



## Developing Sustainable Port Infrastructure Projects: Opportunities & Challenges

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*8th Mediterranean Ports and Shipping 2021*

**Mediterranean**  
Ports and Shipping **2021**

- Who we are...
- Port Sustainability drivers
- SMART Ports in challenging times
- Port authorities as Sustainable Infrastructure providers: Life cycle of Port Infrastructure
- Towards sustainable PPP development. Some initiatives
- Conclusions

## The Port Authority of Valencia manages three ports

**SAGUNTO:** 6.96 million Tons  
53,442 TEUs  
156,400 Vehicles

**VALENCIA:** 73.72 million Tons  
5.39 million TEUs  
1,112,727 Passengers  
677,111 Regular Lines Passengers  
435,616 Cruise Passengers  
565,430 Vehicles

**GANDÍA:** 0.39 million Tons  
84,801 Regular Lines Passengers

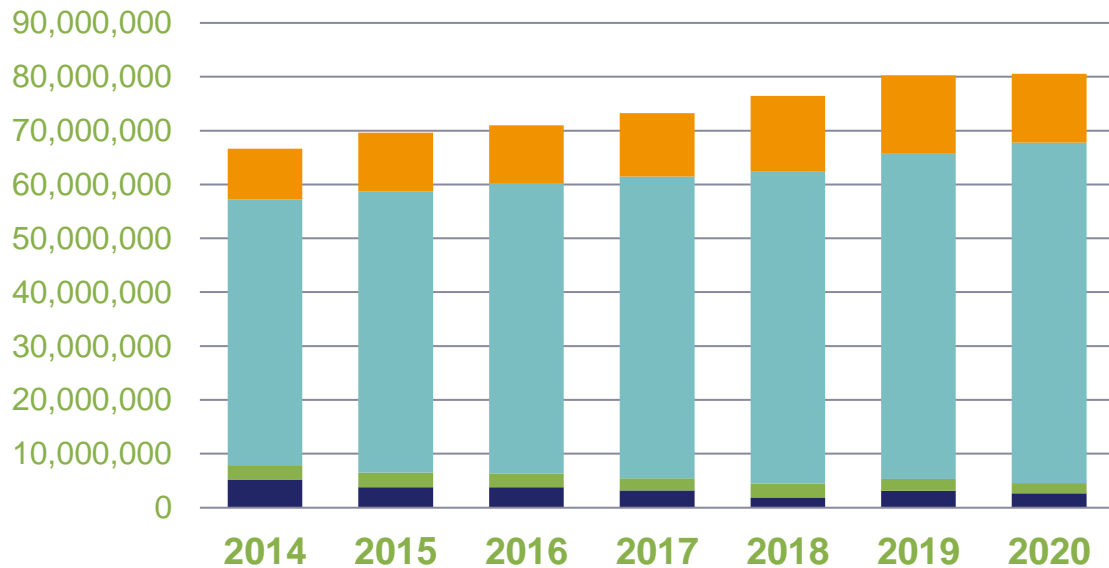
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**VALENCIAPORT:** 81.06 million Tons  
5.44 million TEUs



# PAV Traffic throughput

Tons/ type of presentation



■ Liquid bulk                      ■ Solid bulk  
■ Containerised general cargo    ■ Non containerised general cargo

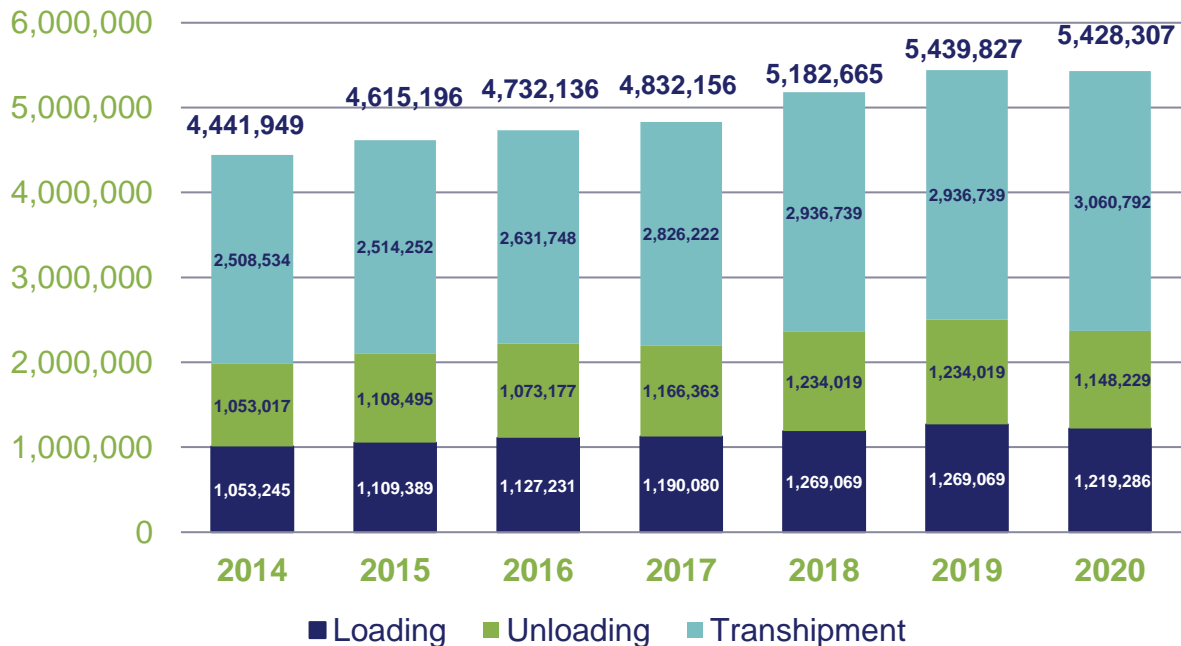
The container  
our main traffic

**78%**



# PAV Traffic throughput

## TEUs loading, unloading and transshipment

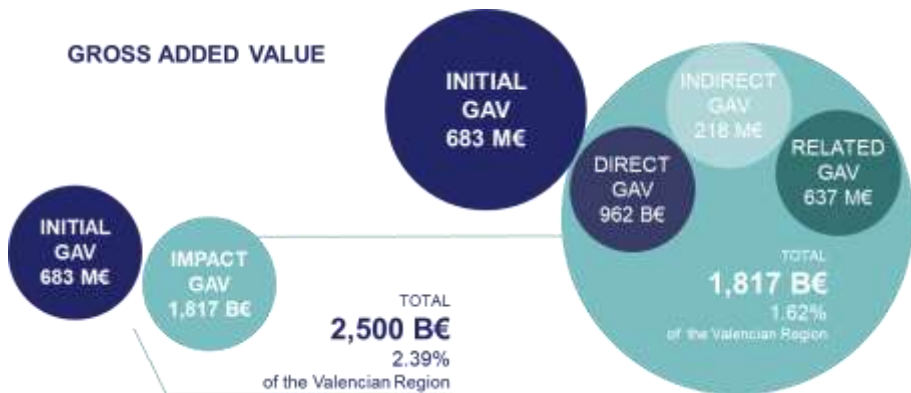


Gate/transshipment port  
Mixed hub concept

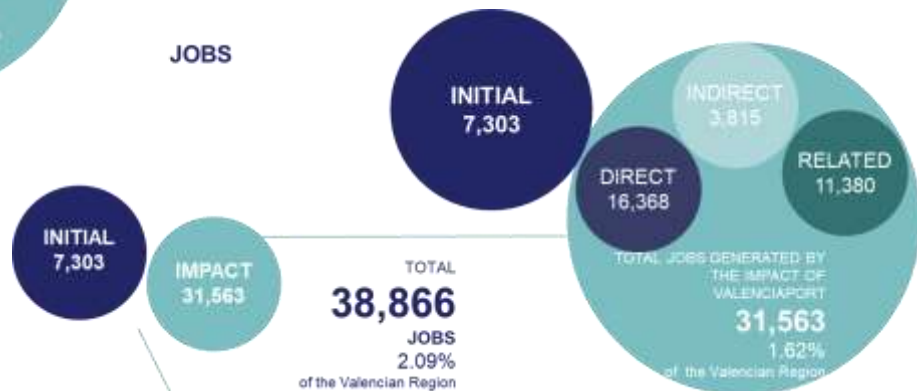


# Valenciaport Economic Impact

## GROSS ADDED VALUE



## JOBS

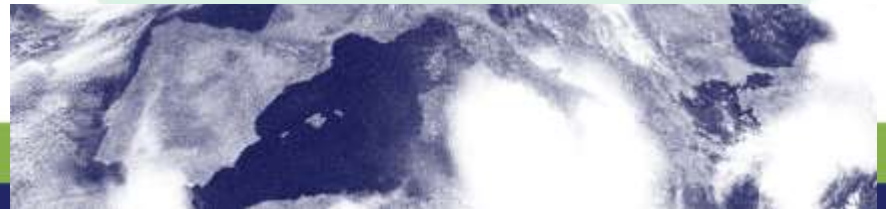
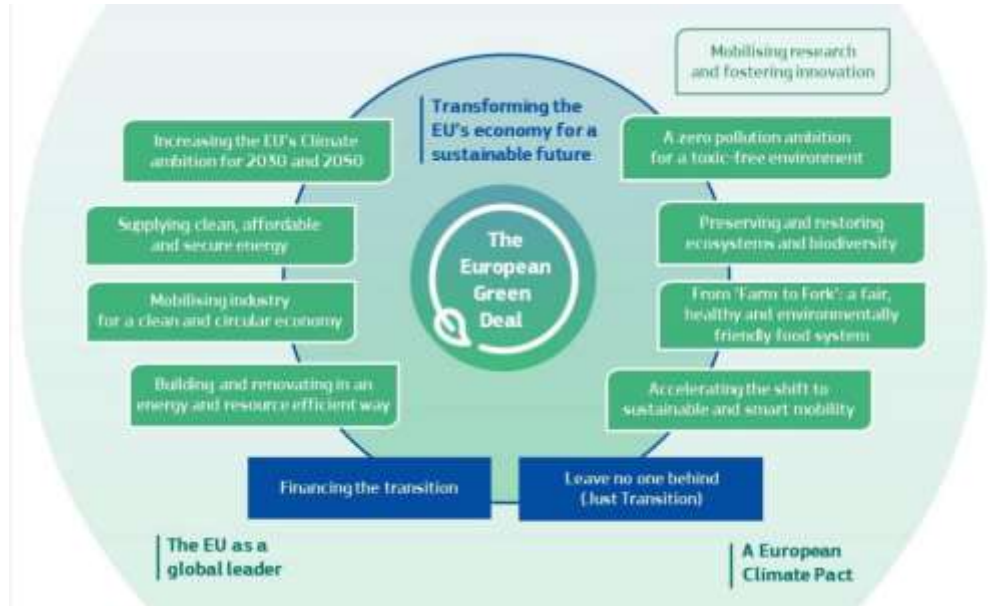


# Port based logistics are key & active to contribute to goal and regional challenges

- **Contributing to European long-term vision for a prosperous, modern, competitive and neutral economy**
  - Evolving along a green, safe, digital & social pathway
- **Contributing to UN Sustainable Development Goals**



SUSTAINABLE DEVELOPMENT GOALS



# Port based logistics are key & active to contribute to goal and regional challenges

## Actions



fresh air, clean water,  
healthy soil and  
biodiversity



renovated, energy  
efficient buildings



healthy and affordable  
food



more public transport



cleaner energy and  
cutting-edge clean  
technological  
innovation



longer lasting  
products that can be  
repaired, recycled and  
re-used



future-proof jobs and  
skills training for the  
transition



globally competitive  
and resilient industry



Climate



Environment and oceans



Energy



Transport



Agriculture



Finance and regional development



Industry



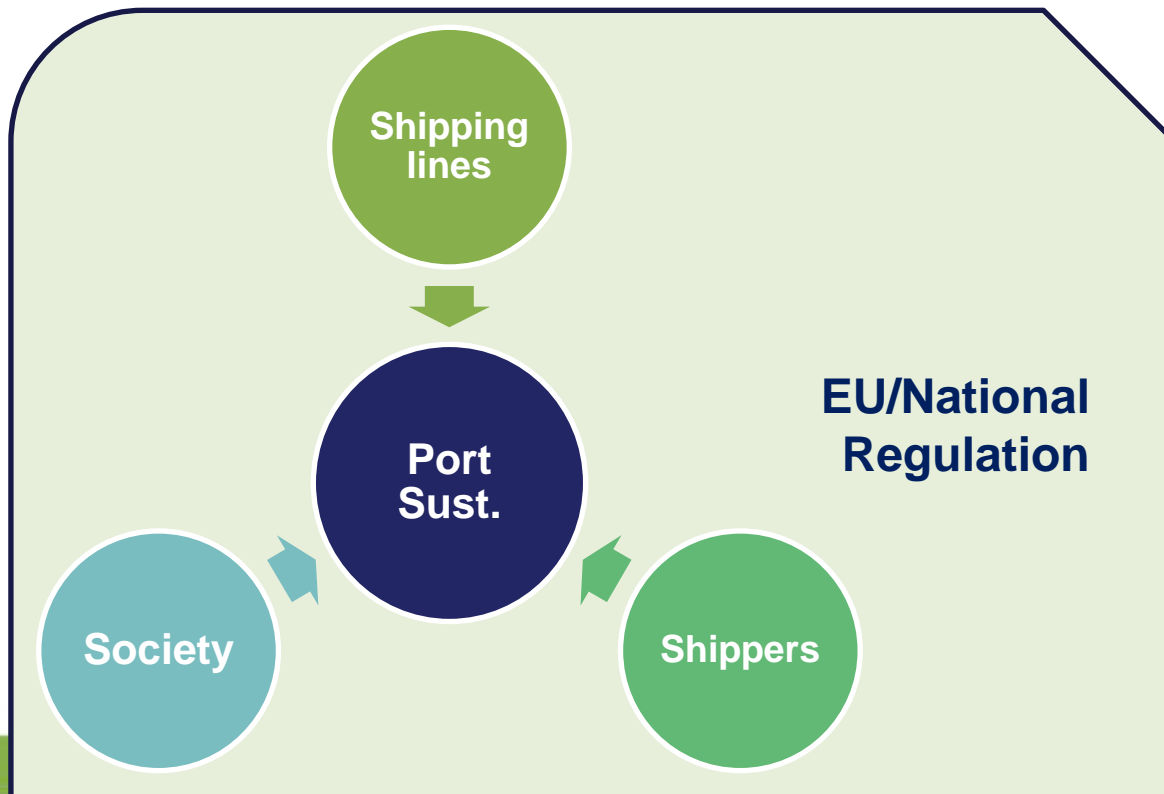
Research and innovation



...and will be also a key element of the post COVID19  
recovery contributing with more  
**RESILIENT, SUSTAINABLE** and **COMPETITIVE**  
supply chains



# Port Sustainability Drivers



# A changing (and challenging) Shipping World: Implication for ports

## More Complex

- Segmented **terminal capacity**
- Pressure in **port performance**. Reducing turnaround times. Automation
- Peaks of demand. Better **allocation of resources**. Internal traffic. Congestion

## More Investment

- **Bigger infrastructure** (channels, dredging)
- Need for Dedicated terminals. **Changing on PPP investment models**
- Fighting for the hinterland – **Promoting intermodality**

## More Competitive

- Customer **Concentration**. New groups/alliances
- **Reducing ports of call** and port connectivity
- Increasing **Port Competition** in main lines
- **Geographical advantages at risk**
- More bargaining power

## More Efficient

- Improving **competitive advantages** (price, quality)
- Improving **general port performance** (not only terminal handling)
- **Green- Shipping**

# Sophisticated shippers: Implication for ports

## More Transparent

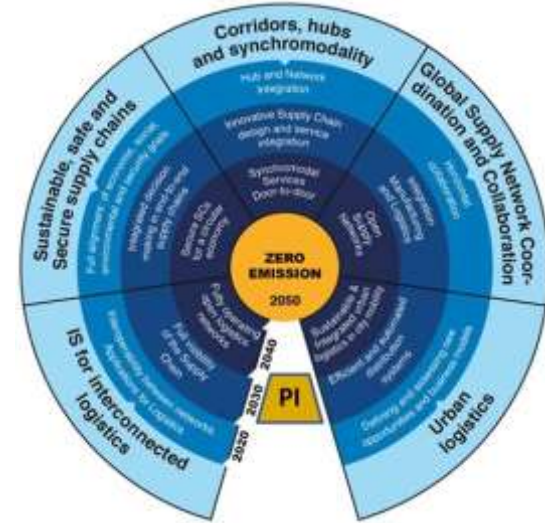
- Competition between supply chains (including the port)
- Better understanding of shipper needs
- Improve coordination between logistics actors

## Faster

- Promotion of **syncromodality**
- Improving **turnaround times**
- Improved **PCS** functionalities.
- **Connectivity** between Port & Logistics PCS

## More Secure

- **Cybersecurity** protection
- **Insurance** / legal



Towards the “physical Internet”?

# A more demanding society: Implication for ports

## Greener

- Environmental requirements –
- Environmental Agenda for Ports - Green Ports
- Decarbonization of port activities
- Port contribution to Green Shipping:
  - LNG facilities
  - Cold Ironing
  - Adapted port dues

## More Inclusive

- Social dimension of port clusters.
- Cluster approach for port challenges
  - Reputation programs
  - Transparency

## More Proactive

- Climate Change mitigation
- Circular economy
- Blue Economy promotion:
  - Cruise services development
  - Fishing activities vs. Commercial activities



License to operate?

# Our vision for the Smart Ports in 2030

## Connected Port:

- Cooperation
- Information
- Intelligence
- Transparency
- Cybersecurity



## Efficient Port:

- Logistics chain vision  
(Intermodal,  
Syncromodal)
- Automated
- Integrated (PI)
- Space optimization



## Responsible Port:

- Zero Emissions
- Energy Transition
- Circular economy
- Integration with the territory (City Port)
- Blue Economy
- Climate change
- Security and Resilience



Advanced Port  
Ecosystem

## Learning Port:

- **Homo-centric**. Human Capital Development
- **Collaborative** along the Port Community
- **Innovation**. Open to new business development opportunities
- Ports Co-opetition. **Knowledge Networks**

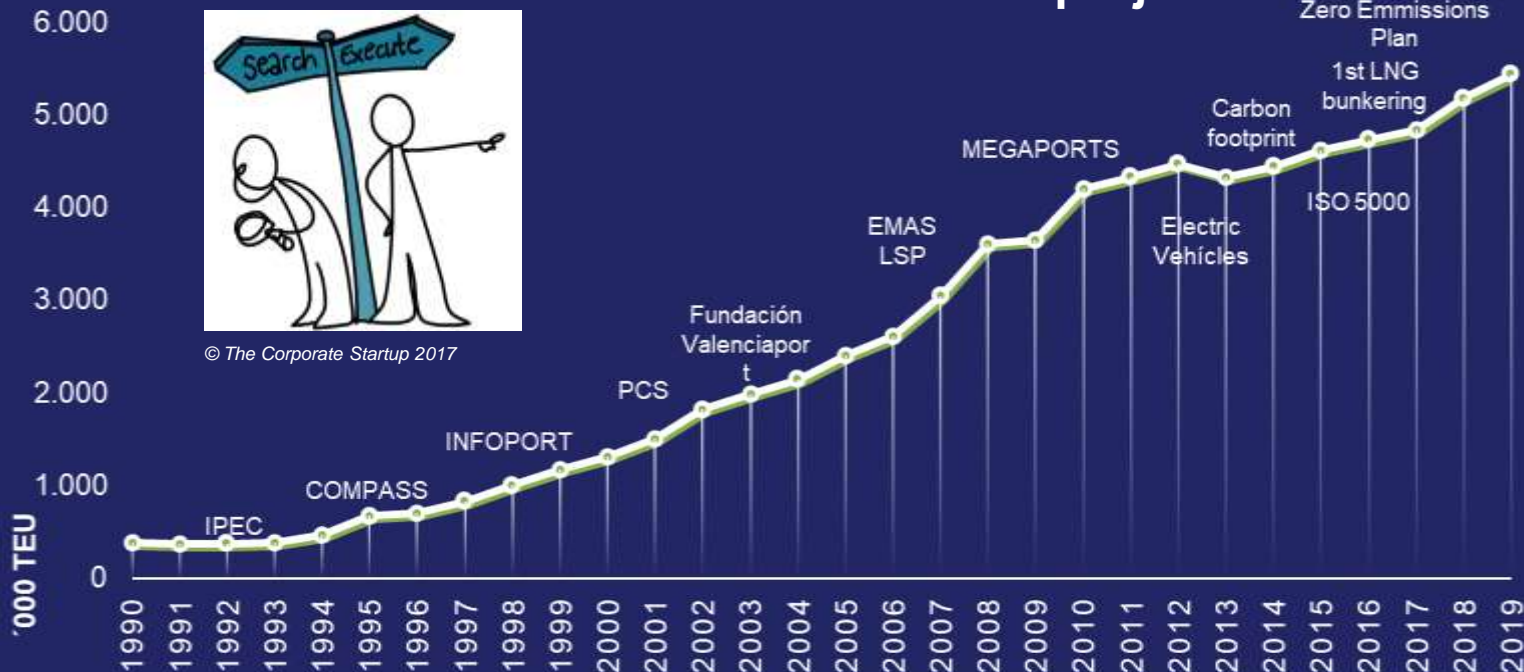


# Valenciaport: The “Ambidextrous” Port

More than 200 R&D projects



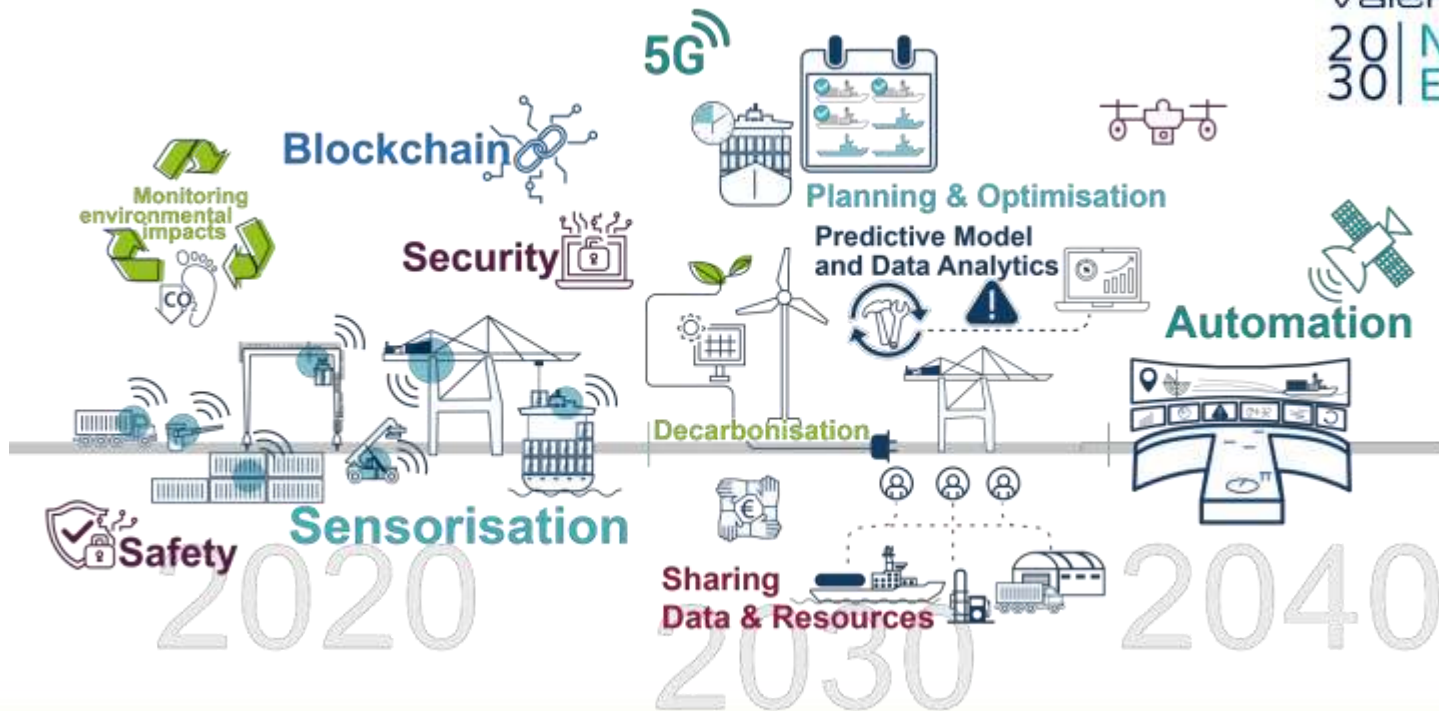
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valenciaport  
20 | Net Zero  
30 | Emissions

# Decarbonisation: in the center of Valenciaport Port Community Innovation ROADMAP

valenciaport  
20 | Net Zero  
30 | Emissions





# Port Sustainability Co-opetition – Learning with the best-in-class

valenciaport  
20 | Net Zero  
30 | Emissions





## 8 Action Plans

# Fostering sustainability of existing port operations



- **First application of hydrogen technologies in port handling equipment in Europe**
- **Transition towards an effective low-carbon/zero-emission European port industry** and safe operative model
- **Piloting, evaluating and demonstrating new Fuel Cell technologies oriented to increase energy efficiency, decarbonisation and safety of port terminals.**

# Valenciaport as a Port Infrastructure provider



- Valenciaport acts as **landlord port**, providing **basic infrastructure** but relying in the **Public Private Partnership** for the complete development of the operational infrastructure
- Valenciaport provides: breakwaters, quays, sea accessibility, railway infrastructure, road accessibility, among others.
- More than **575 M€ investment in the period 2021-2025**

# Valencia Port Development 1990 - 2020

Total Throughput 1990: 11.975.945 t  
Container Traffic 1990: 387.162 TEU  
Maximum Capacity: 1,4 Mill. TEU



1990

Total Throughput 2020: 80.882.224 t  
Container Traffic 2020: 5.428.307 TEU  
Maximum Capacity: 11 Mill. TEU



2020

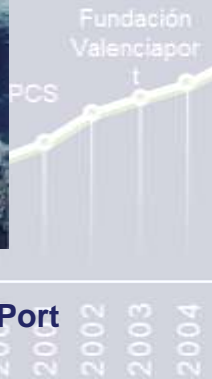
'000 TEU

In 1990...

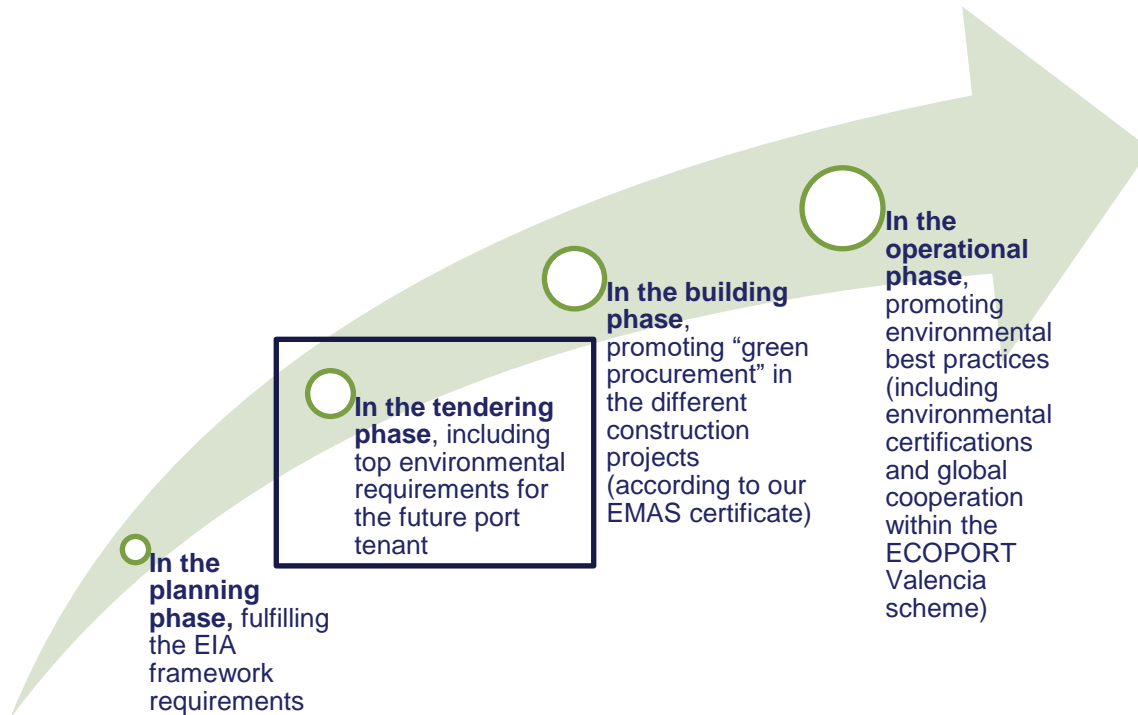
7<sup>o</sup> Mediterranean Container Port  
13<sup>er</sup> European Container Port  
53<sup>o</sup> World Container Port

In 2020...

2<sup>nd</sup> Mediterranean Container Port  
5<sup>o</sup> European Container Port  
28<sup>o</sup> World Container Port



# Four stages of environmentally friendly PPP port development



# Promoting Sustainability in the PPP Process

- The tendering phase as a **key element for sustainable infrastructure** development
- **Best in class tenants** aligned with sustainability strategy
- Open to innovation and **co-creating the Port of the Future**



# Social requirements – beyond the economics

- Business plan requirements:
  - **CSR Plan:**
    - Objectives and Strategy
    - **Stakeholders involvement** plan;
    - **Corporate Governance**
    - CSR Commitments:
      - **Gender equality**
      - Stable employment and economic growth
    - **Impacts on society** and the community. Integration and cohesion measures
    - Codes of **Conduct**





# Environmental requirements – beyond the economics

- Environmental Plan
  - Commitment to **EMS Development & Cooperation with the ECOPORT Scheme**
  - **Environmental Protection Plan** for the building phase
  - Specific **CO2 reduction measures** to be taken
  - **Renewable energy** to be used (as a share of total energy to be used during the concession)
  - **Machinery & Equipment adapted to renewable power supply** (as a share of total machinery & equipment to be deployed)
  - **Water recycling**



# Current initiatives under development

- Currently, Valenciaport is promoting two big PPP projects:
  - **Northern Container Terminal**
  - **Public Passenger Terminal**
- For both projects, **Valenciaport provided the basic infrastructure** and launched a “**call for tenders**” under the Spanish law to attract interested private partners to **co-develop and operate** the terminals
- Following our strategy and commitment, we include **sustainability conditions in the tendering phase**
  - **State-of-the-art sustainable, flexible and innovative standards**
  - **Environmental and CSR measures to be implemented**

# Northern Container Terminal: the results



- Final offer received:
  - Fostering **intermodality** x 4
  - 100% machinery & equipment **electrified** – **Hydrogen**
  - On shore **power supply** for ships calling the terminal
  - 100% power **renewable** energy origin
  - IA to ensure **efficiency**
  - Intelligent **low consuming** lightning and buildings
  - 34% waste **water re-use**
  - **98% reduction in potential CO2 emissions**

# Passenger Terminal: the results



- Final offer received:
  - **100% power produced on site** from **renewable** sources (wind, photovoltaic, H2, biofuels)
  - **Zero emissions facility**
  - **Circular economy**: waste recovered (ships&terminal) to produce biofuels
  - **On Shore Power Supply for vessels**
  - **Electric car friendly**
  - **Protecting cultural heritage**

# Conclusions: Towards the Zero Emissions Port

Valenciaport it's been working hard to foster the environmental performance of the port

This includes co-operate (and “co-opete”) within the Port Community

New port infrastructure development requires state-of-the-art sustainable terminals to cope with global challenges

PPP should be governed aligned with public sustainable objectives

Recent examples proves that including sustainability requirements in the PPP contracts pays the effort

Sustainability should be included in all the life cycle for future infrastructure investments!

# OBJECTIVE 2030: ZERO EMISSION PORT



Wind power

Air quality control

Electricity supply to ships and machinery

Water quality control

Photovoltaic energy

Mussel platform

Hydrogen

Tram line 10

Supply of LNG to ships and machinery

Port innovation Hub

Water quality control

Hydrogen

Air quality control

Aportem - Solidarity port

Specialised training centre

Electrical substation



Complementary Valencia-Sagunto



Energy self-sufficiency



Smart port

Intermodal ports / Transport centres

EXTENDED PORTS



Puerto de San Luis intermodal station

# UN MÓN A BON PORT

*Navegant amb els ODS*

**Exposició dels Objectius  
de Desenvolupament Sostenible  
en el Port de València**

**Edifici del Rellotge**

**Des del 30 de setembre  
fins al 21 d'octubre**





**THANKS FOR YOUR ATTENTION**

**Mediterranean**  
Ports and Shipping **2021**

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