

# Transporting Medicines and Vaccines

**GRI Standards:**

302-5, 305-5: Emissions

**PLANET CARE**

At Sanofi, the dedication to improving people's lives goes beyond innovations in healthcare. As a global organization, Sanofi also bears great responsibility in caring for the planet. Every day, Sanofi is minimizing the environmental impacts of its products and activities while strengthening its business resilience in the face of environmental changes.

Through the Planet Care program, Sanofi sets clear goals and is mobilizing employees, partners to join in taking action for the planet.

- **Fight climate change:** build the road to carbon neutrality by 2030 and net zero emissions by 2045 by engaging Sanofi towards the 1,5°C global warming trajectory
- **Limit our environmental footprint and aim for circular solutions** by optimizing the use/reuse of resources and reducing impact of emissions
- **Improve environmental profile of products by** by delivering eco-innovative products and by fostering a sustainable use of medicines
- **Mobilize our people for environmental sustainability** by promoting an environmentally conscious culture in the workplace
- **Engage our suppliers in our environmental ambitions by** sourcing responsibly and leading by example

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## 1. Our commitments to “transportation of medicines and vaccines”

In order to fulfil its public health mission and to ensure the delivery of medicines and vaccines to the market without interruption, Sanofi considers the supply chain and the delivery of medicines to be among the company’s most important responsibilities. Protecting patients’ health is a priority challenge every day, as well as reducing the company’s impact on the environment and the guarantee of its products’ safety. Medicines, especially vaccines and insulins, are very sensitive products which require very strict rules in terms of temperature all along the supply chain from production to distribution.

To address these multiple challenges regarding transportation, the Supply Chain management team within Sanofi keeps an eye on reducing environmental impacts and company’s direct and indirect greenhouse gas emissions, as well as ensuring sustainable medicine transportation. This means choosing seaways instead of air transportation, developing railways transportation, optimizing truck, container and pallet occupancy, and promoting green models such as using gas, biogas or electric vehicles whenever it is possible. Furthermore, Sanofi Supply Chain management is investigating packaging optimization, which leads to the reduction of our environmental footprint.

## 2. Performance

The Transportation Department is part of the Supply Chain organization within Global Manufacturing & Supply. Sanofi’s transportation strategy’s objective is to guarantee the continuous supply of drugs and vaccines to our patients without any disruption. This global strategy has been developed and implemented throughout the Company.

The Supply Chain Management team is responsible for enforcing various processes on all sites where the Company operates (more than 75 Sanofi plants and 100 distribution centers belonging to Sanofi or external partners), ensuring controlled processes, as well as compliance with our continuous improvement policy.

There are several ways to transport our medicines and vaccines such as:

- delivery of products between our plants - we deliver products between our chemistry plants and pharmaceuticals plants in the most optimized way, determined according to location;
- delivery to our distribution centers - our products are consolidated and exported from our export hub to our local distribution centers. Pallet optimization and truck occupancy are key parameters to improve
- the transportation of our goods. This organization enables massification associated with cost competitiveness and a sustainable strategy.
- delivery to our customers - this includes wholesalers, hospitals, and pharmacies.
- delivery in cities (the last kilometer); and
- Sanofi asks all his partners to develop sustainable solutions such as:
  - > alternative fuels for trucking (gas, truck electrical...);
  - > use of ferries or River Boats, rail; and
  - > reusable cold chain packaging.

### 3. Actions

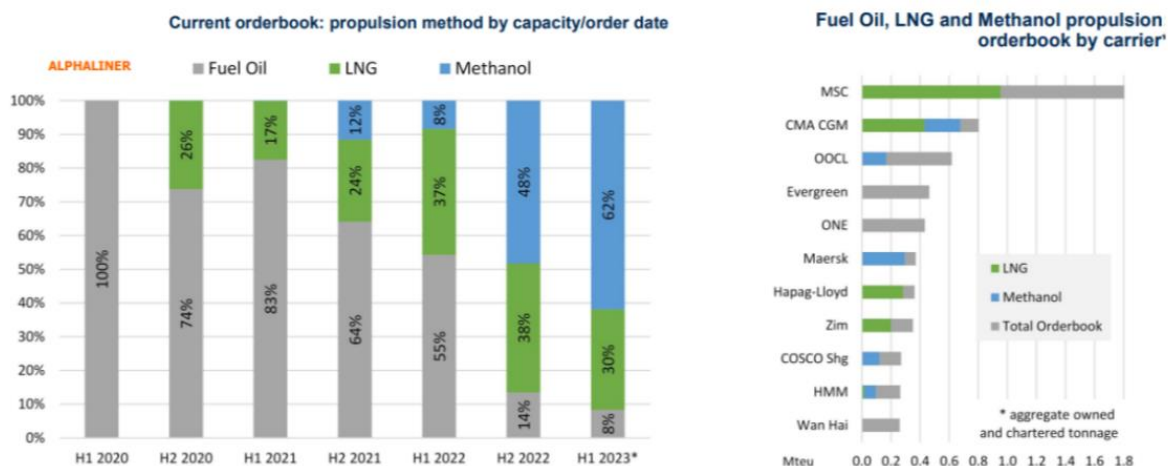
#### 3.1. OVERSEAS TRANSPORTATION: INTERNATIONAL MARITIME ORGANIZATION (IMO) 2023 REGULATION AND IMPACTS

