

Multi-year Expert Meeting  
on Transport, Trade Logistics and  
Trade Facilitation  
8th Session

**Climate Change Adaptation for Seaports  
in Support of the 2030 Agenda  
for Sustainable Development**

27–28 October 2020

**Climate Change Impacts and  
Adaptation: Key Issues and  
Experiences, Recent Initiatives and  
Developments**

Presentation by

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(On behalf of **Mr. Federico Torres**

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**Climate change impacts and adaptation: Key issues and experiences, recent initiatives and developments.**

**Raúl Cascajo – Head of Environmental policies  
On behalf of Mr. Federico Torres – Head of Sustainability Transition  
Port Authority of Valencia**



**UNCTAD Multiyear Expert Meeting on Transport, Trade logistics and Trade facilitation (8th session).**



**Climate Change Adaptation for Seaports in Support of the 2030 Sustainable Development.**

**28<sup>th</sup> October 2020**



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1. Valenciaport: Introduction
2. Addressing Climate change:
  1. Fight against climate change
  2. Adaptation to climate change
3. Conclusions



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## 1. Valenciaport: Introduction

### 2. Addressing Climate change:

1. Fight against climate change
2. Adaptation to climate change

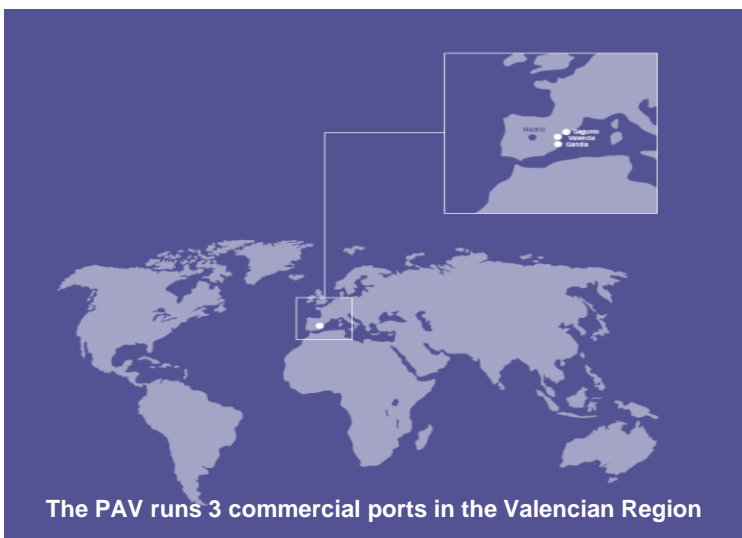
### 3. Conclusions



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## Valenciaport: Introduction

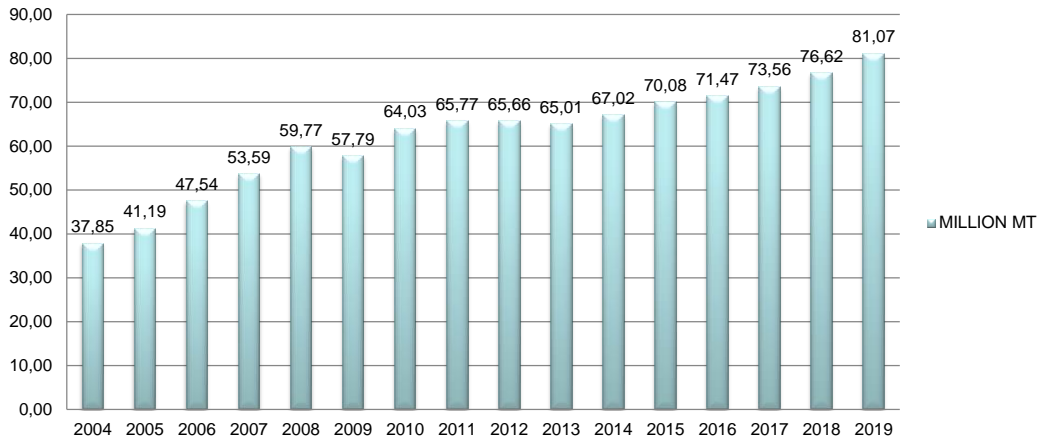


The **Port Authority of Valencia (PAV)** is a **State owned public entity** in charge of the management of **3 ports located along 80 kilometres** of the eastern border of the **Spanish Mediterranean coastline** in the Valencian Region: namely, the ports of **Sagunto, Valencia and Gandia**.

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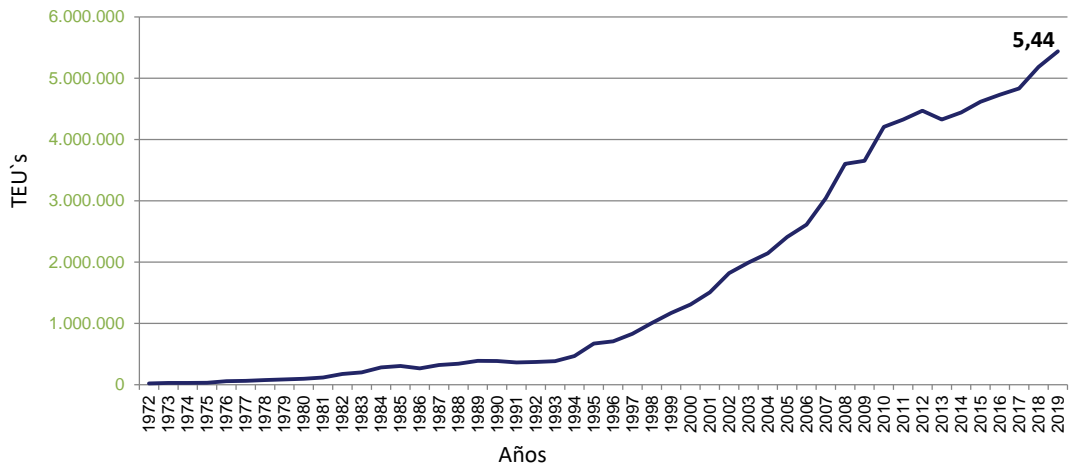
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## TOTAL CARGO THROUGHPUT APV 2004 - 2019



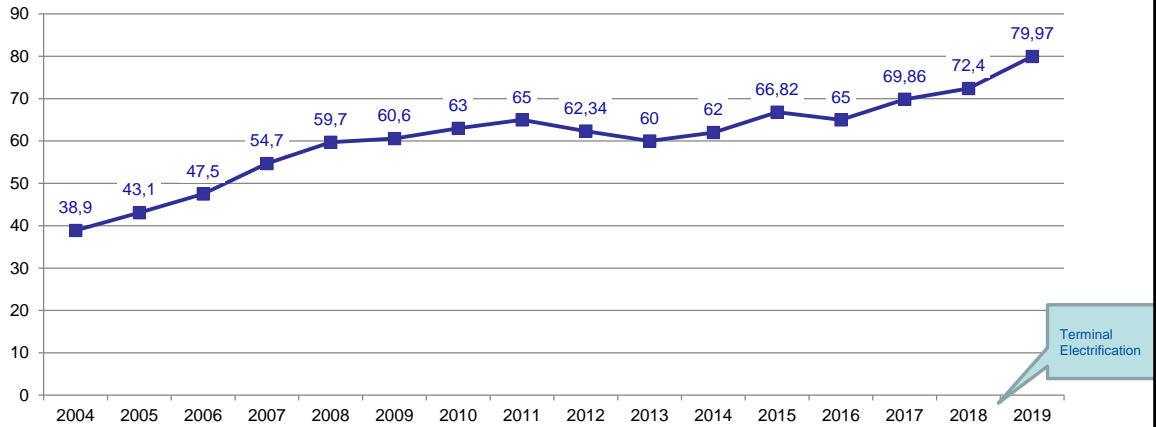
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## TOTAL TEUS THROUGHPUT APV 2004 - 2019



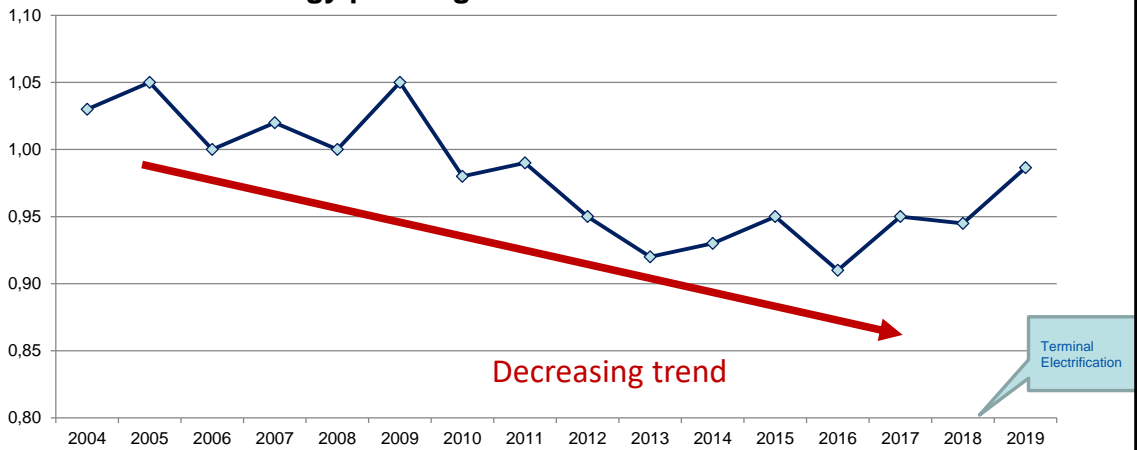
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### Total Electric Energy consumed ALL PORTS (GWh)



