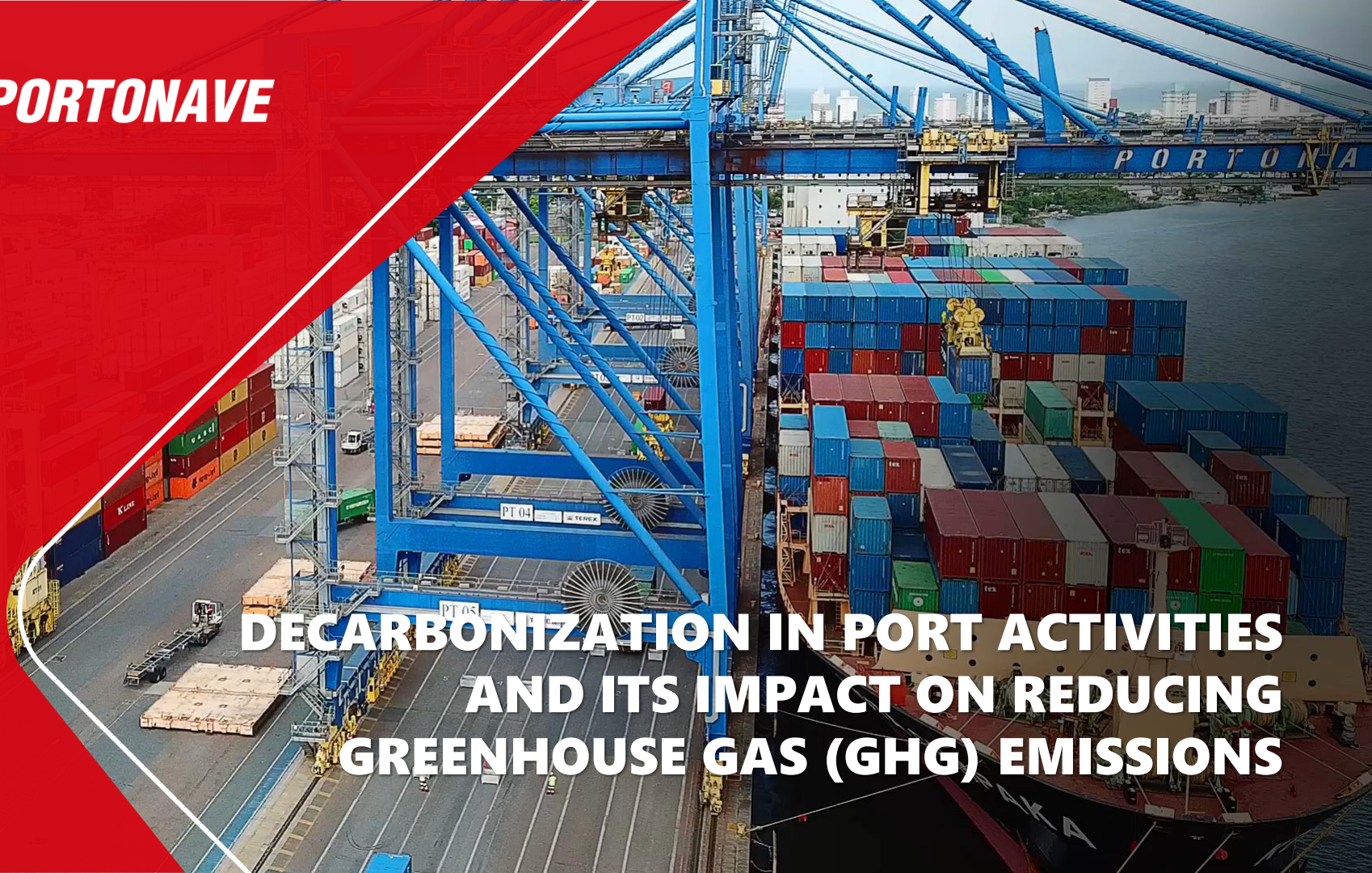
PORTONAVE



DECARBONIZATION IN PORT ACTIVITIES AND ITS IMPACT ON REDUCING GREENHOUSE GAS (GHG) EMISSIONS

About Portonave

Portonave is **Brazil's first private container port terminal** and the most efficient in the country, according to the National Waterway Transportation Agency.

