

TRANSPORTING MEDICINES AND VACCINES

GRI Standards :

302-5, 305-5 : Emissions

EXECUTIVE SUMMARY

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 requiring 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 for long-distance, developing railways transportation, optimizing truck, container and pallet occupancy and promoting greens models such as using gas or electric vehicles whenever it is possible.

TABLE OF CONTENTS

1. BACKGROUND	3
1.1. Organization and network	3
1.2. Several ways to transport our medicines and vaccines	4
2. ACTION	4
2.1. Oversea transportation: encouraging the use of sea transportation instead of air transportation whenever possible	4
2.2. Choosing alternatives to road transportation whenever possible	5
2.3. The challenges of complying with pharmaceutical regulation	5
2.4. Deliveries using natural gas vehicles (NGV)	6
2.5. Rail to China	6

1. BACKGROUND

As a global healthcare leader fulfilling a public health mission, Sanofi considers the supply chain and the delivery of medicines to be among the company's most important responsibilities.

Sanofi is committed to make every effort to ensure that the supply chain will continue to deliver medicines and vaccines to the market without interruption. Protecting patients' health is a priority challenge every day.

Distribution and transportation are the last part of the supply chain, which is dedicated to serving all patients worldwide. The supply chain's purpose is to deliver our products in close proximity to patients and to ensure a high standard of quality.

Distribution and transportation must be performed with an eye on reducing environmental impacts by controlling CO2 emissions. Sanofi has made clear commitments to ensure a sustainable medicine transportation organization and to reduce the company's direct and indirect greenhouse gas emissions.

1.1. Organization and network

The Transportation Department is part of the Supply Chain within Global Industrial Affairs. Sanofi's transportation strategy 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 173 distribution centers belonging to Sanofi or external partners), ensuring controlled processes as well as compliance with our continuous improvement policy.

Once a year a meeting of the worldwide network is organized to strengthen team spirit, review constraints and solutions, and celebrate successes.

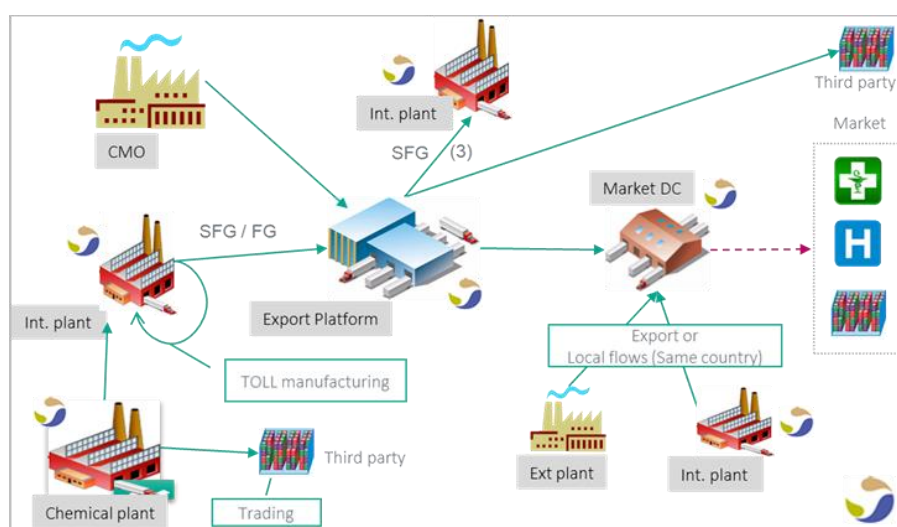


Figure 1- Our distribution organization.

1.2. Several ways to transport our medicines and vaccines

- 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).
- SANOFI asks to all his partners to develop sustainable solutions such as:
 - > Choice of pre and post shipment.
 - > Alternative fuels for trucking (gaz, truck electrical...).
 - > Use of ferries or River Boats, rail.

2. ACTION

- > Choose sea instead of air transportation for long-distance shipments.
- > Increase the level of occupancy for truck and sea containers.
- > Develop railway transportation.
- > Consolidate flows and mutualize transport to reduce the number of trucks on the road.
- > Promote green models of transportation with all forwarders.

2.1. Oversea transportation: encouraging the use of sea transportation instead of air transportation whenever possible

Sea transportation is 30 times less polluting than air transportation. That is the reason why, Sanofi choose as much as possible to use sea transportation for our medicines instead of air shipments.

80%

of our intercontinental shipments are by sea

Figure 2- Percentage of sea transportation used by Sanofi from 2015 to 2018 for medicines shipments (oversea transportation).



As such, sea transportation for destinations outside Europe went from 78% in 2011 to 84% in 2018. This ratio remains flat, small variations may be observed due to geopolitical context, evolution of the products portfolio.

The resort to sea transportation is part of our core strategy, whereas most of pharmaceutical companies usually favor the use of air transportation (around 65% in 2016). However, more and more pharmaceutical companies switch to sea transportation as this mode of transport increased from 5% in 2013 to 25% in 2016 for the whole pharmaceutical industry.

Moreover, new regulation for sea transportation (IMO 2020) will also contribute to decrease CO2 emissions and environmental impact.

Our main forwarders are also working on NGV (Natural Gas Vehicules) boats

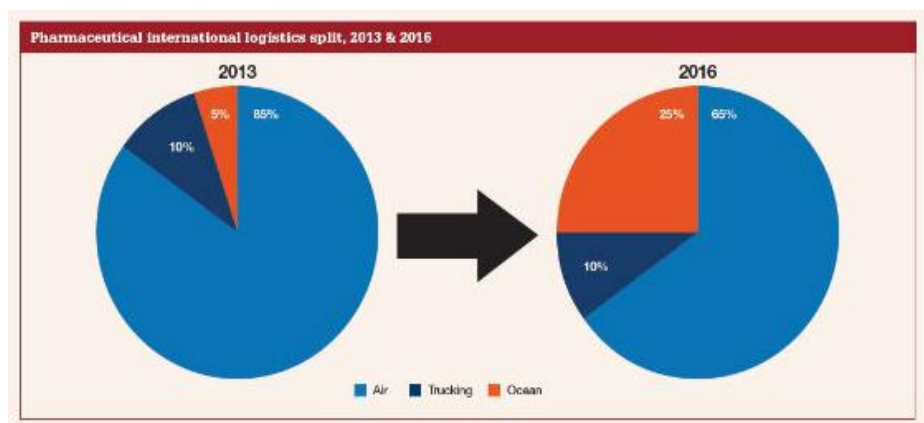


Figure 3 - Pharmaceutical international logistics split, 2013 and 2016

Source: [World pharmaceuticals](#)

2.2. Choosing alternatives to road transportation whenever possible

In Europe, regular flows are switched from road to rail transportation, for example from Riells (Spain) to Frankfurt (Germany) and from Frankfurt to Milan (Italy).

Some projects are currently developed such as reaching some countries from France and Germany with intermodal modes (road, rail & short sea).

2.3. The challenges of complying with pharmaceutical regulation

In order to guarantee the quality of distributed medicines and vaccines, transportation has to respect very strict rules, especially in terms of temperature. In 2013, the EU implemented new Good Distribution Practices (GDP) to protect medicinal products.

The appropriate temperature must be maintained during the transportation of medicines, regardless of external conditions.

Vaccines and insulin are extremely sensitive. To respect the cold chain during the transport of these products, the temperature must be maintained between 2° and 8°C.

2.4. Deliveries using natural gas vehicles (NGV)

The Brazil, São Paulo example



After a very well received pilot in green delivery of products in São Paulo, Sanofi will include an electric car in its next anti-flu campaign in 2019. The idea of this exclusive electric car called BYD T3 launched by the Supply Chain rose following a workshop on new technologies and careers of the future.

Thanks to this modern vehicle, around 5 tons of CO2 emissions and 2,000 liters of diesel will be saved per year.

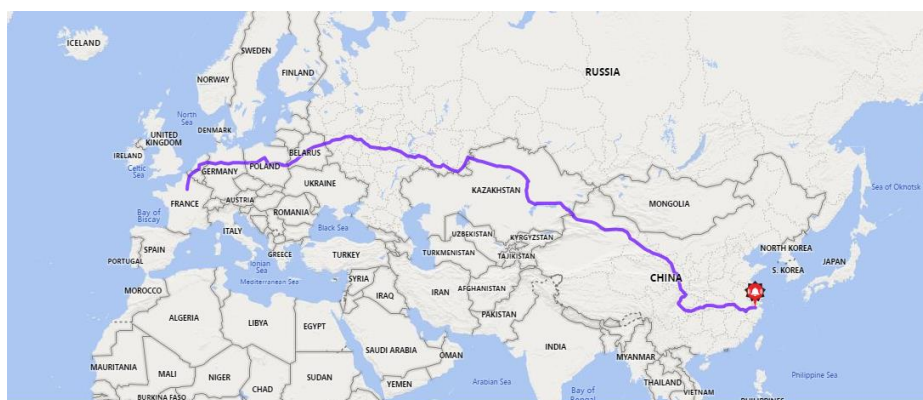
This car can run 250 kilometers without needs to be restocked. The extension of such delivery for other products is currently under study.

NGV shuttles between Croissy and CDG

In accordance with the Group's Environmental roadmap and the commitment of the supply chain to reduce CO2 emissions linked to transportation, the Export platform at Croissy recently set up NGV (Natural Gas Vehicle) shuttles between the site and Paris Roissy Charles de Gaulle airport.

But the adventure does not stop there! The goal is to run 100% of our carriers on this journey using NGV (80% to date) and then generalize the use of bioNGV to reduce further our CO2 emissions. These actions allow us to reduce our CO2 emissions by around 90% on this route.

2.5. Rail to China



Sanofi Global Supply Chain and China team have launched a project in 2018 which consists in implementing a new mode of shipment between Europe and China to transport our pharmaceutical products under controlled temperatures: Rail transportation. China is Sanofi's second market, currently delivered by air and by sea. The target is to secure this strategic market by implementing a third transportation solution in line with our environmental roadmap, with a better transit time compared to sea and a better control on temperatures and costs compared to air shipments. Tests were first carried out without products to verify the feasibility of this operation; a last test was carried out at the end of 2019 with products and the use of rail in routine mode is now planned from the second half of 2020.

For more information about our CO₂ emissions, see in our [Document Center](#):

- *Carbon Footprint (Scope 1,2,& 3) Factsheet.*
- *Sanofi's risks and opportunities related to Climate Change Factsheet.*