Since January 1st, 2023, vessels have to comply with a new standard, with the implementation of the Energy Efficiency Existing Ship Index (EEXI) and the carbon intensity regulator, Carbon Intensity indicator (CII).

A large majority of the fleet is not ready, and on some lanes, it has been assessed that more than 60 % of the fleet is not up to standard.

Shipping lines are beginning to:

- Organize destruction of the oldest “non-compliance” vessel;
- Program for shutting down vessels in shipyards, to carry out changes aimed at improving their current energy efficiency;
- Limit the power of the engines to reduce speed of the vessel;
- Main impact is the increase of transit time for sea shipment and the risk to switch shipment by air
- Extend ship rotations with more ports of call and limit shuttle services;
- Order new vessels and use new fuel technologies (LNG, Biofuel, E-Methanol).
- There are more and more new vessels with green fuel propulsion, but their share remains negligible. CMA CGM will have 44 LNG vessels end of 2024 for a total fleet of 566 vessels (less than 8 % of the fleet).



Source: Alphaliner & Transporeon MII Global Ocean Interactive Community Update March 2023

### 3.2. HYBRID SEA TRANSPORTATION – SOLUTION FOR THE FUTURE?

Some other shipping companies decided to specialize their activity on hybrid sea transportation, with technology combining wind & biofuel propulsion. They are building their own hybrid fleet of container ships (capacity around 800 containers per vessel) and they plan to set up these vessels on the lane from North Europe to US East coast for 2026.

This container vessel is designed to be operated primarily under sail at an operating speed 30% below the market speed to provide a 50% carbon footprint saving.

We are currently in contact with our global freight forwarders to analyze how Sanofi could be part of this project for our shipments from Frankfurt DC or Croissy DC.



Source: [www.zephyretboree.com](http://www.zephyretboree.com) & Shipper Coalition for a low carbon maritime transport – France Supply Chain & AUTF

### 3.3. RAIL DEVELOPMENT

#### Rail From & To China

Since April 2020, Sanofi started to ship pharmaceuticals goods (+2/+25°C) to China via Rail in Reefer Container from April to October.

Due to the COVID Crisis, in 2021, the railway solution was stopped.



In 2022, we relaunched the use of rail shipment to deliver China (Hangzhou Plant) from France (Croissy DC), and 17 shipments were realized even during the UA/RU conflict.

In 2023, we are working on the qualification of a new reefer container that could help us to qualify the rail shipment for a different range of products (+15/25°C - +2/+8°C), for all year use.

And to reduce even more our CO2e on rail shipment, from April 2023, we will start to use HVO fuel in this reefer container.

Since the end of 2022, we also have some rails shipments from an API provider from China (Wuxi) to our Sanofi Lisieux Plants.

#### Rail in Europe

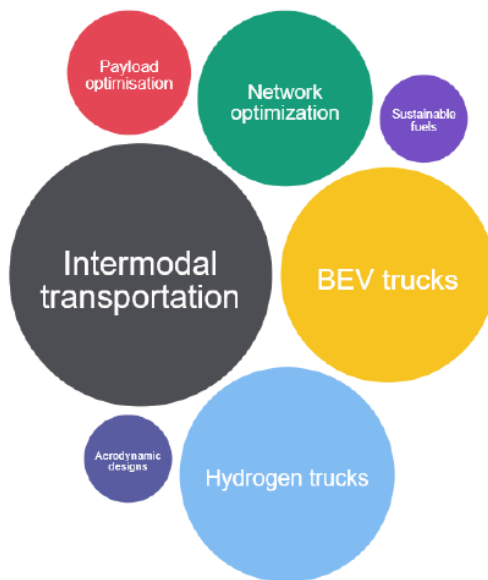
Rail Shipment is not only a solution for the Silk way lane, but it could also be used as an intermodal solution to deliver products intra-Europe.

