGEN FUEL**

20. Vehicle Technologies Office, (2022). [online]. Available at: <https://www.energy.gov/eere/vehicles/articles/hydrogens-role-transportation>

21. Wri India, (2023). "Decarbonizing the Aviation Sector: The Role of Hydrogen" [online]. Available at: <https://wri-india.org/blog/decarbonizing-aviation-sector-role-hydrogen>



SAF could offer a significant reduction in lifecycle emissions, ranging from 75-95% when compared to traditional fuel.<sup>22</sup> Nevertheless, despite its environmental benefits, SAF is not yet widely used and currently constitutes less than 0.1% of all aviation fuel consumed.<sup>23</sup> At the moment, several manufacturers and operators have conducted flights powered entirely or partially by SAF,<sup>24</sup> which proves its potential for deployment in current infrastructure, engines and aircraft, with minor adjustments to fuel delivery equipment. Achieving the ambitious goal of increasing SAF use in aviation will require substantial investment and technology. Supportive policies, including fuel taxes and low-carbon fuel standards, will play a crucial role in facilitating this transition toward a more sustainable future for aviation.

In general terms, implementing real-time monitoring of transportation pollution is crucial to mitigating and limiting pollutant and GHG emissions, which is vital to preserve ocean health.

By employing advanced monitoring systems, authorities can identify areas with conflicting interests or hotspots where pollution levels pose a significant threat to the environment and public health. In response to these findings, the establishment of Low Emission Zones (LEZs) can become an effective strategy. LEZs are defined areas where access by certain polluting vehicles is either restricted or prohibited. The creation of LEZs not only acts as a protective measure for improving air quality within those zones, but also encourages the adoption of sustainable mobility solutions.

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22. World Economic Forum, (2023). "Net-Zero Industry Tracker 2023 Edition" [online]. Available at: [https://www3.weforum.org/docs/WEF\\_Net\\_Zero\\_Tracker\\_2023\\_REPORT.pdf](https://www3.weforum.org/docs/WEF_Net_Zero_Tracker_2023_REPORT.pdf)

23. World Economic Forum, (2023). "What is sustainable aviation fuel and why are only 0.1% of flights powered by it?" [online]. Available at: <https://www.weforum.org/agenda/2023/11/what-is-sustainable-aviation-fuel/>

24. BBC, (2023). "Groundbreaking transatlantic flight using greener fuel lands in the US" [online]. Available at: <https://www.bbc.com/news/business-67548961>

## Additional considerations

### Introduction of energy in the form of noise

Addressing the impact of noise is important when discussing the pressures created by the transportation and logistics industry. Noise from airplanes has understandably been overlooked due to the poor transmission of sound across the air-water interface. However, there might be some circumstances where airborne noise cannot be ignored. Many of the world's busiest airports, including those in Tokyo, New York, Singapore, Miami, etc., have coastal runways. According to researchers, 11% of global airports are located within low elevation (i.e. <10m of mean sea level) coastal zones.<sup>25</sup> Airplane noise could therefore potentially affect coastal areas.

In order to acknowledge the pressure exerted on the ocean by this noise, it is important to re-evaluate the effects of airplane noise on coastal marine habitats and species. Reduction of noise levels in the air would be a solution to the impact of noise in the water.

### Infrastructure development and maintenance

It is worth adding that construction and maintenance of the infrastructure required for transportation, such as airports and railroads, can have significant environmental consequences. Such development often leads to habitat destruction and fragmentation, which reduces the available habitat for marine species and disrupts their migration and breeding patterns, thereby threatening biodiversity. Additionally, the construction and maintenance of transportation infrastructure, particularly near-shore or on-shore, can result in increased sedimentation in nearby water bodies, compromising sea floor integrity and further affecting marine ecosystems.

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25. Nicholls, R.J., Kebede, A.S., 2010. The Implications on the UK of the Impacts of Climate Change and Sea-level Rise on Critical Coastal Infrastructure Overseas, 2010 to 2100. United Kingdom Government Office for Science.



# In Depth: Innovations in logistics

One key aspect of today's transportation and logistics system is the increasing importance of supply chain transparency. New, innovative technologies could represent a solution for the industry. Various businesses are demanding enhanced levels of transparency in their supply chains, ensuring that products are sourced and transported in an environmentally responsible manner. Companies in the logistics sector are thus being urged to develop and implement advanced technological solutions, including blockchain and other digital tools, designed to track and verify the sustainability of products throughout their journey along the supply chain. These new technologies could help reduce unnecessary energy use and carbon emissions, making the logistics industry more sustainable.

As we explore innovative ways to minimise waste and promote more sustainable business models, it is important to explore what circularity, and sustainable logistics could offer to transform traditional open-loop supply chains into closed-loop ones. The logistics sector could become a linchpin in facilitating this forward and reverse flow of products, ensuring the efficient circulation of goods and minimising the environmental impact of the industry. To achieve the circular logistics model, affordable reverse take-back programmes need be created and the transparency of information on logistics networks should be guaranteed.

On the benefits side, the circular transformation of the sector will create numerous opportunities, including sourcing cheaper material inputs locally, minimising costs for other operational activities, and reducing the ecological burden on the environment.

**INNOVATIVE TECHNOLOGIES SUCH AS BLOCKCHAIN FOR TRACKING PRODUCT JOURNEYS AND THE ADOPTION OF A CIRCULAR LOGISTICS MODEL COULD SIGNIFICANTLY ENHANCE THE SUSTAINABILITY OF THE SECTOR**

# The importance of disclosing industry pressures on the ocean

This industry-specific edition of the Ocean Disclosure Initiative tool dedicated to the transportation and logistics sector, developed by One Ocean Foundation in collaboration with its partners, reflects the main pressures exerted by this sector in order to support companies in becoming aware of their impacts on marine ecosystems, assessing the related risks, and disclosing key information and strategic responses on the significant issues related to transportation activities.

As identified in our research and reflected in the industry-specific tool, these pressures include i) substantial GHG emissions due to combustion of liquid fossil fuel for engine functioning; ii) release of hazardous substances or contaminants into water bodies, with particular focus on oil spillages; iii) introduction of marine litter due to tyre erosion and non-sustainable packaging systems; iv) introduction of energy in the form of noise.

Today's transportation and logistics industry must commit to sustainable practices in addition to documenting and disclosing their efforts. Such transparency will foster trust and accountability within the industry, enabling the market to make well-informed choices about the partners it chooses to engage with.

The importance of the Ocean Disclosure Initiative is related to the fact that, for the first time, companies, scientific and financial communities, and civil society can rely on a common language to measure, address, and mitigate the most relevant pressures that humanity exerts on the marine environment, sector by sector, with significant advantages for the health of the ocean.



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secretariat@1ocean.org  
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