Located in Navegantes, Santa Catarina, the terminal has been at the forefront of sustainable port operations since 2010, when it joined the Brazilian GHG Protocol.

The company is committed to **minimizing the environmental impact** of its activities and **contributing to a** more balanced and **sustainable port sector** in Brazil.

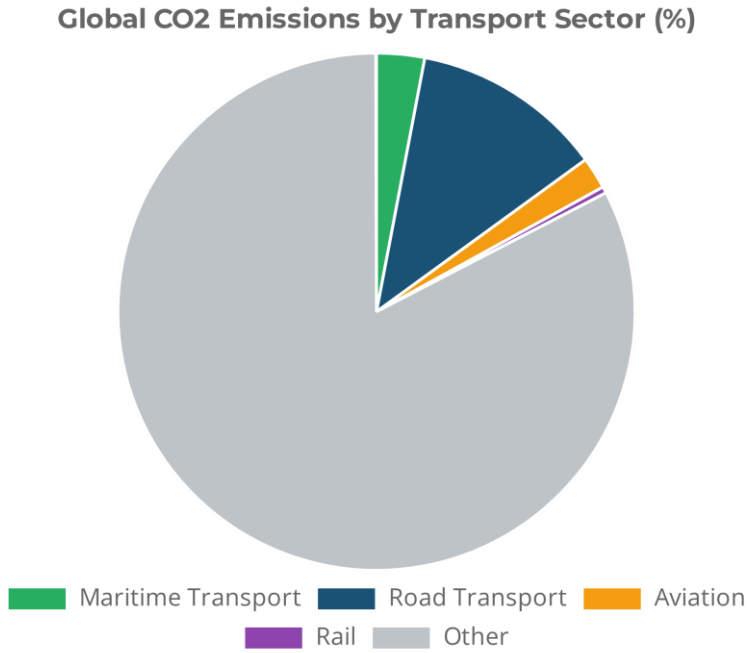
The Challenge: GHG Emissions in Port Operations

In the face of the global climate emergency, port terminals like Portonave face significant challenges in reducing their environmental impact.

Maritime transport accounts for approximately 3% of global emissions, according to the International Maritime Organization (IMO).

Port operations are highly energy-intensive and largely dependent on fossil fuels like diesel.

> ⚠ Before electrification, diesel combustion in RTG cranes accounted for **61.5% of Scope 1 emissions** at Portonave.



Our Commitment to a Lasting Legacy

Portonave's ESG strategy is built on three fundamental pillars that guide our sustainable development initiatives.

Smart Solutions

We work efficiently to transition to a cleaner economy, encourage innovative ideas, minimize our environmental impact, and seek sustainable solutions lasting and shared.

People on board

We value people, create fair working conditions, promote their development, and foster community engagement, with safe behaviors and welcoming diversity.

Lasting Legacy

We build relationships based on the highest ethical and transparency standards throughout our entire chain, prioritizing best human rights practices and contributing to the social and economic development of our entire community.

A Multi-faceted Decarbonization Strategy

Portonave's comprehensive approach to decarbonization includes multiple initiatives aimed at reducing GHG emissions across all operations:

- **Electrification of Equipment**: Conversion of diesel-powered machinery to the electric alternative.
- **Renewable Energy**: Installation of solar panels and purchase of certified renewable energy.
- **Shore Power**: Infrastructure to provide electricity to berthed vessels.
- **Carbon Offsetting**: Acquisition of International Renewable Energy Certificates (I-RECs).
- **Emissions Monitoring**: Annual GHG Emissions Inventory since 2010.

High investments are being made in sustainable infrastructure and equipment.

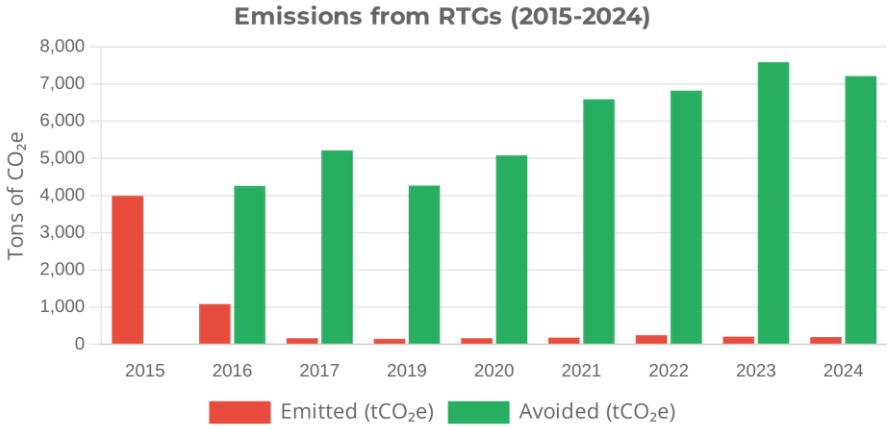
Electrification of RTG Cranes

The first significant transformation at Portonave was the full electrification of **18 Rubber Tyred Gantry (RTG) Cranes**.

This transition, which replaced diesel generators with electric systems, began in 2015 and required an investment of around **R$25 million.**

- By 2016, emissions from RTG operations dropped by **93.75%** compared to 2015 levels.
- From 2015 to 2024, there was a **95% reduction** in emissions from RTGs.

Electric pathway of the RTGs



Modernizing Our Fleet

Building on the success of the RTG electrification, Portonave has expanded its green fleet with various electric and eco-friendly equipment:

6 Electric Forklifts

Replaced LPG-powered forklifts, reducing emissions from 28 tons of CO_2 in 2017 to just 10 tons in 2023 – a **64% reduction.**

1 Eco Reach Stacker

First in Latin America to acquire this **ecological** forklift, designed to consume **40% less fuel** than traditional models.

1 Electric Terminal Tractor

Introduced in 2024, this 100% **electric** vehicle emits no polluting gases.

1 Electric Reach Stacker

This 100% **electric** vehicle emits no polluting gases.

Electric Forklifts

Eco Reach Stacker

Electric Terminal Tractor

Electric Reach Stacker

Modernizing Our Fleet

New 100% Electric Acquisitions

2
Ship-to-Shore Super Post Panamax (STS)

14
Rubber Tyred Gantry (E-RTG) Cranes

1
Reach Stacker (E-RS)

2
Scanners

US$ 65 Million

Investment in new electric equipment enhances operational efficiency and demonstrates our environmental commitment.

Harnessing Solar Power

Complementing the electrification efforts, Portonave installed **318 photovoltaic solar panels** across its operations.

These panels contribute to the generation of **renewable energy** on-site, helping to offset the terminal's electricity needs.

Key Benefits

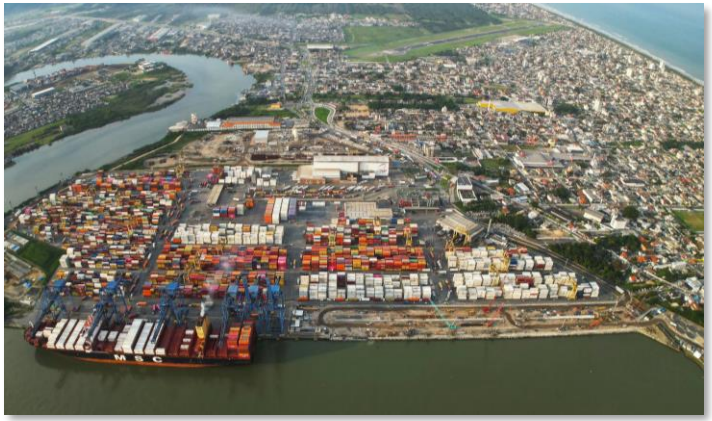
- Reduced dependence on grid electricity.
- Lower operational costs.
- Demonstration of commitment to renewable energy.

From 2022 to 2024, Portonave purchased over **199,000 MWh** in renewable energy certificates, offsetting **8,373.21 tCO_2e** in emissions.

Shore Power: The Future of Port Operations

In 2024, Portonave launched a fully private **R$1 billion investment** to accommodate larger vessels and implement the first phase of shore power, being a pioneering in Brazil.

- **New Quay:** Infrastructure Works covering 900 meters.
- **Pioneer:** First infrastructure for a shore power system in Brazil.
- Shore power allows vessels to connect to the local electricity grid while berthed, eliminating the need to run diesel engines.

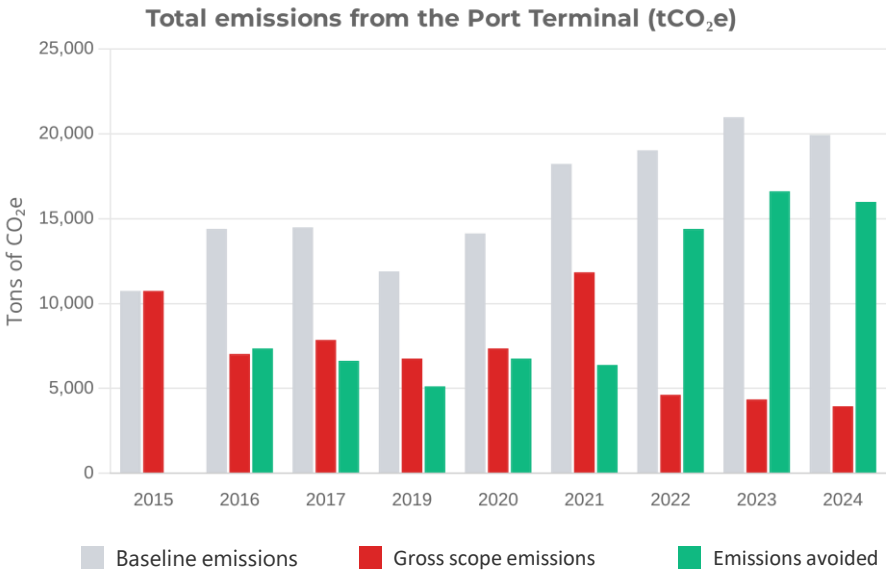


Quay Infrastructure Works

Measurable Impact: Emissions Reduction

Thanks to the comprehensive decarbonization strategy, Portonave has achieved significant reductions in greenhouse gas emissions.

- Between 2015 and 2024, approximately **79,874.13 tons of carbon equivalent emissions** were avoided.
- This represents a **63.2% reduction** in Portonave's total emissions compared to 2015 levels.



PORTONAVE

A Sustainable Future for the Port Industry

Key Achievements

- Full electrification of 18 RTG cranes, reducing their emissions by 95%.
- Pioneering adoption of electric and eco-friendly equipment.
- Installation of 318 photovoltaic solar panels.
- 63.2% reduction in total emissions between 2015 and 2024.

PORTONAVE

A Sustainable Future for the Port Industry

Looking Forward

- Implementation of shore power – the first system of its kind in Brazil.
- Continued electrification of the Terminal fleet.
- Participation in the Brazilian Alliance for the Decarbonization of Ports.

"Portonave's commitment to being an eco-friendly port demonstrates the great impact that sustainable port operations can have. Such operations are not only environmentally responsible but also play an important economic role."

Juliano Adão

PORTONAVE

Thank you

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