In 2022, we realized some successful qualification tests with rail shipment from Köln in Germany to Bucharest in Romania. We hope to be able to implement this way of transport in routine mode for 2023 on this lane.

Following some meetings with our global freight forwarders, we already have some discussions about possible new routes in intermodal mode with rail:

- > Italia <> Germany
- > France <> Italia
- > ...

Intermodal transportation is identified as one of the most sustainable solutions to replace road transport in Europe by most European shippers.

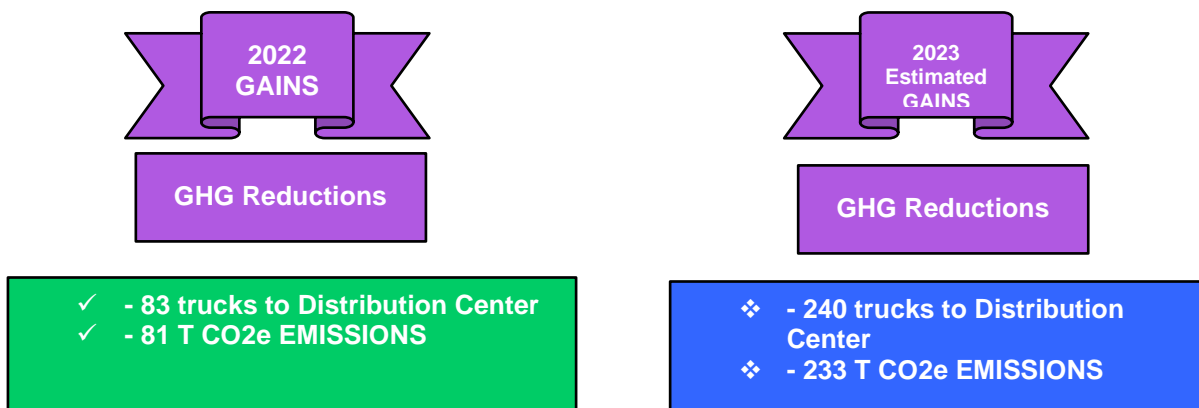


Source: Annual conference 2023 – Market Intelligence Initiative - Transporeon

### 3.4. DIRECT SHIPMENTS

With the aim of simplification and improvement, we redrew some flows to directly ship products from the plants to final market.

Besides saving time to deliver to our patients, this new design helps us to reduce greenhouse gas (GHG) emissions by avoiding many trucks per week from plants to the Distribution Center.



### 3.5. SWITCH AIR TO SEA

Airfreight is the mode of transportation responsible for the majority of our GHG emissions. To reach our target, some initiatives are in progress to reduce the volume of air shipments realized each year from our export distribution centers.

One of these initiatives is to switch the transport mode from Air to Sea for Vaccines to all destinations around the world, except Flu products that should be shipped immediately after production to arrive on time in the countries. To implement these new sea transportation lanes, we are working closely with all Sanofi & External Stakeholders to qualify these new routes to be sure there is no risk for our products. We are now shipping our vaccines to Australia, Japan, Malaysia, Brazil and the USA by sea.

## Vaccines transport change from France to Australia

### From air to sea shipment

#### Context:

- Significant carbon footprint: 17 000 km to fly from Europe to Australia\*



#### Challenge:

Implement sea shipment while securing local stocks, RSL, cold chain

#### Australia/France team

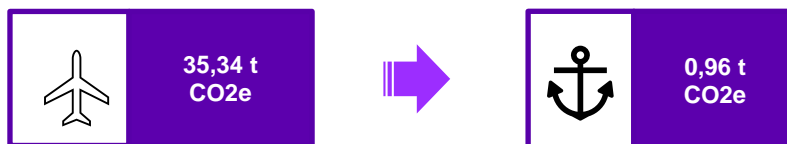
Supply chain, Customer service, Transport, Commercial Operations, Quality

\*1 passenger flight Paris to Sydney = 5 tCO<sub>2</sub>e  
= 1/2 year of a European carbon footprint



We also already started the same initiative for some Sanofi pharma plants in 2022, with very good results. See below example of one of our French plants (Aramon) to South Korea, next step will be sea development to Japan.

- CO<sub>2</sub> emissions reduction : 97% CO<sub>2</sub>e



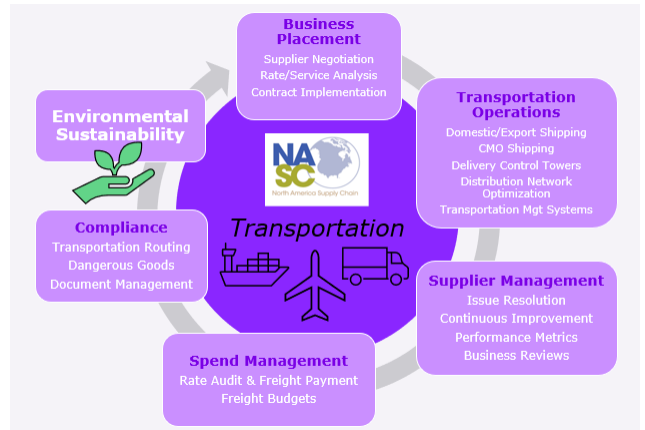


### 3.6. US PARCEL DELIVERY: AIR TO GROUND MODE SHIFT

Sanofi’s North America region processes almost 1.6m parcel shipments per year via one of our key suppliers, generating approximately 15.8k metric tons of CO2e annually. In order to meet customers expectation and deliver them on time, the use of air freight mode has been increased.

In collaboration with one of our suppliers, the North America Supply Chain team has successfully implemented a **Parcel Delivery Project**.

The supplier has continued to improve service, inching toward pre-pandemic levels. Beginning in January 2023, North America Supply Chain team has transitioned parcel shipments back to Ground delivery, expecting to reduce **Sanofi emissions by about 5,700 metric tons CO2e**.



### 3.7. PACKAGING PROJECTS

#### Cold chain packaging – Biofex



Sanofi annually ships 2 million small parcel shipments of cold chain products domestically using shipping containers comprised of Expanded Polystyrene (EPS).

In August of 2021, after 2 years of testing and studies, our North America (NA) Packaging team finalized their study to replace EPS, which is harmful to our waste treatment, with a 100% biobased solution that is biodegradable known as **Biofex™**.

**Biofex™** is a 100% sustainable solution for shipping temperature-controlled products. It mimics the performance of expanded polystyrene, however, is 100% sustainable from conception to molding of the coolers.

The Extruded Poly Lactic Acid (xpla) is manufactured from corn and sugar into beads that are pressurized into molds to create our Sanofi custom cooler designs that were designed in-house by the NA Supply

Chain Package Engineering. Once the container is delivered to our customers, they can send to an industrial landfill that will degrade the shipper in less than 4 weeks, or it can be sent to a landfill and breakdown in less than 2 years vs. traditional EPS that takes 400 years to breakdown, as well as leaving zero toxicity and microplastics when broken down.

**Biofex™** will reduce water usage by ~60k gallons, remove 1K cars off the road, and reduce landfill space by 2M+ cubic feet or the height of 2,528 Eiffel Towers stacked end to end annually.

The team has a staggered approach for implementation, as it takes time to design and qualify each shipping solution to ensure product efficacy upon delivery to customers. The team has set a goal of 2024 for full implementation.

## Compact Box: Eco-design approach for Packaging

Commonly, secondary packaging for ampoules, vials and syringes has been composed of plastic blisters or trays contained in a carton box with a leaflet.

Sanofi's ambition is to replace 100% of plastic blisters with cardboard systems for vaccine packaging by 2027. As of 2022, 33% of Sanofi vaccines were sold without plastic blisters and efforts are underway to continue to limit plastic in secondary packaging of vaccines.



Thanks to the Compact Box Packaging initiated by Sanofi, we are delivering on our commitment to reduce plastic use in our packaging and reduce number of pallets to distribute which leads to carbon footprint reduction

For this project, the current PVC blister has been replaced by a carton wedge, and the overall volume of the carton folding box has been reduced by more than 40%. The overall benefit represents:

- 50% reduction in the number of pallets to be transported
- significant carbon footprint reduction of vaccine distribution
- avoidance of 80 tons of PVC per year
- recycling facilitation, since it is a mono-material packaging which reduces waste sorting.

The Compact Box project is a good example of the application of eco-packaging principles; this packaging innovation enables the reduction of environmental impacts and packaging costs for the entire distribution chain.

For more information, see in our [Document Center](#):

- Eco-design factsheet
- Climate Change – Road to Net Zero factsheet
- Circular economy and waste management factsheet