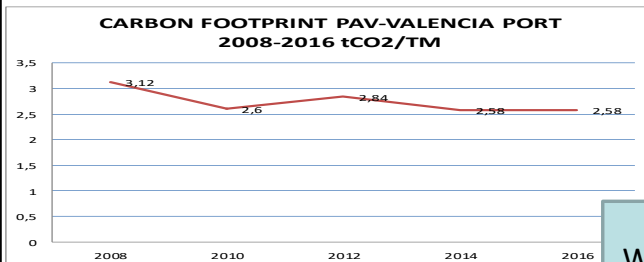
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### Total Energy per cargo handled kWh/MT



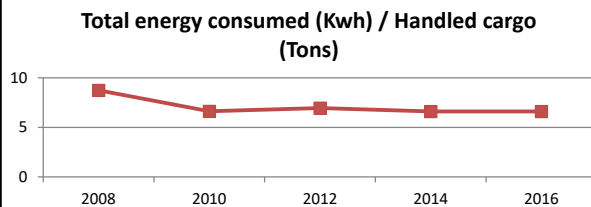
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## WHAT HAS THE PORT AUTHORITY OF VALENCIA DONE TO FIGHT CLIMATE CHANGE? Port of Valencia carbon footprint" verification according to ISO 14064- standard in 2013. Pioneer action!!!



Over 17% reduction of the carbon footprint for the 2008 – 2016 period while Cargo throughput has risen 24% during same period.

What are we doing to achieve this?



**Improvement of the energy efficiency by 25% from 8.76 Kwh/ton in 2008 to 6.60 Kwh/ton in 2016.**

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### Environmental targets:

- Zero emission port
- Energy self-sufficiency by 2030

### Energy transition plan:

- EMISSIONS REDUCTION
- IMPLEMENTATION OF RENEWABLE ENERGIES
- ENERGY EFFICIENCY IMPROVEMENT



## WHAT HAS THE PORT AUTHORITY OF VALENCIA DONE TO FIGHT CLIMATE CHANGE?

### • EMISSIONS REDUCTION:

✓ First GHG inventory for the Port of Valencia calculated in 2008.

#### Lessons learnt from Climeport Project:

1. The **vessel's impact on GHG emissions are over 45%** of the total at port areas, where close to 14% of this share comes from towage.
2. The **port machinery emissions are roughly 25%** of the total emissions at port areas.
3. The road transportation emissions represent 12% of the total emissions at port areas.
4. Total cumulative of the above: arnd. 82%
5. The share of the Port Authority GHG emissions at the port of Valencia represents a bit over 1% of the grand total.



## WHAT HAS THE PORT AUTHORITY OF VALENCIA DONE TO FIGHT CLIMATE CHANGE?

- EMISSIONS REDUCTION:**

- ✓ "Promotion of low emissions fuels in port facilities (LNG, H2)

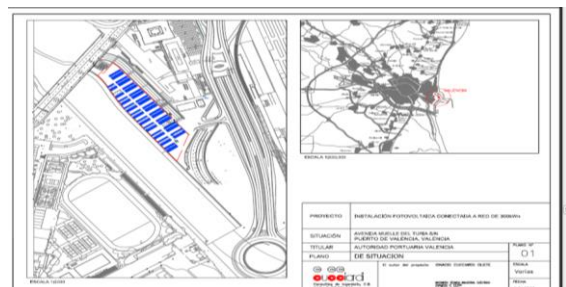


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## WHAT HAS THE PORT AUTHORITY OF VALENCIA DONE TO FIGHT CLIMATE CHANGE?

- IMPLEMENTATION OF RENEWABLE ENERGY :**

- ✓ Implementation of solar energy for heating and lightning at the port of Valencia
- ✓ Feasibility studies for the implementation of wind energy at the port of Valencia
- ✓ Upcoming construction of three photovoltaic plants in the ports of Valencia and Gandia (abt 8 MWp)



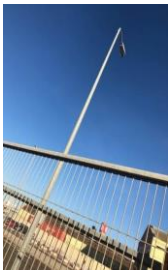
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## WHAT HAS THE PORT AUTHORITY OF VALENCIA DONE TO FIGHT CLIMATE CHANGE?

- ENERGY EFFICIENCY IMPROVEMENT:**

- ✓ Replacement of lights (LED) in buildings and public roads in the ports managed by the PAV.
- ✓ Updating of the pumps of the APV building's air-conditioning plant in the port of Valencia, replacing them with more efficient pumps and remote control systems.



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## WHAT HAS THE PORT AUTHORITY OF VALENCIA DONE TO FIGHT CLIMATE CHANGE?

- ENERGY EFFICIENCY IMPROVEMENT:**

- ✓ Replacement of the PAV service fleet with electric or hybrid vehicles.
- ✓ Promotion of energy efficiency measures in port facilities through “green agreements” in which they commit to making investments to improve their environmental performance.



Eco-RTG Gen-Set Downsizing



LNG Terminal Tractor



Dual-Fuel Reach Stackers



Energy Monitoring System

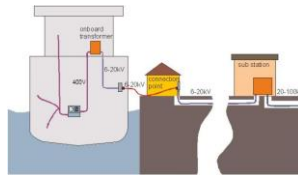
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## WHAT HAS THE PORT AUTHORITY OF VALENCIA DONE TO FIGHT CLIMATE CHANGE?

- **ENERGY EFFICIENCY IMPROVEMENT:**

- ✓ OPS implementation feasibility studies
- ✓ Construction of a 60 MVA electric sub-station at the port of Valencia

CARACTERÍSTICAS GENERALES	
Sistema	Corriente Alterna Trifásica a 50 Hz
Tensión nominal (kV)	132
Categoría de la línea	Primera
Longitud total (m)	954
Nº de circuitos	2 (Doble circuito enterrado)
Origen	ST La Punta
Final	ST APV
Tipología de la línea	Subterránea
Potencia máxima admisible (MVA x circuito)	755 A en 132 kV (171.41 MVA)
Potencia requerida (MVA x circuito)	30
Tipo de cable	HEPRZ-AI-1200 mm <sup>2</sup> HITZ 132 kV
Tipo de canalización	Zanja entubada homogénea
Categoría de la red	A



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## WHAT CAN WE DO TO ADAPT TO CLIMATE CHANGE?

- LIMITING THE IMPACTS
- REDUCING THE VULNERABILITIES
- INCREASING THE RESILIENCE



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## WHAT HAS THE PORT AUTHORITY OF VALENCIA DONE TO ADAPT TO CLIMATE CHANGE?

- **CRISI ADAPT II PROJECT (Funded by the EIT Climate-KIC)**
- This project aims to monitor and improve the adaptation planning through a real-time implementation and validation according to near and seasonal range forecast of climate risks.
- The project consists on 4 demonstrations in 4 different European regions.
- 5 countries participate in this project (Spain, Portugal, Cyprus, Malta and Italy).
- **Expected results:** identification the risks associated with climate change and elaboration a tool for the early assessment and prevention of the impacts of climate change on cities, their citizens and critical infrastructures such as ports.

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## WHAT HAS THE PORT AUTHORITY OF VALENCIA DONE TO ADAPT TO CLIMATE CHANGE?

- **ECCLIPSE PROJECT (Funded by the EU through the Interreg Sudoe programme)**
- This project focuses on the adaptation of seaports to climate change. The project will make an impact analysis through instruments and early climate prediction models, awareness actions, prevention and action strategies adapted to southwestern Europe.
- 3 countries participate in this project (France, Portugal and Spain).
- **Expected results:** Development of tools (assessment methodologies, local climate prediction models, strategies, plans and protocols) enabling the ports of the SUDOE area to face up to the threats to their infrastructures and operations (such as rising sea levels, heat waves, cyclonic tides, etc.) resulting from climate change.



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## CONCLUSIONS:

- Climate change must be addressed on a global scope.
- Ports are particularly vulnerable to the effects of climate change as they are in the frontline.
- International commitments on fighting climate change should be monitored and reviewed regularly, and governments must allocate funds to ease the initiatives to reduce the effects of climate change.
- Adaptation measures are undergoing but further research must be carried on to assess the potential effects of climate change on port infrastructures.

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**Thank you very much for your attention!**



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