Decarbonisation strategy for ports. Challenges ahead.

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Head of Environmental Policies
Port Authority of Valencia

Decarbonisation strategy of the Port Authority of Valencia

1. Valenciaport in figures
2. Need for extra power supply
3. Pillars for the descarbonisation of the port
    1. Renewable Energies
    2. Use of alternative/clean fuels
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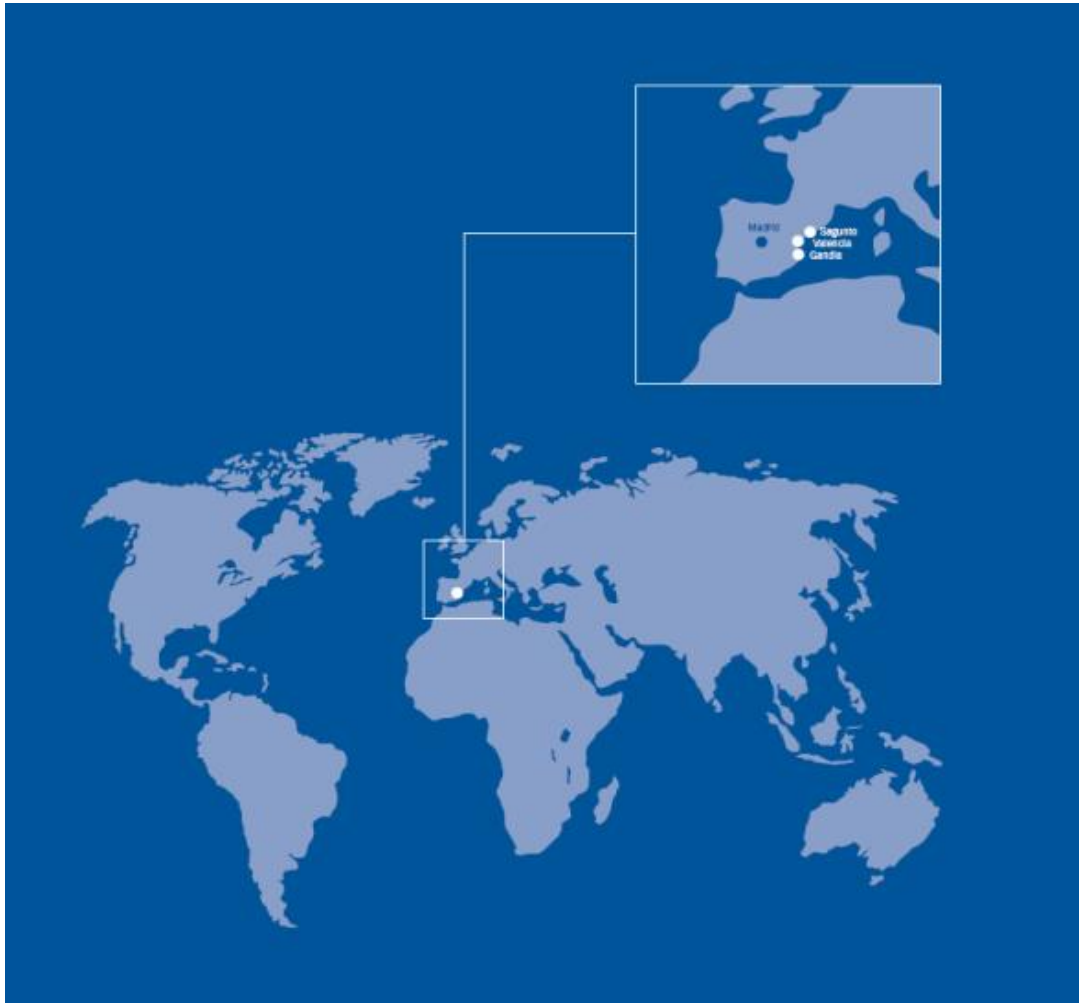
Valenciaport in figures

The PAV runs 3 commercial ports in the Valencian Region

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**.



Valenciaport in figures

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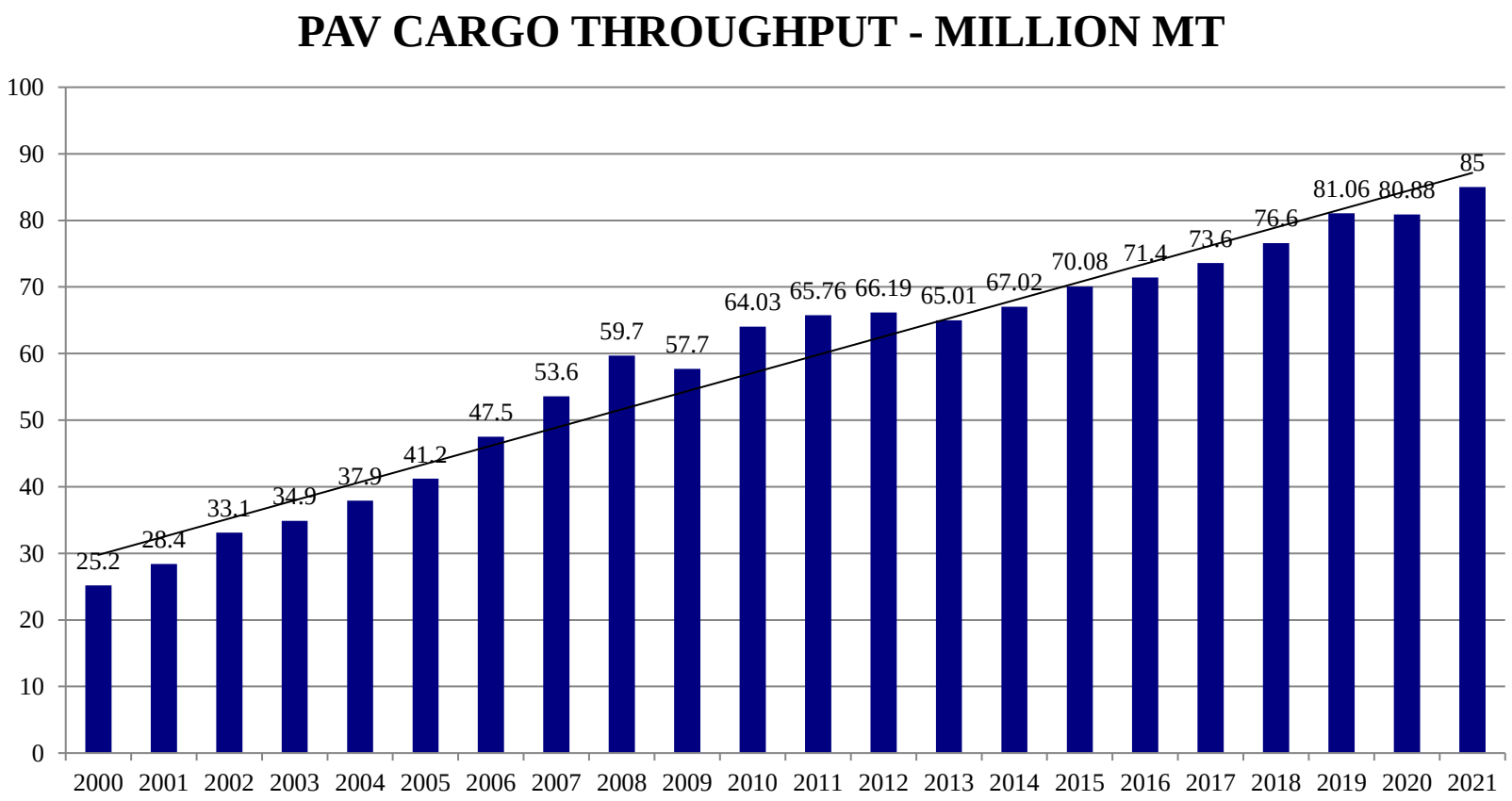
Over 85 million MT handled in 2021…despite Covid 19



Valenciaport in figures

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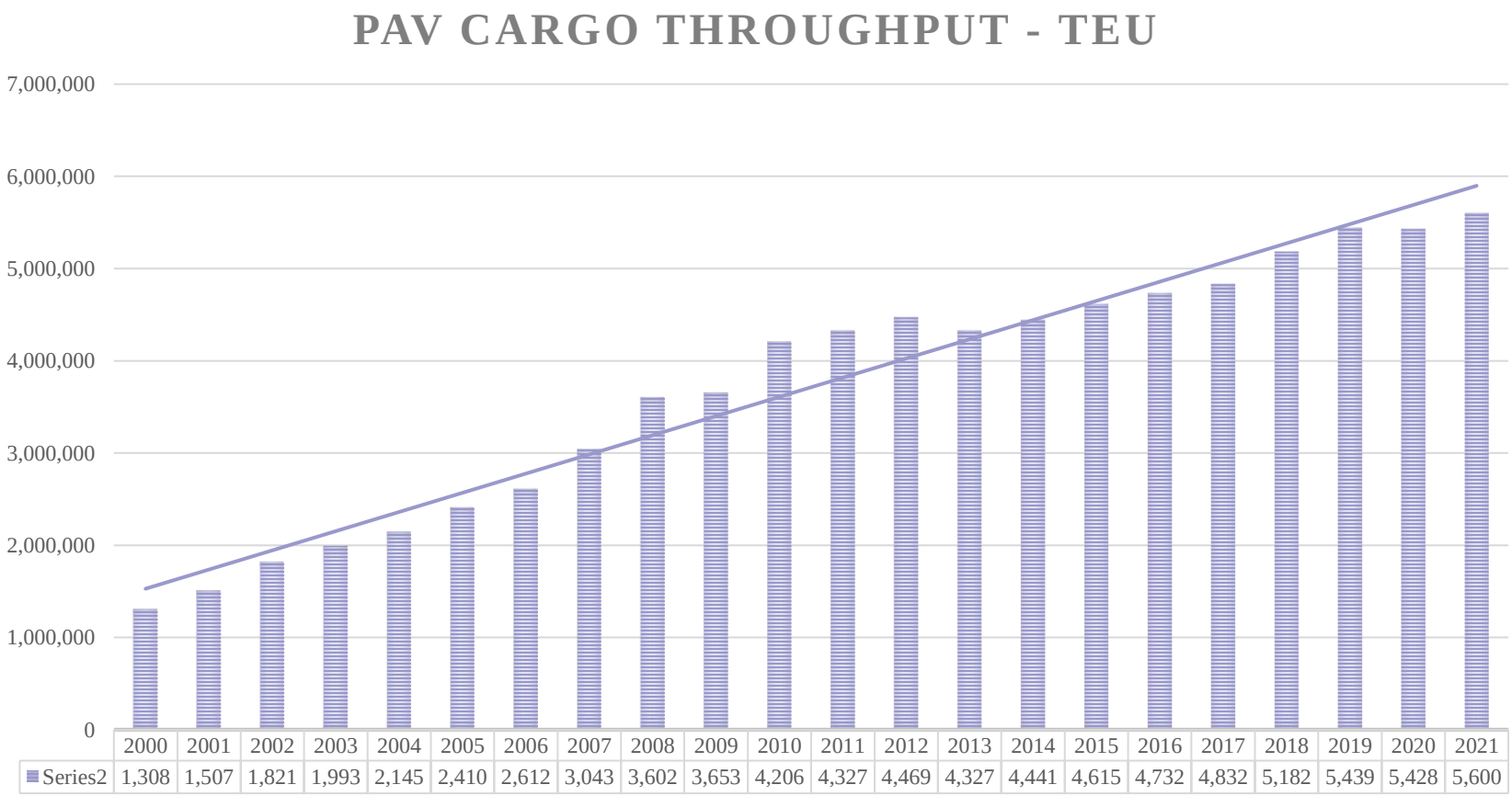
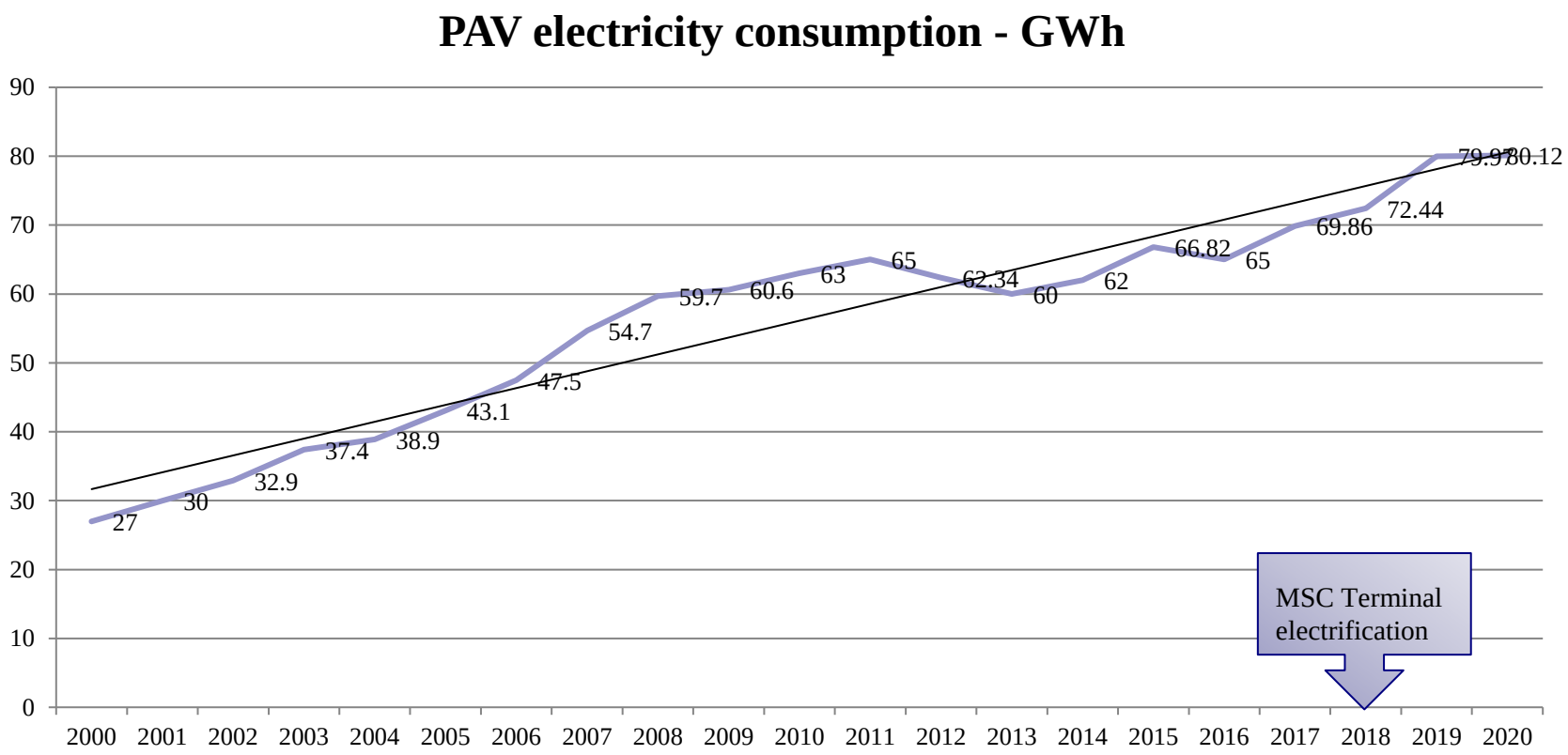
Over 5.6 MTEU in 2021…despite Covid19

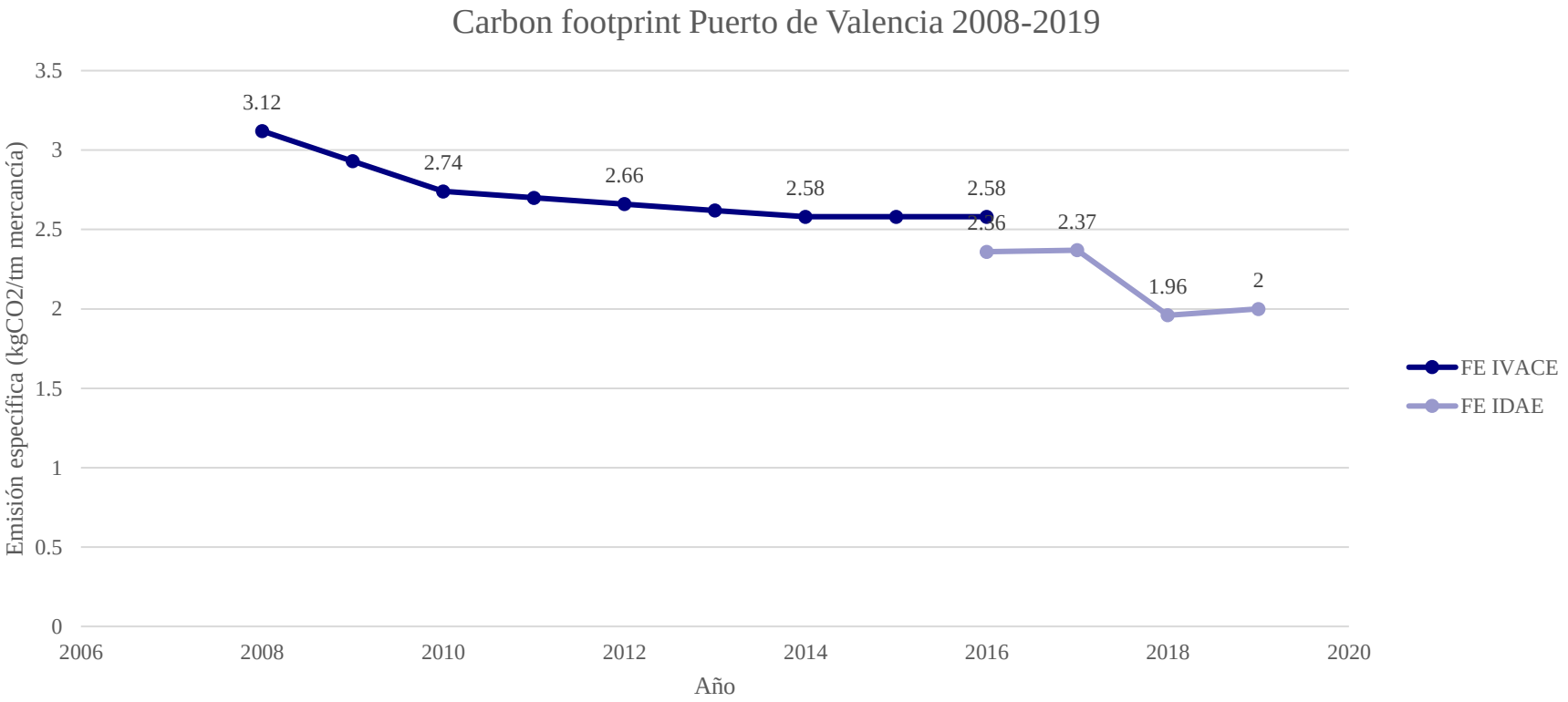


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Series2	1,308	1,507	1,821	1,993	2,145	2,410	2,612	3,043	3,602	3,653	4,206	4,327	4,469	4,327	4,441	4,615	4,732	4,832	5,182	5,439	5,428	5,600

Valenciaport in figures



Carbon footprint calculation and monitoring



Verified by Lloyds under ISO 14064 scheme

Cargo increase 2008-2016	36 %
CF indicator decrease 2008-2016	30 %

Cargo increase 2016-2019	15 %
CF indicator decrease 2008-2018	37 %

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Need for extra power supply

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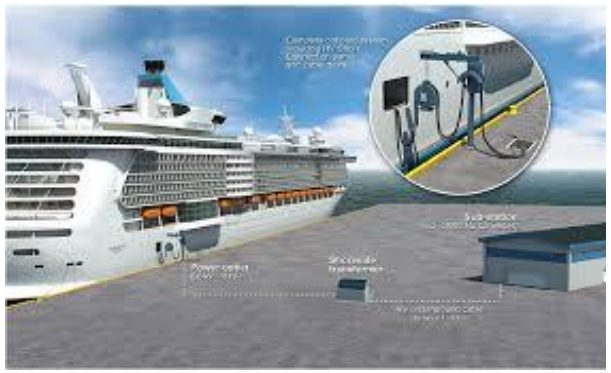
Around 86 GWh consumed in 2021, (80 GWh Valencia only … and growing)

- Electrification
- Port enlargement
- New bunkering services (OPS)



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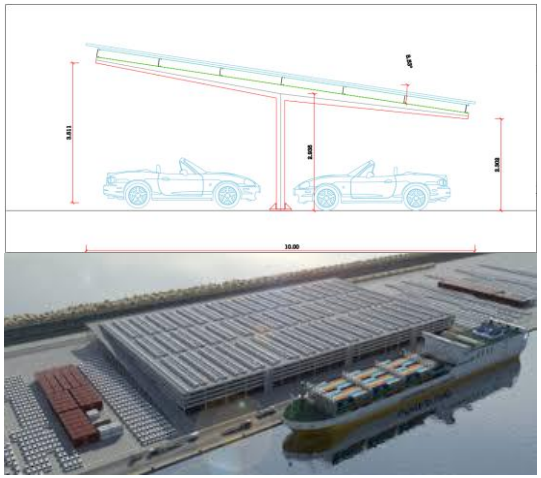
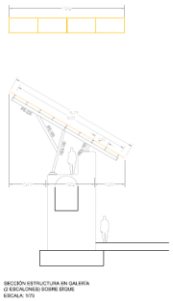
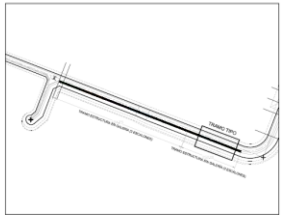
PV facilities Port of Valencia

Data:
5,500 kWp rated power
AEP: ≈ 10 GWh/year

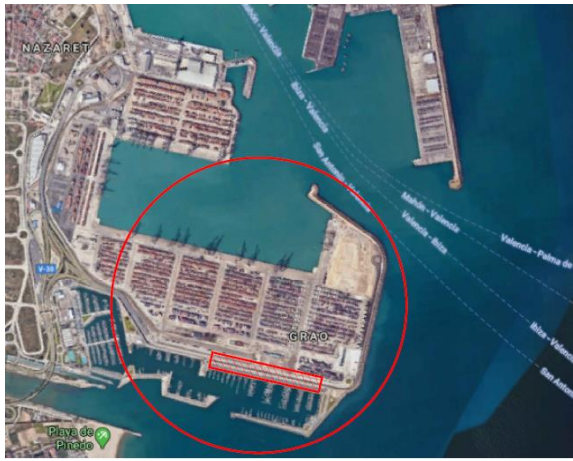


Data:
1,400 kWp rated power
AEP: ≈ 2.5 GWh/year





Totals:
6,900 kWp rated power
AEP: ≈ 12.5 GWh/year



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PV facilities Port of Valencia

Data:
9 kWp rated power
AEP: ≈ 16 GWh/year

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Puerto de Valencia wind farm

Minimum installed capacity of 18 MW
Number of wind turbines: 3 x 6 MW
AEP: 35 GWh/year

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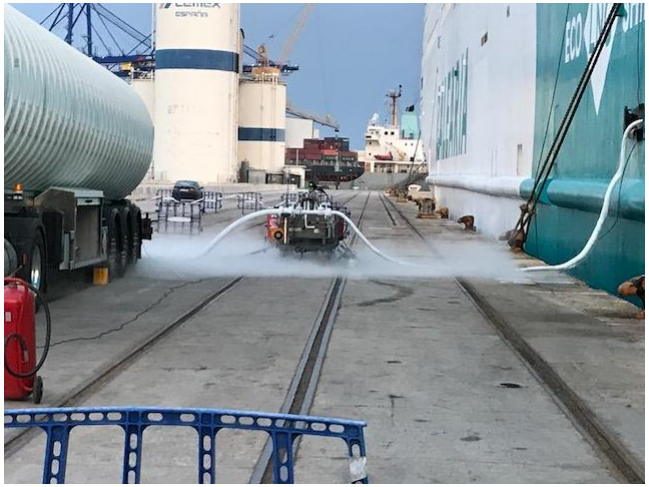
Use of alternative fuels

- LNG for Ro-Pax vessels



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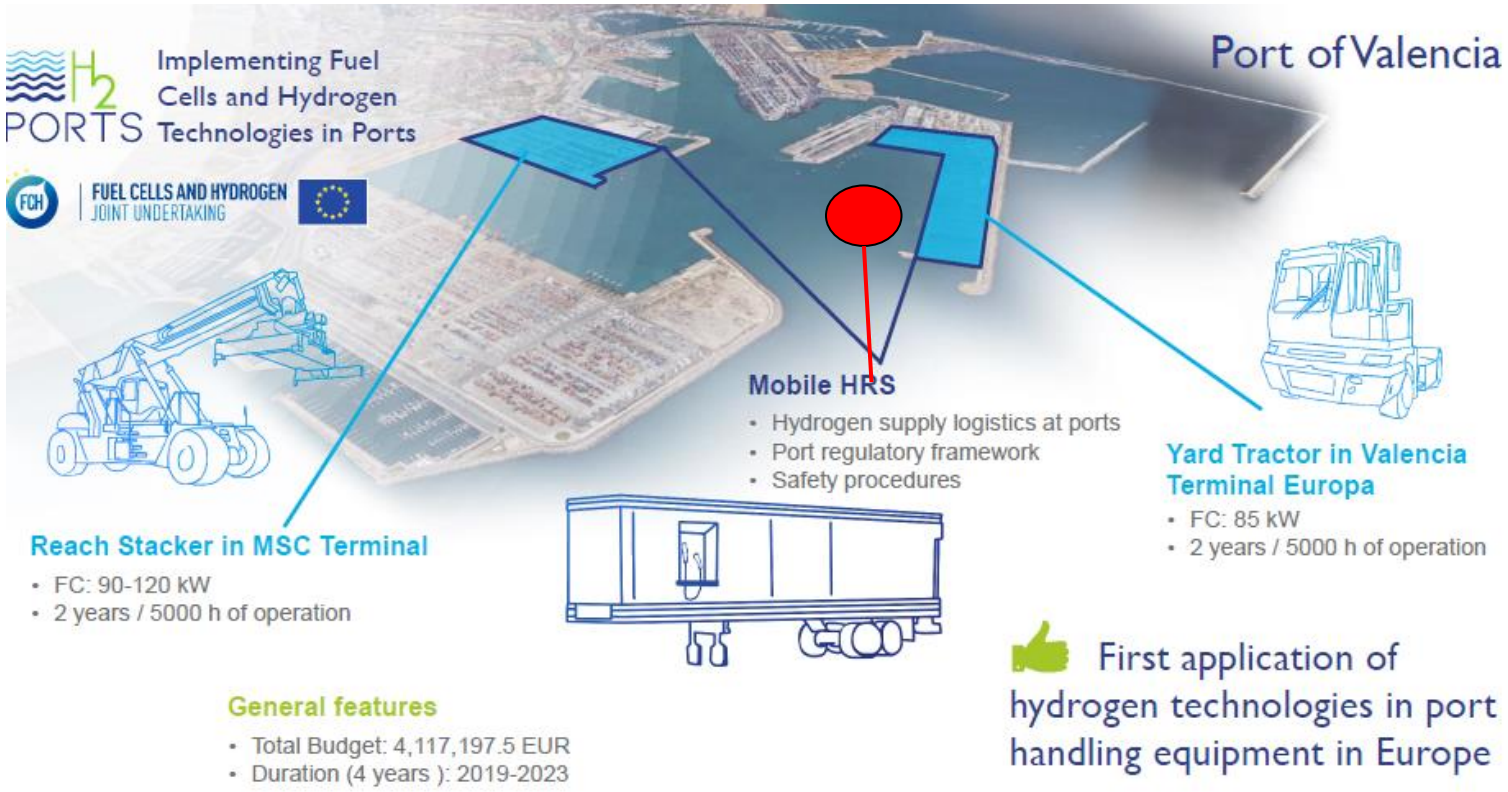
Use of alternative fuels

- H2 for port machinery (H2PORTS Project)



Use of alternative/clean fuels

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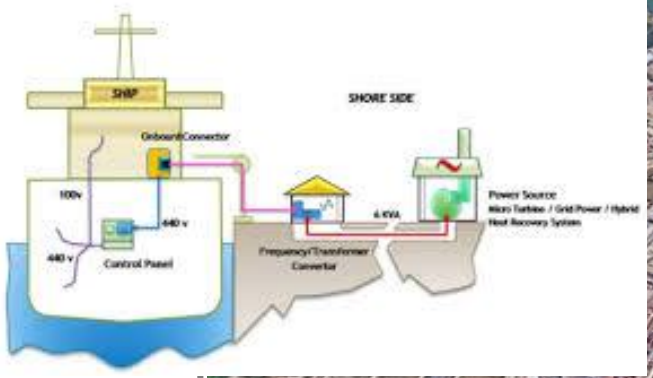
OPS facilities



Targets for 2026: 54 MVA installed in three berths

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Energy efficiency

- Substitution of port machinery and car fleets by hybrid and electric
- Enhancing the use of railway
- Electrification of port terminals
- Energy efficiency measures implementation
- Smart grids tools implementation

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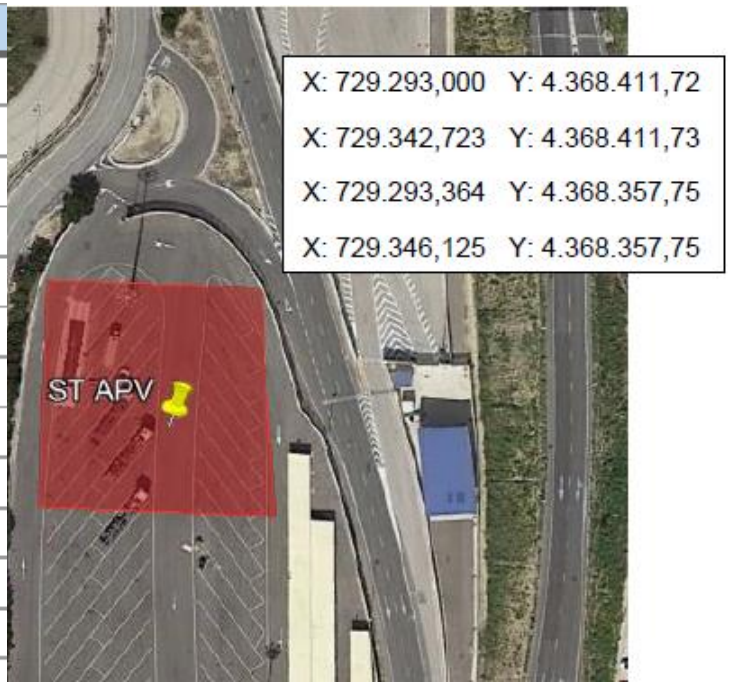
New Electrical Substation

- Electrical substation in the Port of Valencia for the future OPS

CARACTERÍSTICAS GENERALES	
Sistema	Corriente Alterna Trífasica a 50 Hz
Tensión nominal (kV)	132
Categoría de la línea	Primera
Longitud total (m)	964
Nº de circuitos	2 (Doble circuito enterrado)
Origen	ST La Punta
Final	ST APV
Tipología de la línea	Subterránea
Potencia máxima admisibles (MVA x circuito)	755 A en 132 kV (171.41 MVA)
Potencia requerida (MVA x circuito)	30
Tipo de cable	HEPRZ-AI-1200 mm² H172 132 kV
Tipo de canalización	Zanja entubada hormigonada
Categoría de la red	A



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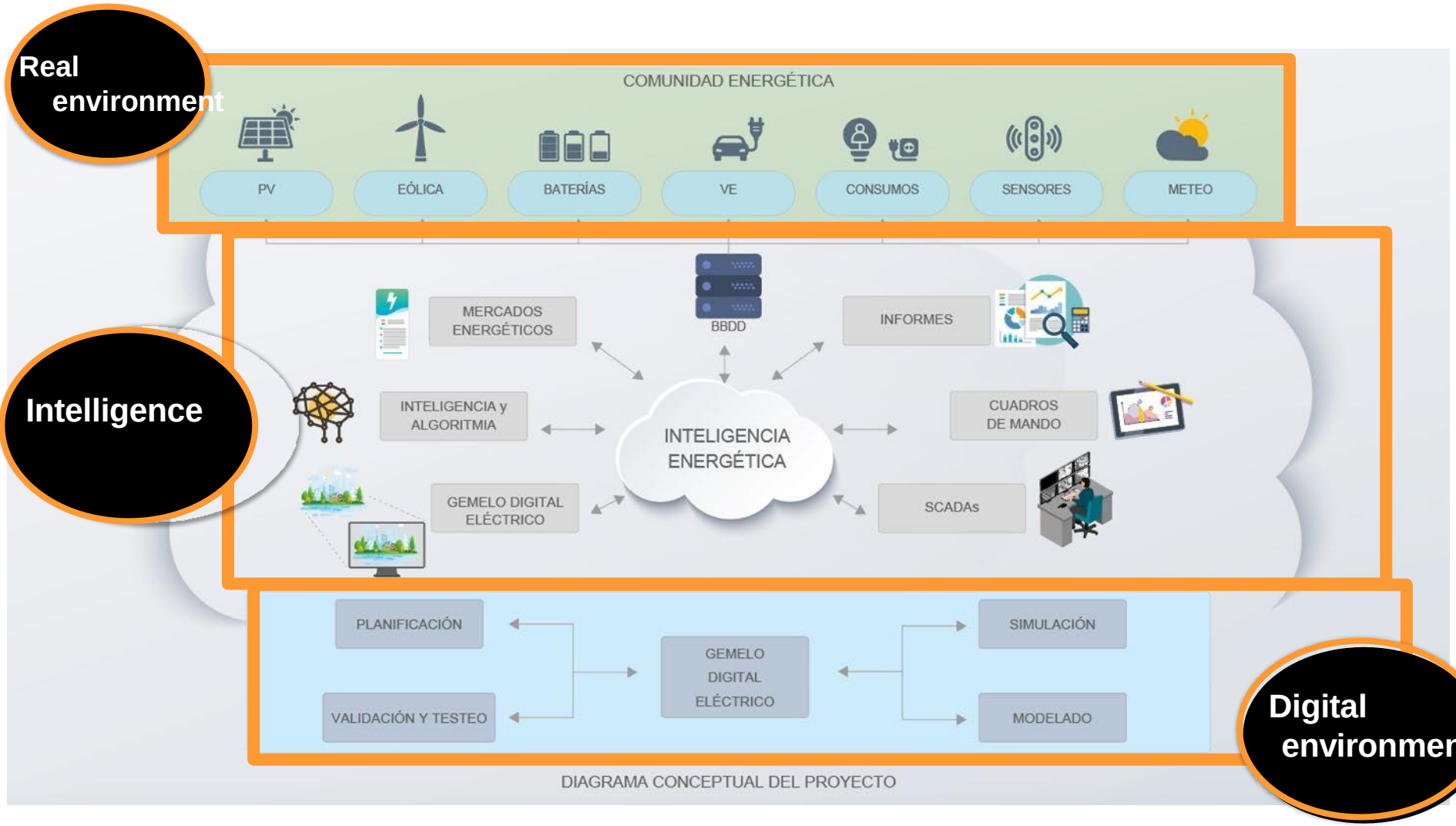
Digitalisation

Digitised energy management, self-consumption, electric mobility and storage



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Other Projects

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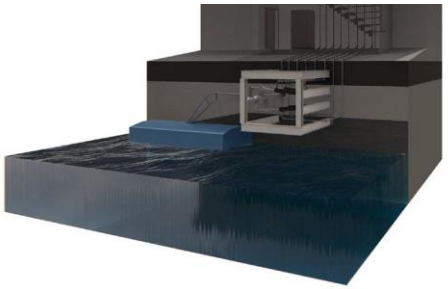
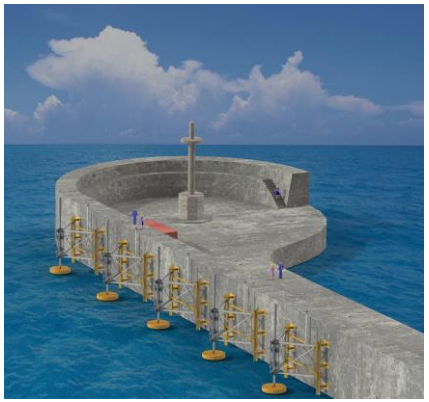


Wave energy:
Requirements for port deployment:

- Harmless to infrastructure
- