

TATA STEEL



Tata Steel Outbound Logistics Network

- Supply Chain managing business in the USA as the “Second Home Market” for over 60 years – Largest and longest-term steel importer into St. Lawrence Great Lakes Seaway System
- Five-year average of over 525 kmt in annual deliveries within the US network for The Netherlands business; over 600 kmt for all Tata Steel global business (350-400 kmt within the Great Lakes)
- Network of over 25 breakbulk and container US port terminals, for all Tata Steel business
- Established, long-term contractual relationships with logistics network partners
- Annually perform over 20,000 truck shipments and nearly 1,000 railcar shipments
- Support thousands of permanent payroll jobs, union labor and for-hire jobs through our maritime and inland transportation economic activities...many directly dependent on Tata Steel



Tata Steel

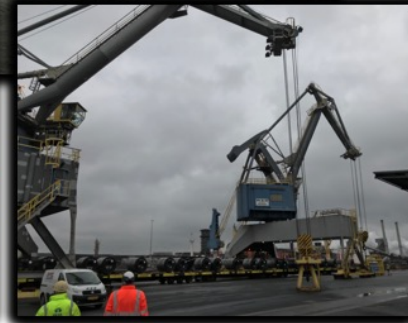
Supplying World-Class Steel & Supporting Jobs in the US for over 60 years

Vessels Loading Coils for US Customers in Ijmuiden

1967



2018



Our track record

Tata Steel has been working for years to reduce its CO₂e emissions. This makes the IJmuiden steelworks already one of the most CO₂e efficient in the world today¹. The CO₂e intensity of the steel produced in IJmuiden is around 7% below the European average and almost 20% below the global average.

1. Source: World Steel CO₂ Association data report 2021, BF-BOF route.



**Tata Steel
Europe chooses
for Green Steel
in a clean
environment**



TSN opts for an accelerated transition to hydrogen for the production of **Green Steel**



Ambition to become **CO2 neutral by 2045**



Ambition to reduce **CO2 emissions with 35-40% by 2030**

Reducing our impact on the living environment is TSN's top priority. It is our ambition to ***significantly decrease environmental emissions***

Tata Steel Netherlands invests \$72 million in the next phase of Hydrogen journey...



In 2018, we started thinking about
Logistics Sustainability

...and concluded that it is
of Strategic Importance

Focusing on Sustainability:

- ✓ Leads to a **lean** and **green supply chain**
- ✓ Results in **operational excellence**
- ✓ Stimulates **innovation**
- ✓ Makes us attractive to the next generation of **talent**
and contributes to creating **competitive advantage**

Zero Carbon Logistics has Five Pillars



Sustainability Project Categories to meet our Ambition

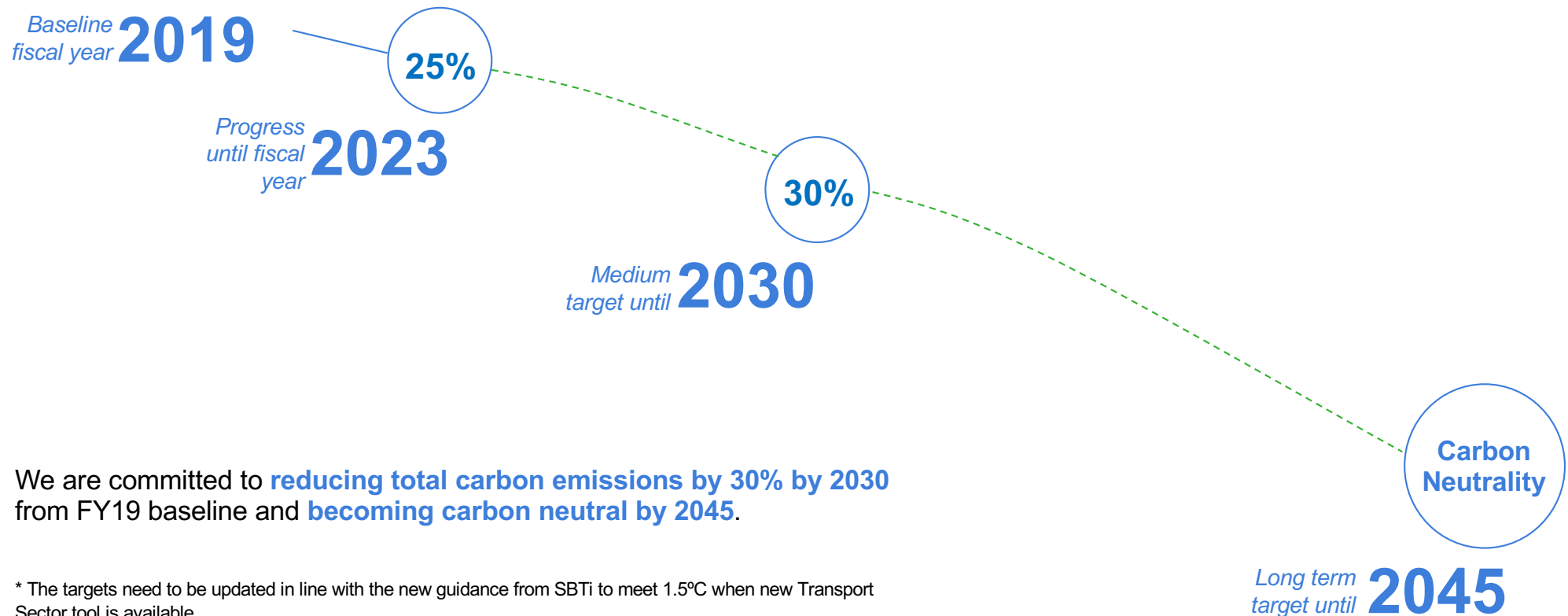
Network and modal Improvement	Fleet Efficiency Improvement	Energy Improvement	Packaging Improvement
 Rail, barge & sea	 Intermodal	 Fuel efficiency	 Reusable
 Modal shift avoidance	 Hub spoke model	 Biofuels	 Reduction
 Inbound & outbound	 Hub & downstreams	 Renewable energy	 Biodegradable

Initial approach in 2020 used SBTi when these were aiming for a global temperature rise of 2°C and well-below 2°C and Tata Group had not yet declared any targets.



SCIENCE
BASED
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION



In Europe, we are pioneering in Zero-Emission Logistics solutions

Electric truck



SCHAVEMAKER
Logistics & Transport

XPOLogistics

Hydrogen powered ship



 **Van Dam Shipping**

Hydrogen powered barge



TU Delft

ptc
Particuliere Transport Coöperatie

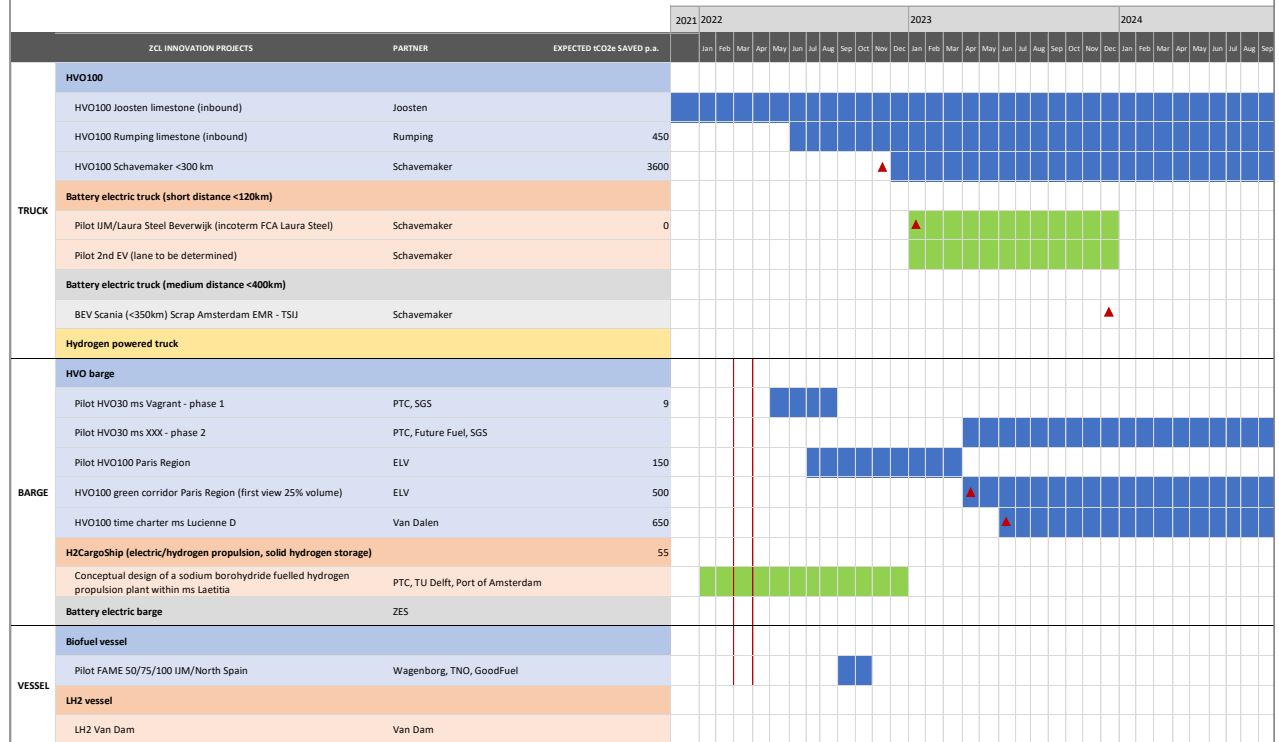
H2FUEL-SYSTEMS
Making Hydrogen work

 **Port of Amsterdam**

Decarbonisation Projects - Overview

TSN Outbound Logistics

▲ Key milestones such as implementation time
■ (Expected) duration for carbon reduction measures
■ (Expected) duration for zero carbon emission measures



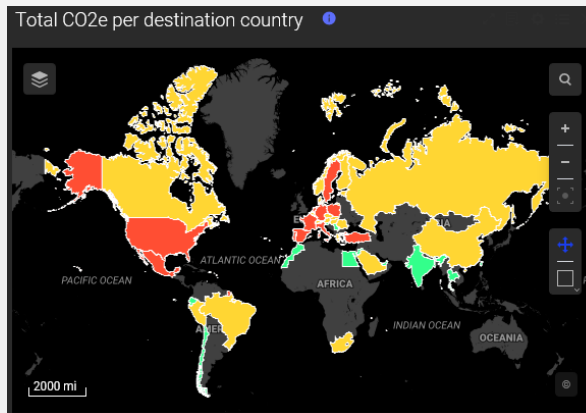
Map and Measure



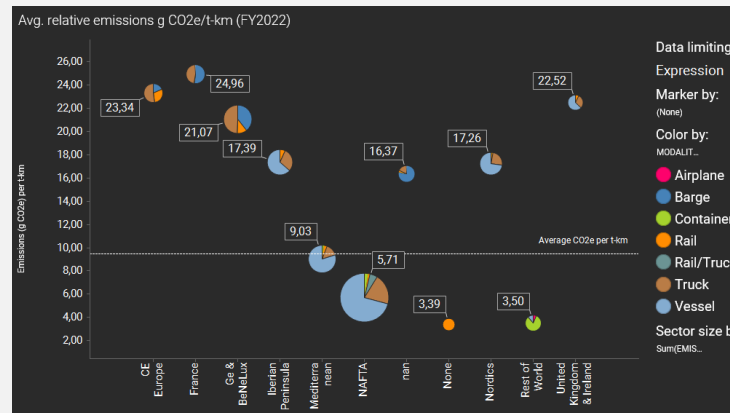
TSE Outbound Logistics Emission Factor Library

- Close collaboration with LCA subject matter experts in TSE
- Based on actual deliveries by our logistics service providers, it reflects TSE's outbound transport activities.
- First steel company to adopt the GLEC Framework.
- Continuous improvement inspired by business need.

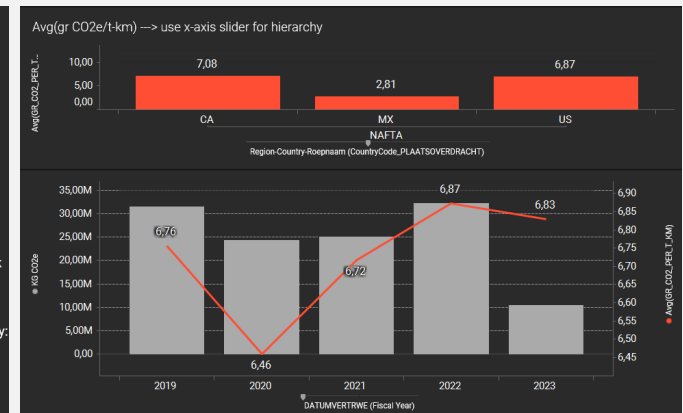
Dashboards for reliable emission reporting and identification of improvement opportunities



Absolute emissions



Carbon intensity



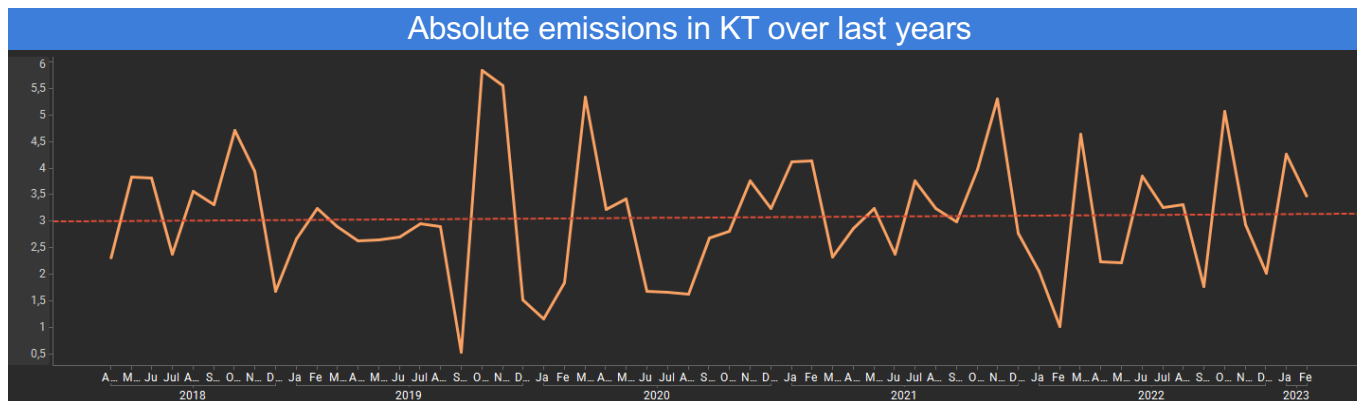
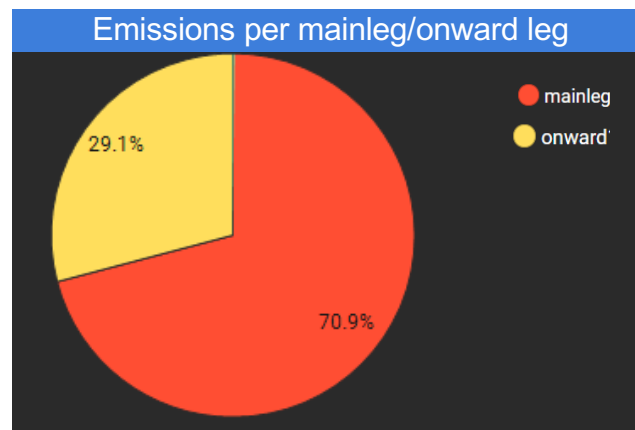
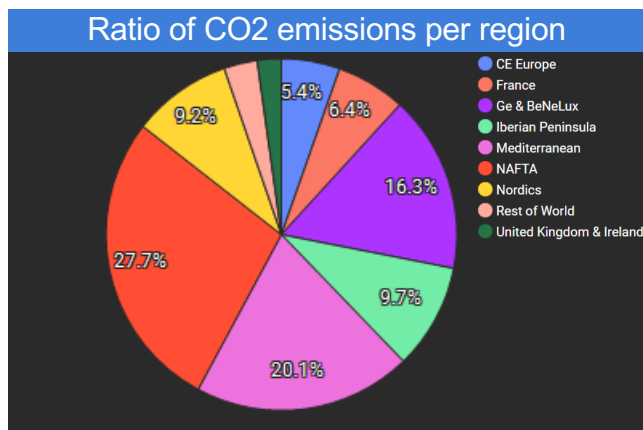
Emission trends

