

# TENERIFE PORT ZERO

PORT AUTHORITY OF SANTA CRUZ DE TENERIFE



Autoridad Portuaria  
Santa Cruz de Tenerife



# INDEX

- INTRODUCTION
- OBJECTIVES
- CARBON FOOTPRINT AND GHG REDUCTION PLAN
- TOPICS
- CONCLUSION



---

# 1 – INTRODUCTION

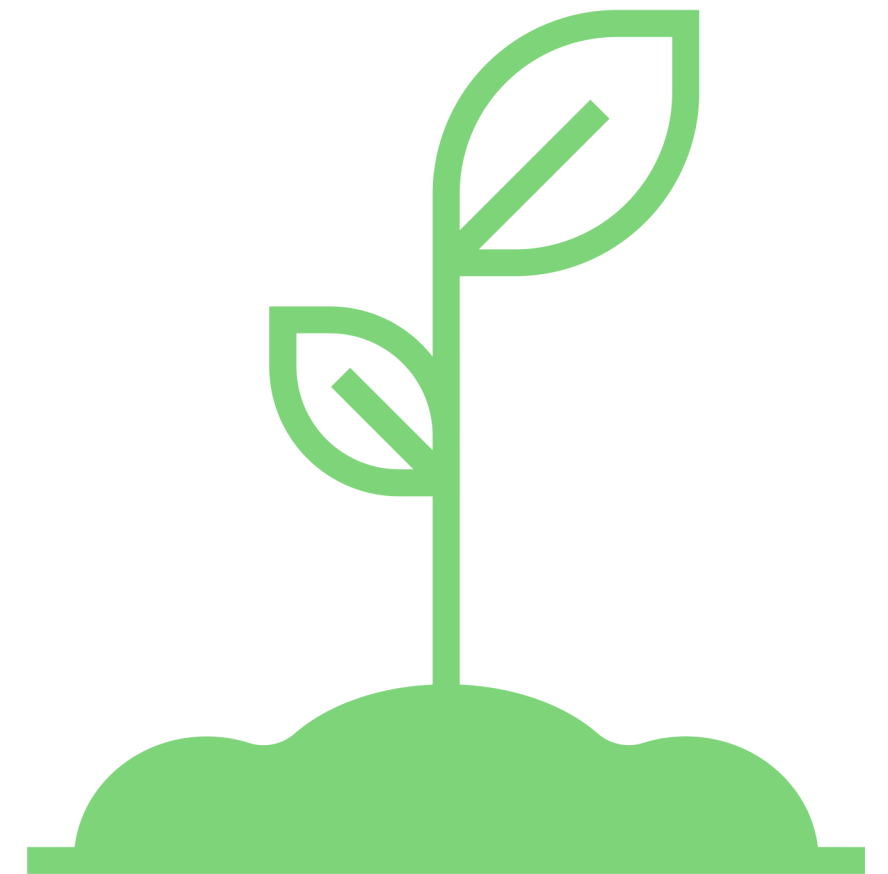
---

# INTRODUCTION

TENERIFE PORT ZERO

The Port Authority of Santa Cruz de Tenerife, a member of Spain's state port system, manages six ports and is committed to sustainable development. This presentation introduces the "Tenerife Port ZERO" project, which aims to create CO2-neutral ports that contribute to global climate objectives. Recognizing the maritime industry's significant greenhouse gas emissions, the project focuses on reducing, offsetting, and eliminating CO2 emissions in port operations.

To begin this transformative journey, the authority conducted a comprehensive assessment of its carbon footprint, providing valuable insights for targeted mitigation strategies. Measuring the carbon footprint establishes a baseline for progress monitoring, transparent reporting, and collaborative partnerships. The project builds upon previous sustainability initiatives and leverages data to intensify the commitment to decarbonization and inspire a greener, more sustainable maritime industry.





---

# 2 – OBJECTIVES

---

# OBJECTIVES

The "Tenerife Port ZERO" project is firmly aligned with the focus area of the sustainability awards: "Facilitation of energy transition in ports: striving towards CO2-neutral ports to help achieve global climate goals." With this in mind, our project is guided by the following objectives:

## Quantify and Understand

Our primary objective is to accurately measure and comprehensively understand the carbon footprint generated by our port operations. By conducting a thorough assessment, starting from 2017, we established a baseline that serves as a reference point for evaluating our progress in reducing emissions.

## Reduction and Mitigation

Building upon the measured carbon footprint, we have developed a comprehensive reduction plan that encompasses a range of innovative strategies. Our aim is to significantly reduce CO2 emissions within our port, employing measures such as the adoption of renewable energy sources, energy efficiency optimization, green transportation systems, and the promotion of sustainable practices among port users and stakeholders.

## Collaboration and Partnerships

We recognize that achieving CO2-neutral ports and contributing to global climate goals requires collective action. Thus, we actively seek partnerships with industry players, local communities, governmental bodies, and international organizations to foster collaboration and knowledge exchange. By working together, we can amplify our impact and accelerate the energy transition in ports worldwide.

## Transparency and Accountability

We are committed to transparency and accountability throughout our journey towards a sustainable port. We will regularly report on our progress, sharing the results of our carbon footprint measurements, showcasing the effectiveness of our reduction strategies, and highlighting the positive environmental outcomes achieved. By doing so, we aim to inspire others and encourage the wider adoption of sustainable practices in the maritime industry.



# OBJECTIVES

The "Tenerife Port ZERO" project is firmly aligned with the focus area of the sustainability awards: "Facilitation of energy transition in ports: striving towards CO2-neutral ports to help achieve global climate goals." With this in mind, our project is guided by the following objectives:

## Leadership and Inspiration

As a Port Authority, we aspire to lead by example and inspire others to embrace sustainable practices. Through our efforts to achieve CO2-neutral port operations, we aim to be at the forefront of the energy transition in ports. By demonstrating the feasibility and benefits of sustainable measures, we seek to motivate and empower other ports to embark on similar journeys towards a greener and more climate-resilient future.

## Innovation and Research

Another crucial objective of the project is to leverage the port environment as a platform for research and development (R&D) activities focused on marine energy production, including wave and offshore wind power. We aim to harness the potential of the marine environment within the port to explore and implement innovative technologies that generate clean, renewable energy.

## Alternative Fuels and Hydrogen Generation

As part of our commitment to energy transition, we aspire to explore and develop alternative fuels that can replace traditional fossil fuels in port operations. This includes researching and implementing solutions for the production and use of sustainable fuels, such as biofuels and synthetic fuels. Additionally, we seek to leverage the port's infrastructure and resources to explore the generation and utilization of hydrogen as a clean energy source, with the potential to power various port activities.

---

# 3 — CARBON FOOTPRINT AND GHG REDUCTION PLAN

---



# CARBON FOOTPRINT

In our pursuit of a CO2-neutral port, the first step was to measure our carbon footprint for the 2017-2020 period following the "Methodological Guide for Carbon Footprint Calculation in Ports" developed by State Ports of Spain.

Shown in the table below are the results obtained in the measurement of the carbon footprint in the Port Authority of Santa Cruz de Tenerife (PAT).

Port Authority of Santa Cruz de Tenerife	2017	2018	2019	2020
Scope 1 [kg CO <sub>2</sub> eq]	130.588	166.851	169.275	118.899
Scope 2 [kg CO <sub>2</sub> eq]	1.139.723	1.991.954	1.279.432	0
Scope 3 [kg CO <sub>2</sub> eq]	109.864.766	98.545.887	94.819.665	140.299.162
Other <u>organisations</u> operating in the PAT	64.773	2.433.410	2.531.006	1.954.738
Maritime traffic in the PAT	108.338.630	94.614.633	90.795.620	137.098.573
Traffic of vehicles in passage regime in the PAT	245.541	266.676	293.908	209.572
Transport of goods by truck within the PAT	1.215.821	1.231.168	1.199.130	1.036.279
<b>Carbon footprint [kg CO<sub>2</sub>eq]</b>	<b>111.135.077</b>	<b>100.704.693</b>	<b>96.268.372</b>	<b>140.418.061</b>

Table 1. 2017-2020 carbon footprint measurement results

From this study the main insight is that more than 95% of the emissions are related with the maritime traffic in Zone I waters and calls.

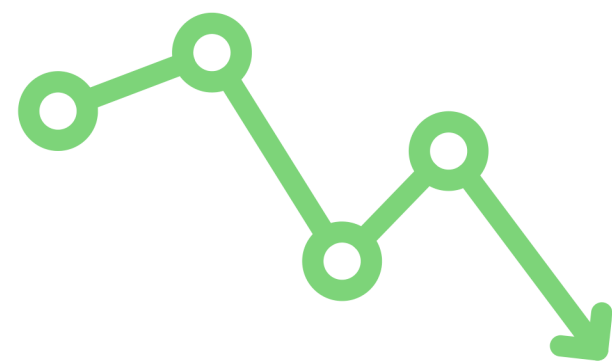
The other important insight related with scopes 1 and 2 is that, by that time, fuel consumption was reducing and emissions related with electricity consumption were 0 by 2020 as the electricity supplier provided 100% renewable electricity with guarantee of origin (GdO).

The carbon footprint of the PAT has been officially registered with the Ministry for Ecological Transition and Demographic Challenge (MITECO). This recognition demonstrates our commitment to transparency and accountability in our sustainability efforts, obtaining the carbon footprint certification, symbolized by the following label:



## GHG REDUCTION PLAN

The measurement of our carbon footprint has laid the foundation for our comprehensive **GHGs reduction plan aimed at achieving our goal of a CO2-neutral Port Authority**. Building upon the data obtained from the carbon footprint assessment, we developed a strategic roadmap. This plan encompasses various targets across different aspects, including environmental management, awareness, air quality, energy efficiency, and consumption. The **main targets** are shown in the table below:



Actualizations	Related to	2022	2023	2024	2025	2030
<b>GHG reduction Scopes 1+2 [%].</b>	General	20% reduction compared to 2019	30% reduction compared to 2019	40% reduction compared to 2019	70% reduction compared to 2019	100% reduction compared to 2019
<b>GHG reduction Scopes 1+2 and 3 [%].</b>	General	5% reduction compared to 2019	10% reduction compared to 2019	20% reduction compared to 2019	30% reduction compared to 2019	70% reduction compared to 2019

By implementing the initiatives of the project, we aim to significantly reduce greenhouse gas emissions, promote renewable energy usage, enhance environmental protection, and foster a culture of sustainability within our port community. Through the collective efforts outlined in the reduction plan, we are committed to making tangible progress towards our vision of a zero-emissions port, aligned with global climate goals.



---

# 4 – TOPICS

---

# TOPICS

1

SETTING AMBITIOUS CARBON  
REDUCTION/NEUTRALITY TARGETS

2

PROVISION OF PORT EMISSION REDUCTION  
EQUIPMENT AND SERVICES TO SHIPS, INLAND  
BARGES AND TRUCKS

3

INCREASING ENERGY EFFICIENCY OF PORT  
OPERATIONS

4

USE AND PRODUCTION OF RENEWABLE ENERGY  
IN THE PORT

5

TESTING AND PILOTING NEW FUELS AND  
TECHNOLOGIES

6

PROVISION OF CLEAN SHIP INCENTIVES

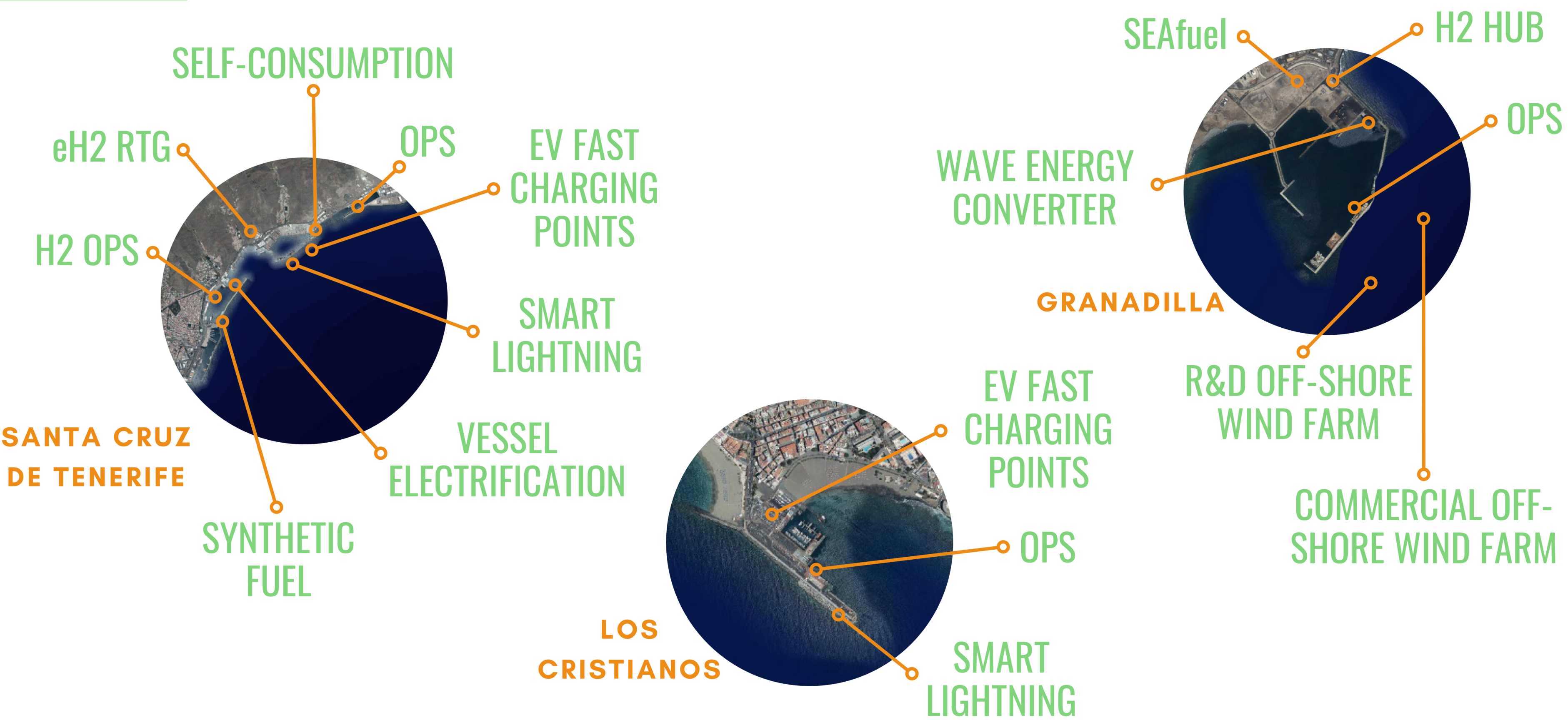
# CANARY ISLANDS



## PORT AUTHORITY OF SANTA CRUZ DE TENERIFE (PORTS)



# ACTIONS IMPLEMENTED IN PORTS





# ACTIONS IMPLEMENTED IN PORTS

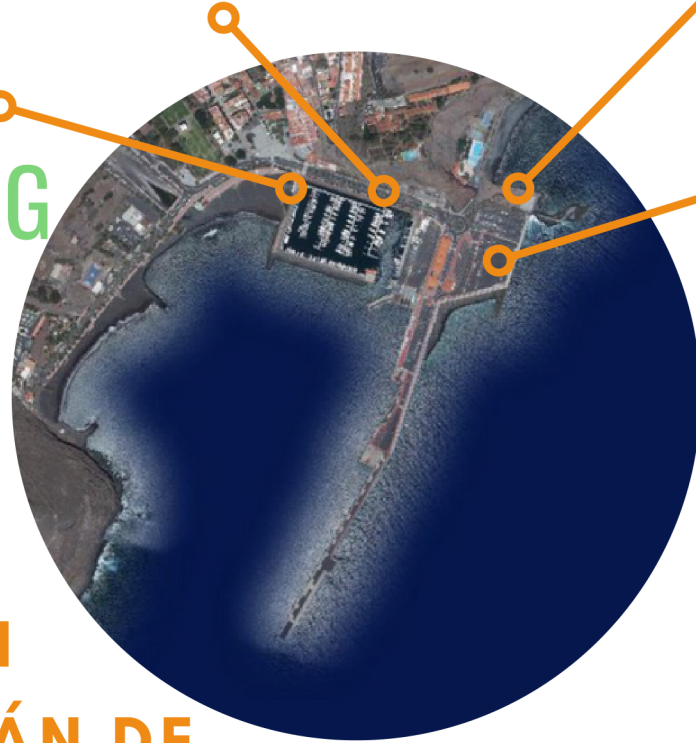
EV FAST CHARGING POINTS

OPS

SMART LIGHTNING

SELF-CONSUMPTION

SAN SEBASTIÁN DE LA GOMERA



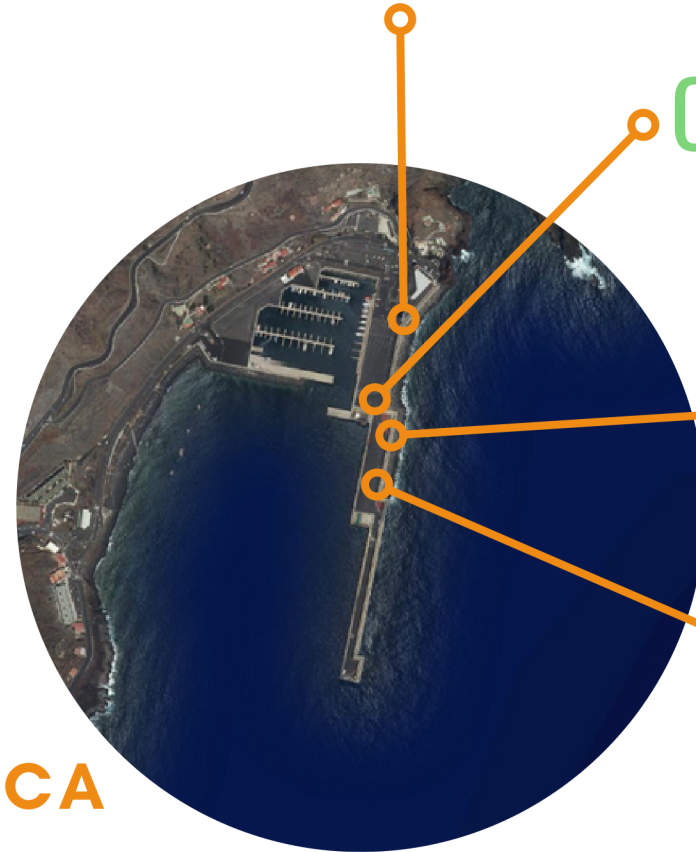
EV FAST CHARGING POINTS

OPS

SELF-CONSUMPTION

SMART LIGHTNING

LA ESTACA (EL HIERRO)

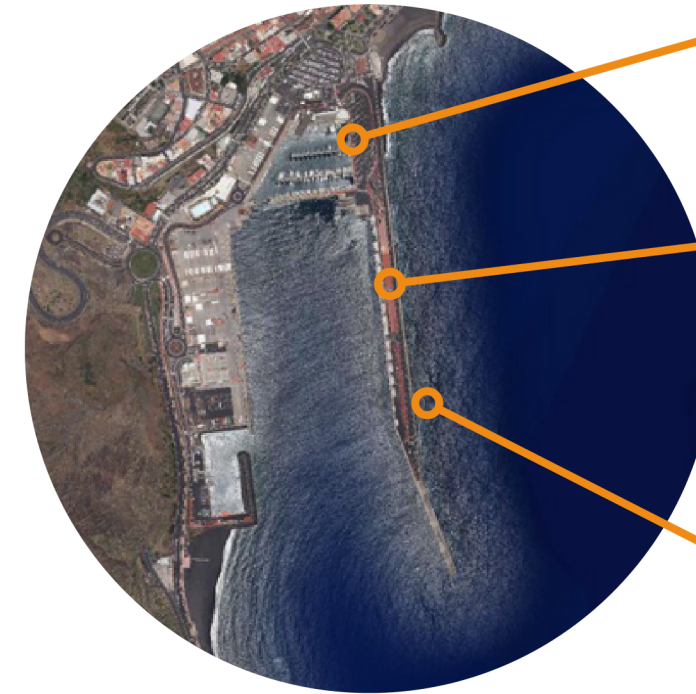


SANTA CRUZ DE LA PALMA

OPS

EV FAST CHARGING POINTS

SMART LIGHTNING







# TENERIFE PORT ZERO

## IN 2035

SETTING AMBITIOUS CARBON REDUCTION/NEUTRALITY TARGETS

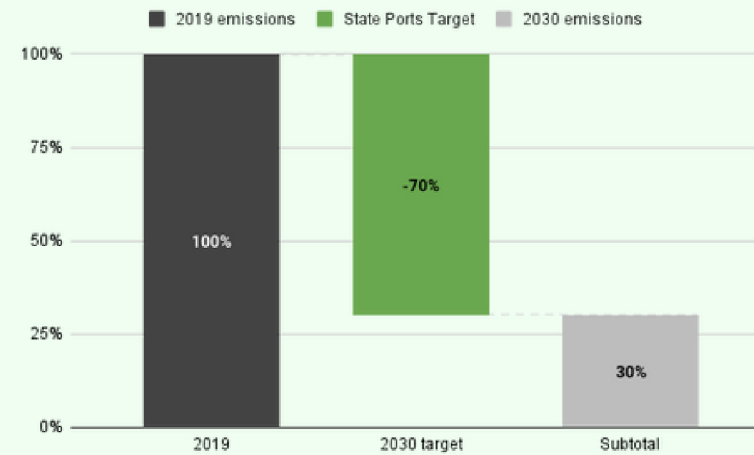


IN THE CONTEXT OF SETTING AMBITIOUS CARBON REDUCTION/NEUTRALITY TARGETS, IT IS NOTEWORTHY THAT THE PORT AUTHORITY HAS ESTABLISHED MORE AMBITIOUS REDUCTION GOALS THAN THE STRATEGIC FRAMEWORK OUTLINED BY THE STATE PORTS FOR 2030.

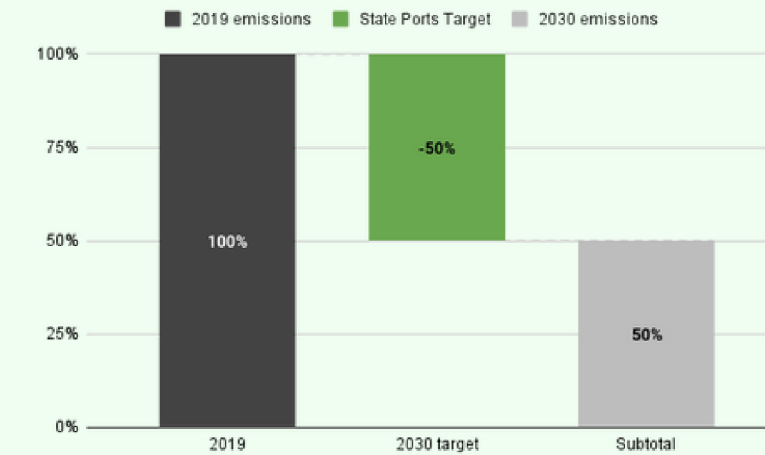
**TARJETS**



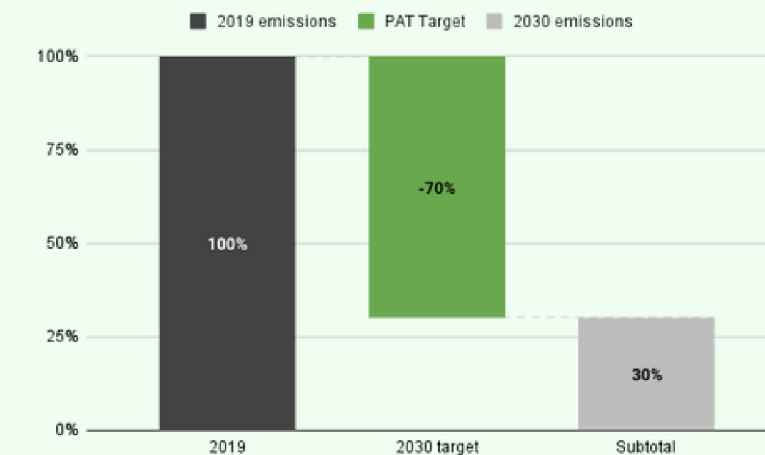
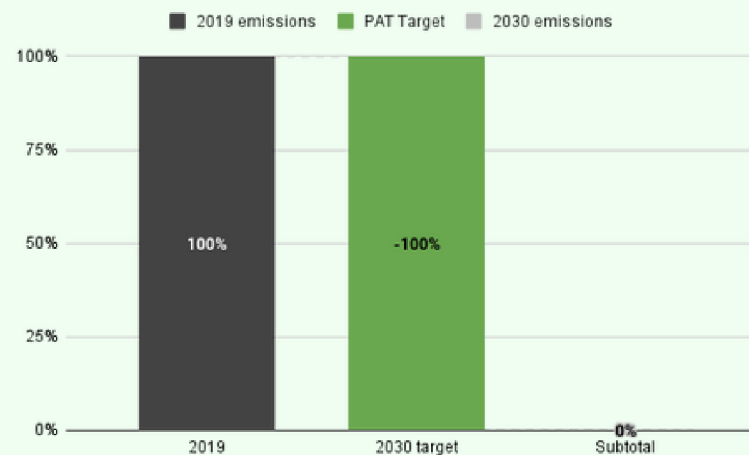
**SCOPES 1 AND 2**



**SCOPES 1, 2 AND 3**



Autoridad Portuaria  
Santa Cruz de Tenerife



IN ADDITION, THE PORT AUTHORITY AIMS TO ACHIEVE CARBON NEUTRALITY BY 2035 THROUGH THE IMPLEMENTATION OF A FORTHCOMING PROTOCOL.

**SETTING AMBITIOUS CARBON REDUCTION/NEUTRALITY TARGETS**



ShoreCONNECT

ShoreCO

VOLCAN DE TABURIENTE

SANTA CRUZ DE TENERIFE

**OPS**

**PROVISION OF PORT EMISSION REDUCTION EQUIPMENT AND SERVICES TO SHIPS,  
INLAND BARGES AND TRUCKS**

## OPS

To promote the adoption of OPS among different shipping companies, **the Port Authority will incentivize the implementation of this system by offering a 50% reduction in the berthing fees for any vessel utilizing onshore power supply.** This financial incentive aims to encourage and reward shipowners and operators who choose to prioritize sustainable practices and reduce emissions by connecting to OPS facilities while berthed at the port. By providing this significant discount, the Port Authority demonstrates its commitment to supporting environmentally friendly initiatives and fostering the widespread use of OPS technology within the maritime industry.

**BY IMPLEMENTING THE PROJECTED OPS SYSTEMS AND ENSURING THEIR EFFICIENT OPERATION, A SIGNIFICANT AMOUNT OF EMISSIONS WILL BE AVOIDED. SPECIFICALLY, THE CALCULATED EMISSIONS FROM VARIOUS POLLUTANTS AMOUNT TO 64,556.92 TONS OF CO2 EQUIVALENTS PER YEAR. THIS REPRESENTS A REDUCTION OF APPROXIMATELY 71% COMPARED TO THE MARITIME TRAFFIC EMISSIONS IN 2019.**

CO2eq emissions of marine traffic [ton]

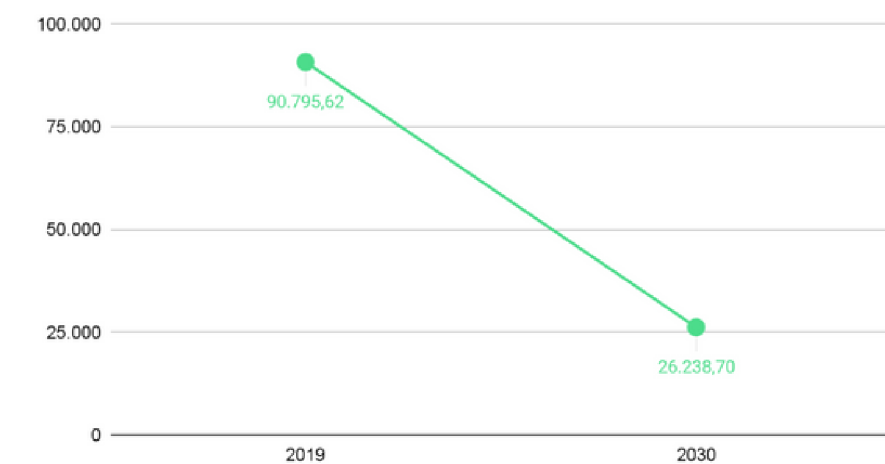


Figure 2. OPS impact on the carbon footprint 2019-2030





# CONTINUOUS IMPROVEMENT

INCREASING ENERGY EFFICIENCY OF PORT OPERATIONS



IT IS NOTEWORTHY THAT THE PORT OF SANTA CRUZ DE TENERIFE RANKS 72ND GLOBALLY IN THE WORLD BANK'S 2022 CONTAINER PORT PERFORMANCE INDEX, WHICH ASSESSES PORT PERFORMANCE BASED ON VESSEL TURNAROUND TIME.

THE PORT'S ABILITY TO MINIMIZE VESSEL STAY TIME CONTRIBUTES TO IMPROVED ENERGY EFFICIENCY IN OPERATIONS.

IN THIS YEAR'S EDITION, THE PORT OF SANTA CRUZ DE TENERIFE HAS CLIMBED 16 POSITIONS COMPARED TO THE PREVIOUS YEAR'S INDICATOR, SECURING THE 72ND SPOT IN THE GLOBAL RANKING, SURPASSED ONLY BY THE NATIONAL PORTS OF ALGECIRAS AND BARCELONA.

THE TERMINALS HAVE ACHIEVED THIS IMPROVEMENT THROUGH AUTOMATED AND PAPERLESS TRUCK ACCESS, SIMULTANEOUS UNLOADING OF TWO 20-FOOT CONTAINERS, EXCELLENT CRANE MAINTENANCE, ONGOING WORKER TRAINING, AND A STRICT POLICY OF ZERO ACCIDENTS AND ZERO ERRORS.

---

**INCREASING ENERGY EFFICIENCY OF PORT OPERATIONS**



# E-ISLAND: GENERA

USE AND PRODUCTION OF RENEWABLE ENERGY IN THE PORT

## E-ISLAND: GENERA

Consisted on the installation of self-consumption facilities, in order to cover the energy needs required at various points, within the correspondence of the Port Authority. From **photovoltaic and wind turbine installations, clean energy is obtained**, following the fundamental objectives of the e-ISLAND mobility plan.

THE INSTALLATION OF PHOTOVOLTAIC AND WIND ENERGY SYSTEMS HAS RESULTED IN **SIGNIFICANT ENERGY SAVINGS AND A NOTABLE REDUCTION IN CO2 EMISSIONS.**

THESE SUSTAINABLE INITIATIVES HAVE SUCCESSFULLY CONTRIBUTED TO **MINIMIZING GREENHOUSE GAS (GHG) EMISSIONS BY 215 TONS OF CO2 PER YEAR, THEREBY PROMOTING A GREENER AND MORE ENVIRONMENTALLY FRIENDLY PORT ENVIRONMENT.**



# OFF-SHORE WIND

---

USE AND PRODUCTION OF RENEWABLE ENERGY IN THE PORT



## OFF-SHORE WIND

Primavera Offshore Wind S.L., a company created by Enerocean, is executing the Primavera project, which involves the engineering, installation, operation, maintenance, and dismantling of a unique floating wind energy facility in the marine environment of the Port of Granadilla.

This project utilizes the innovative W2Power technology, which offers high power-to-weight ratios and low energy costs. The project has been recognized as the best project in marine renewable energy in the Atlantic Project Awards 2020.

THE OBJECTIVE IS TO INSTALL A FULL-SCALE FLOATING WIND PLATFORM WITH TWO 5.5 MW WIND TURBINES, CAPABLE OF GENERATING 11 MW OF RENEWABLE ELECTRICITY TO COVER THE AVERAGE CONSUMPTION OF AROUND 19,000 HOUSEHOLDS IN TENERIFE. THE W2POWER TECHNOLOGY FEATURES TWO WIND TURBINES MOUNTED ON A FLOATING STRUCTURE, CONSTANTLY ALIGNED WITH THE PREVAILING WIND DIRECTION TO MAXIMIZE ENERGY PRODUCTION.



# COMMERCIAL OFFSHORE WIND FARM

---

USE AND PRODUCTION OF RENEWABLE ENERGY IN THE PORT

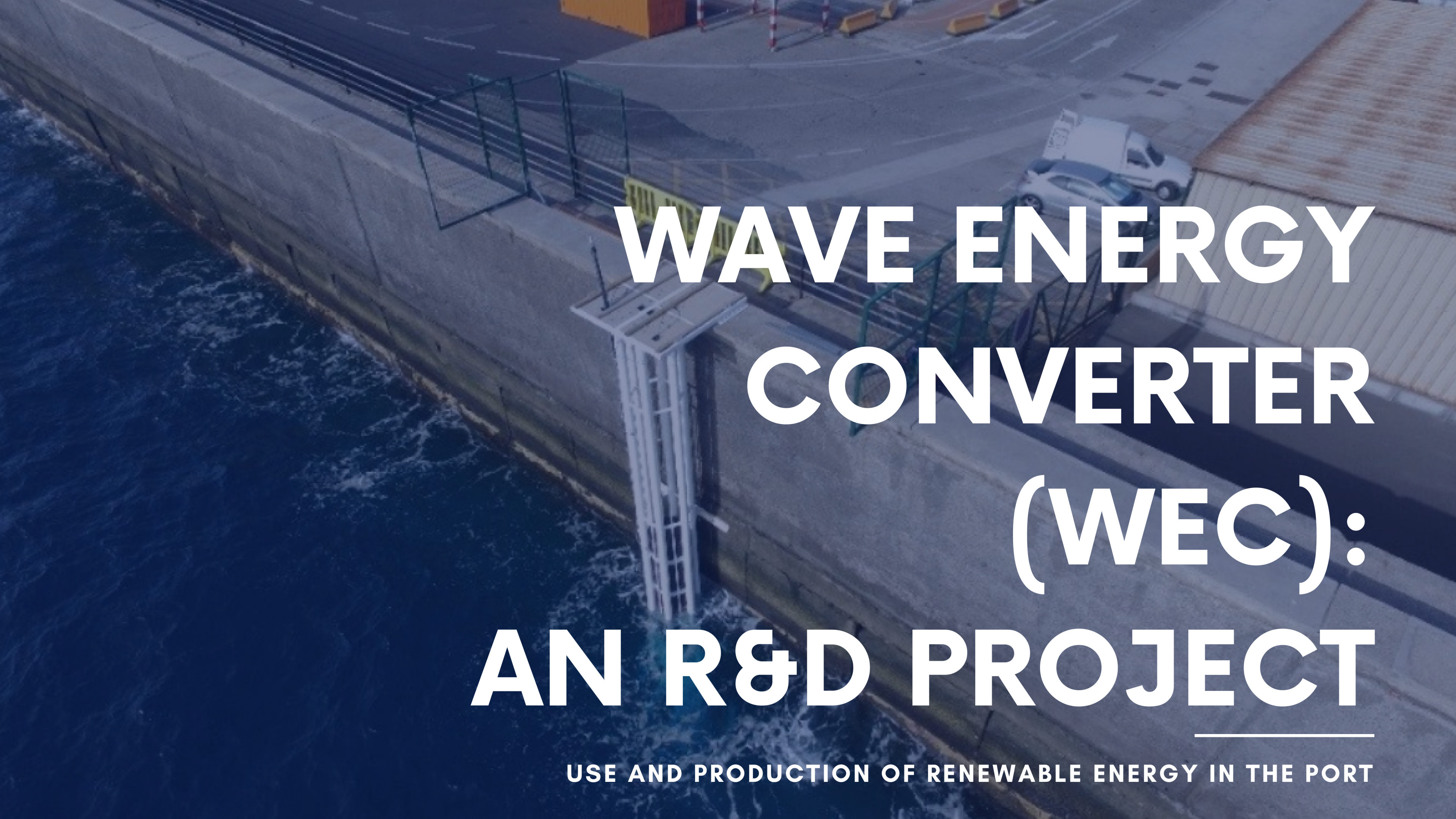
## COMMERCIAL OFFSHORE WIND FARM

Blue Float and Capital Energy have entered into an agreement to develop a commercial offshore wind farm in the port area of Granadilla. The project entails a significant investment of 125 million euros. Consists of 5 wind turbines that will produce 50 MW.

The project will utilize the innovative telescopic monopile technology known as Elisa, developed by ESTEYCO. This technology offers enhanced efficiency and cost-effectiveness in the installation of offshore wind turbines. By harnessing the power of offshore wind, the project aims to contribute to the transition to clean and renewable energy sources while reducing reliance on fossil fuels.

WITH ITS STRATEGIC LOCATION IN THE PORT AREA, THE OFFSHORE WIND FARM WILL NOT ONLY GENERATE CLEAN ELECTRICITY BUT ALSO PROVIDE OPPORTUNITIES FOR LOCAL ECONOMIC GROWTH AND JOB CREATION. THE PROJECT DEMONSTRATES A COMMITMENT TO SUSTAINABLE ENERGY DEVELOPMENT AND SERVES AS AN IMPORTANT MILESTONE IN ADVANCING THE RENEWABLE ENERGY SECTOR.





**WAVE ENERGY  
CONVERTER  
(WEC):  
AN R&D PROJECT**

USE AND PRODUCTION OF RENEWABLE ENERGY IN THE PORT



## WAVE ENERGY CONVERTER (WEC): AN R&D PROJECT

The project involves the development of a wave energy generation system designed to produce electricity on a large scale and withstand the harsh marine environment. This system, known as a Wave Energy Converter (WEC), captures the power of ocean waves and stores hydraulic energy within its structure, eliminating the need for energy conversion. The plan is to install a WEC plant in the Port of Granadilla, which will serve as a research and development platform to assess the system's technical and commercial viability.

THE INSTALLATION WILL ALLOW FOR VARIOUS TESTS AND STUDIES TO EVALUATE THE SYSTEM'S PERFORMANCE, EFFICIENCY, AND POTENTIAL FOR COMMERCIAL APPLICATION. THIS PROJECT AIMS TO GATHER VALUABLE DATA, ANALYZE THE SYSTEM'S FEASIBILITY, AND IMPROVE ITS DESIGN AND OPERATION, WITH THE ULTIMATE GOAL OF ADVANCING WAVE ENERGY TECHNOLOGY AND ESTABLISHING IT AS A SUSTAINABLE AND COMMERCIALY VIABLE RENEWABLE ENERGY SOLUTION. THE GENERATED ELECTRICAL ENERGY CAN BE USED WITHIN THE PORT INFRASTRUCTURE, BY PORT CLIENTS, NEARBY BUSINESSES, OR FED INTO THE GRID.





# FAST CHARGING POINTS

---

USE AND PRODUCTION OF RENEWABLE ENERGY IN THE PORT

## FAST CHARGING POINTS

The Port Authority, of Santa Cruz, Tenerife, within its program of continuous improvement of the facilities of services in the Ports of Tenerife, have installed **charging points for electric vehicles in the different ports of the Islands of La Palma, El Hierro, La Gomera and Tenerife.**

Therefore this comes under the: "**Sustainable Electric Mobility Plan e-ISLAND**", carried out by the Port Authority of Santa Cruz, Tenerife, in order to implement electric vehicles in the Canary Islands and sensitize the population to the use of these new technologies.

With all this, it is intended to develop an optimal recharging network in the ports of the province of Santa Cruz of Tenerife, and likewise, provide charging points for electric vehicles that move within the dock (Port Police, Port Authority Vehicles), in addition for the users of the ships, who make trips between Islands.

**THIS INITIATIVE HIGHLIGHTS THE COMMITMENT OF THE PORT AUTHORITIES TO PROMOTE **SUSTAINABLE TRANSPORTATION SOLUTIONS** AND FACILITATE THE **ADOPTION OF ELECTRIC VEHICLES WITHIN THE PORT AREAS.****



# INTELLIGENT PUBLIC LIGHTING

---

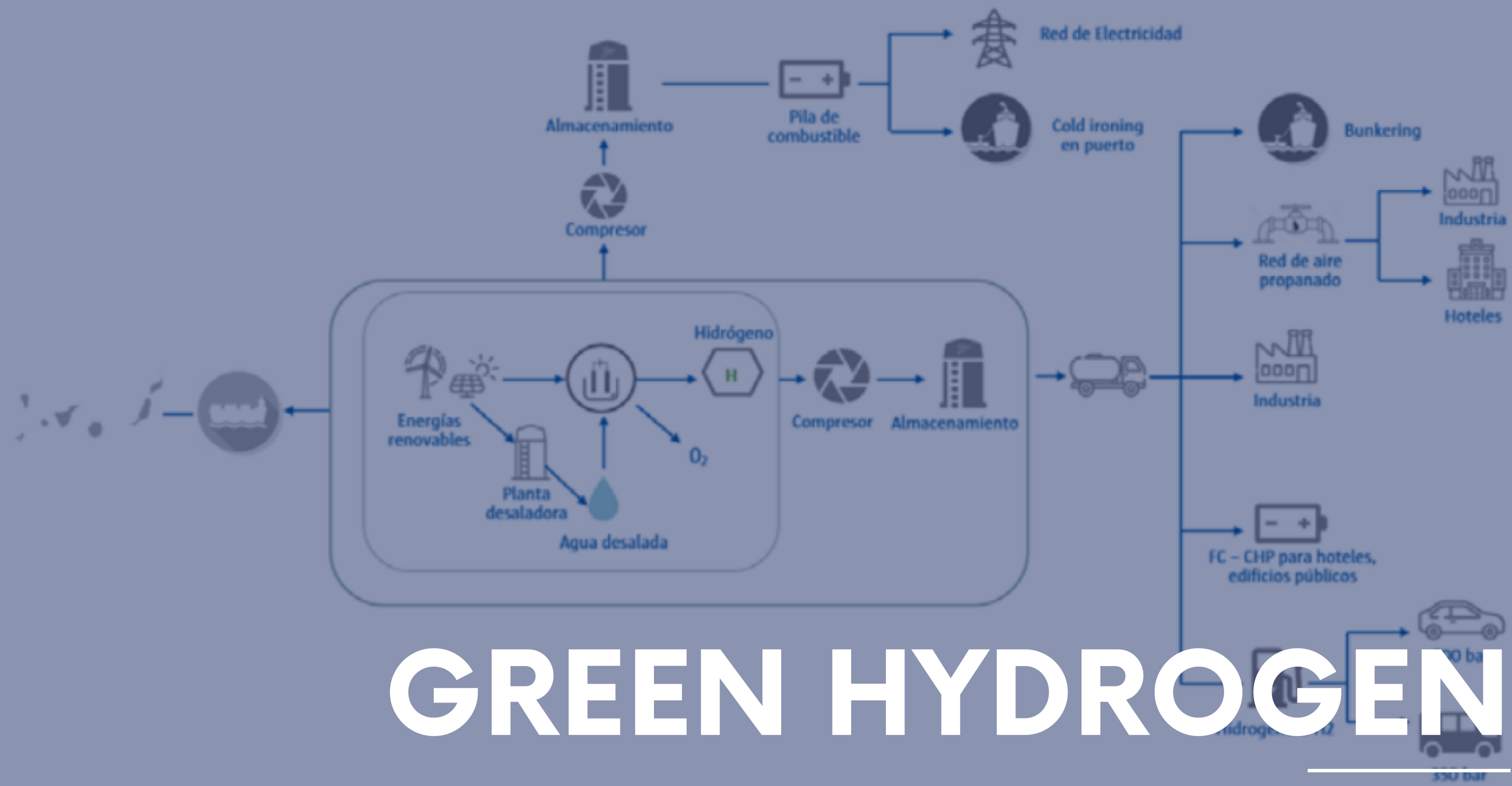
USE AND PRODUCTION OF RENEWABLE ENERGY IN THE PORT



44% ENERGY CONSUMPTION REDUCTION

SINCE THE BEGINNING OF 2013, THE PAT, UNDER THE SUSTAINABLE ELECTRIC MOBILITY PLAN E-ISLAND HAS CARRIED OUT A MULTITUDE OF PROJECTS TO CHANGE THE LIGHTING OF SODIUM VAPOR (400W-250W) TO LED LIGHTING (250W-150W), WITH THE AIM OF MAKING CONSIDERABLE ENERGY SAVINGS. SINCE THE PROJECT WAS LAUNCHED, A SERIES OF SMART PUBLIC LIGHTING INSTALLATIONS HAVE BEEN CARRIED OUT ON THE ISLANDS, WHICH HAS CONSIDERABLY REDUCED THE TOTAL POWER CONSUMED BY THE COMPANY'S PUBLIC LIGHTING IN THE PORTS OF THE ISLANDS AND THE COSTS OF IT BY A 44%.





# GREEN HYDROGEN

TESTING AND PILOTING NEW FUELS AND TECHNOLOGIES

## GREEN HYDROGEN

The Canary Islands' hydrogen cluster project aims to establish a sustainable energy system by transitioning to renewable energy sources. The project involves constructing **new renewable electricity generation plants and producing green hydrogen within the islands**. Tenerife's Granadilla port will serve as the production site due to its advantageous location. The generated green hydrogen will be used for **various purposes**, including port operations, vehicle power, and supplying hotels, rental cars, and delivery vans.

THE PROJECT AIMS TO **GENERATE 954 TONS OF HYDROGEN PER YEAR WHICH MEANS AVOIDING THE EMISSION OF 10.402 TONS OF CO2 PER YEAR.**



ADDITIONALLY, THE PORT AUTHORITY IS INVOLVED IN THE SEAFUEL PROJECT, WHICH PROMOTES RENEWABLE HYDROGEN UTILIZATION IN INSULAR AND REMOTE REGIONS OF EUROPE.





# **SYNTHETIC FUELS FROM PLASTIC WASTE**

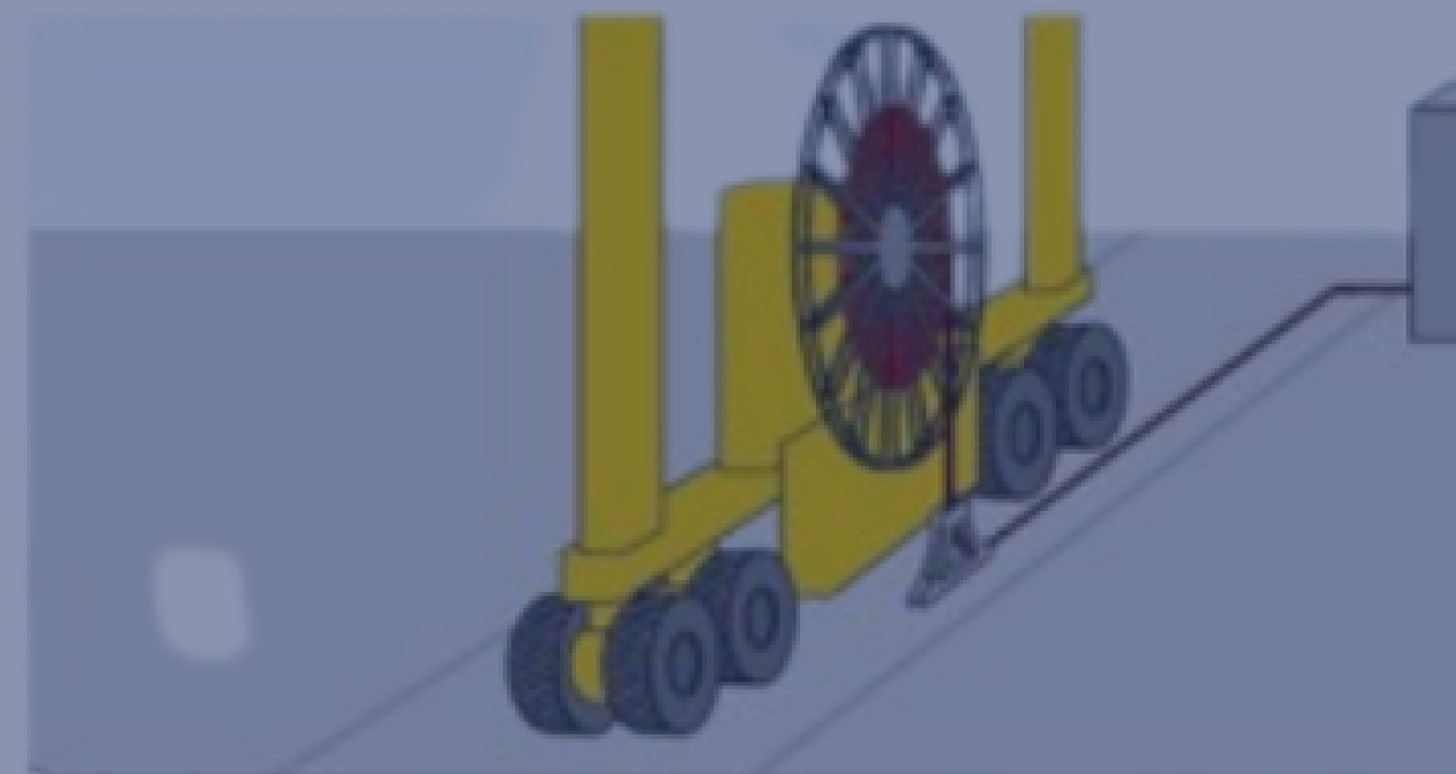
**TESTING AND PILOTING NEW FUELS AND TECHNOLOGIES**

THE PORT AUTHORITY, IN ANOTHER LINE OF WORK, IS IN CONVERSATION WITH A PARTNER TO INSTALL A PRODUCTION PLANT TO TRANSFORM NON-RECYCLED PLASTIC INTO VALUABLE PETROCHEMICALS. THROUGH A CHEMICAL PROCESS, PLASTIC WASTE IS CONVERTED INTO SECOND-LIFE FUELS, INCLUDING METHANE AND HYDROGEN.

THIS BREAKTHROUGH TECHNOLOGY OFFERS A PROMISING SOLUTION TO TACKLE THE 84% OF PLASTIC THAT IS CURRENTLY NOT RECYCLED WORLDWIDE. THROUGH THE PROPRIETARY PYROLYSIS PROCESS THIS PLASTIC WASTE IS TURNED INTO GAS, LIQUID AND SOLID FRACTIONS, PRODUCING SYNTHETIC FUELS AND GAS FOR THE OIL&GAS AND TRANSPORT INDUSTRIES. THE PROCESS IS REGISTERED UNDER INDUSTRIAL SECRECY IN ADDITION TO TWO PUBLISHED PATENTS.







# EH2 RTG

---

TESTING AND PILOTING NEW FUELS AND TECHNOLOGIES

The project aims to **decarbonize logistical operations in Port Terminals by utilizing hydrogen as a fuel source**. This involves implementing highly efficient ULPHE-PEM fuel cell power generation systems in port cranes, significantly reducing the carbon footprint associated with port operations. The use of hydrogen ensures zero emissions of CO<sub>2</sub>, greenhouse gases, and harmful particulate matter, promoting a sustainable and environmentally friendly approach to logistics. The e-H<sub>2</sub> RTG project involves **designing, validating, and demonstrating a pre-commercial prototype of an RTG crane with an electrical generation system based on innovative Ulphe-Pem fuel cell technology**.

THIS COLLABORATION BETWEEN PACECO MOMENTUM AND JALVASUB ENGINEERING AIMS TO **INTRODUCE HIGH-EFFICIENCY FUEL CELLS, ELIMINATING CO<sub>2</sub> EMISSIONS AND POSITIONING SPAIN AS A LEADER IN GREEN TECHNOLOGY**. THE PROJECT IS PART OF THE PORTS 4.0 FUND, FACILITATING INNOVATION IN THE LOGISTICS-PORT SECTOR.



# **ELECTRIFICATION OF A HARBOR PILOT VESSEL**

---

**PROVISION OF CLEAN SHIP INCENTIVES**



## ELECTRIFICATION OF A HARBOR PILOT VESSEL

The PLEaMAR project, supervised by the University of La Laguna, aims to support research teams and provide training in marine sciences and technologies in the Canary Islands region. It involves the electrification of the vessel Añaza P, replacing its power system with a fully electric propulsion train and battery.

The project is expected to be completed by June 2023 and has collaboration with international consortia for Horizon projects. Funding is provided by the Canary Islands Agency for Research, Innovation, and Information Society, with support from ULL and the Santa Cruz de Tenerife Harbor Pilots Corporation. The project aligns with the goals of reducing emissions and demonstrates the feasibility of using **100% electric propulsion systems in port operations**. The research team also highlights the potential for cost reduction and emission reduction through the use of renewable energy in the pilotage service.

**THE EMISSIONS PRODUCED BY THE PILOTAGE SERVICE DUE TO THE USE OF FOSSIL FUELS, MEASURED IN CO2 EQUIVALENT, RANGE BETWEEN 300 AND 350 TONS ANNUALLY.**

A large red ship is shown from a low angle, looking up at its multiple decks. The ship has a prominent red hull and dark grey structural beams. The background is a bright blue sky with scattered white clouds. The overall image has a semi-transparent blue overlay.

# H2 - OPS

PROVISION OF CLEAN SHIP INCENTIVES

## H2 - OPS

The OPS Master Plan Project collaborates with the EVERYWH2RE Project to develop an innovative pilot for supplying **ships with electric power from renewable sources** while berthed. The pilot project involves utilizing a 100 kW hydrogen-based fuel cell assembly.

The Port Authority of Tenerife, following the success of hydrogen fuel implementation in the Port of Valencia, has volunteered to materialize this project with the support of State Ports.

The pilot project installs a fuel cell provided by the EVERYWH2RE project, using hydrogen procured by the Port Authority to power the search and rescue vessel, Punta Salinas.

**THE PROJECT AIMS TO PROMOTE SHIP ELECTRIFICATION AND SET NEW INDUSTRY STANDARDS FOR SUSTAINABILITY IN THE MARITIME SECTOR.**



---

# 5 – CONCLUSION

---

# CONCLUSION

TENERIFE PORT ZERO



The collective efforts showcased in the Tenerife Port ZERO project represents a comprehensive endeavor aimed at transforming the Port Authority into a net-zero emissions entity by the year 2035. Through the implementation of innovative initiatives and the ongoing pursuit of new solutions, our vision of a sustainable and environmentally conscious port authority is becoming a reality.

By embracing technologies such as onshore power supply, hydrogen fuel cells, and synthetic fuels from plastic waste, we are actively reducing our carbon footprint and paving the way for a greener future. These projects, along with those on the horizon, demonstrate our unwavering commitment to sustainable practices and position us as pioneers in the industry.

With a clear trajectory towards achieving our emissions goals, we are confident that our endeavors will not only make a significant impact locally but will also serve as an inspiration and blueprint for other port authorities worldwide.

# CONCLUSION

Last but not least, the Tenerife Port ZERO project aligns with several **Sustainable Development Goals (SDGs)** established by the UN:



BY IMPLEMENTING TECHNOLOGIES SUCH AS ONSHORE POWER SUPPLY AND HYDROGEN FUEL CELLS, IT PROMOTES THE USE OF CLEAN AND RENEWABLE ENERGY SOURCES, CONTRIBUTING TO THE TRANSITION TOWARDS AFFORDABLE AND SUSTAINABLE ENERGY SOLUTIONS.



THE PROJECT INCORPORATES INNOVATIVE TECHNOLOGIES AND PRACTICES, SUCH AS SYNTHETIC FUELS FROM PLASTIC WASTE AND FUEL CELL POWER GENERATION SYSTEMS, FOSTERING ADVANCEMENTS IN INDUSTRY AND INFRASTRUCTURE WHILE PROMOTING SUSTAINABLE DEVELOPMENT.



ITS FOCUS ON REDUCING EMISSIONS AND ADOPTING ENVIRONMENTALLY FRIENDLY PRACTICES CONTRIBUTES TO CREATING SUSTAINABLE AND RESILIENT CITIES AND COMMUNITIES BY MITIGATING THE ENVIRONMENTAL IMPACT OF PORT OPERATIONS.



THROUGH THE TRANSFORMATION OF NON-RECYCLED PLASTIC WASTE INTO VALUABLE PETROCHEMICALS AND THE UTILIZATION OF CLEAN ENERGY SOURCES, THE PROJECT PROMOTES RESPONSIBLE CONSUMPTION AND PRODUCTION PATTERNS WHILE REDUCING WASTE GENERATION AND RESOURCE DEPLETION.



THE PROJECT'S OBJECTIVE OF ACHIEVING NET-ZERO EMISSIONS ALIGNS DIRECTLY WITH SDG 13, AS IT ADDRESSES THE URGENT NEED TO COMBAT CLIMATE CHANGE AND ITS IMPACTS BY IMPLEMENTING MEASURES TO REDUCE GREENHOUSE GAS EMISSIONS.



BY REDUCING EMISSIONS AND IMPLEMENTING SUSTAINABLE PRACTICES, THE PROJECT INDIRECTLY CONTRIBUTES TO THE PRESERVATION AND CONSERVATION OF MARINE ECOSYSTEMS, PROMOTING THE HEALTH AND SUSTAINABILITY OF MARINE LIFE.



IT INVOLVES COLLABORATIONS BETWEEN VARIOUS STAKEHOLDERS, INCLUDING PORT AUTHORITIES, ENGINEERING COMPANIES, AND RESEARCH INSTITUTIONS, FOSTERING PARTNERSHIPS AND SYNERGIES TO ACHIEVE SUSTAINABLE DEVELOPMENT OBJECTIVES.





Autoridad Portuaria  
Santa Cruz de Tenerife