Excellence in sustainability

- **Tata Steel Europe** - Zero-carbon logistics



Review of Current USMCA Network



Key Messages

- A large part of the CO2 emissions within our network comes from USMCA shipments (~28%)
- Furthermore, we see that the Mainleg (Vessel) contribution to the emitted CO2 is way bigger than the onward transport (Truck/Rail)
- Both absolute and relative emissions has slightly increased over the last years

De-Carbonization Opportunities

Now

Reduction of carbon emissions by improving fleet efficiency.

These improvement projects generate both financial savings and emissions savings.

Timeline for investigation: **Now**

Payload Optimization

Increase Rail Utilization

Forming Partnerships

Biofuel Trials

Network Optimization



Short Term

Reduction of carbon emissions by using biofuel

that is made from renewable and sustainable raw materials that do not compete with the food chain.

Timeline for investigation: **Now or short-term depending on modality**

EV Vehicle Trials

Electrifying Coil Handling

HVO 100

Bio-diesel (FAME)

Port & Terminal Optimization & Increase Efficiencies



Long Term

Transition to carbon free delivery by using zero-emission truck such as battery electric heavy duty truck (BEV), and hydrogen powered heavy-duty truck (FCEV).

Implementation timeline: **>2026**

Battery Electric Vehicles

Pilot on short distance (120 km) early 2023. The first electric trucks for the medium distance (400 km) will be on the market in **2024**.

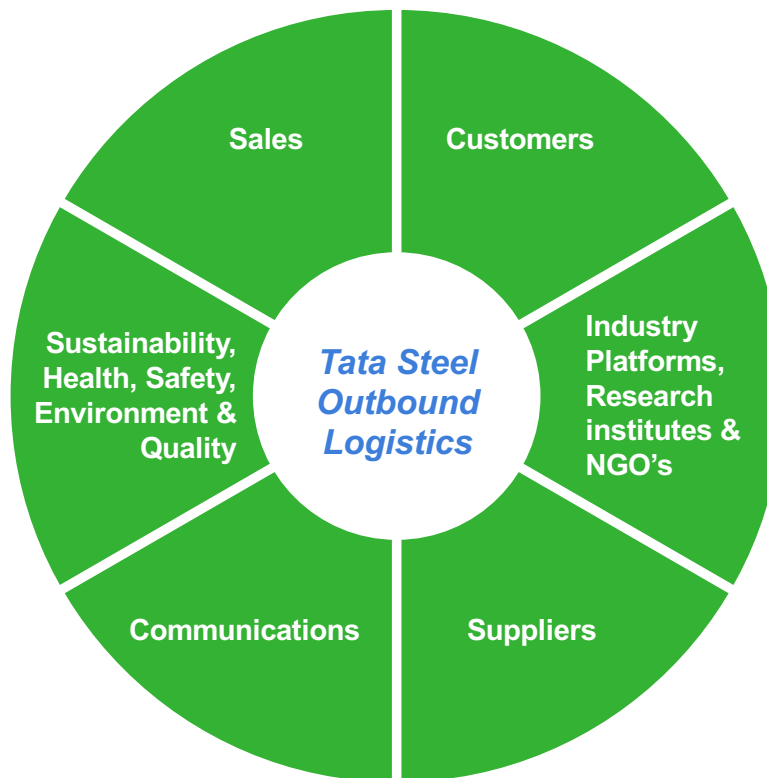
Hydrogen-Powered Vehicles

Available **>2026**

Collaboration forms the beating heart of Zero Carbon Logistics

Sustainability is a systems challenge.

We NEED to collaborate across the value chain.



How do we create the right business environment to support accelerated change?

Do you have any questions?

Tata Steel Outbound Logistics
www.tatasteeleurope.com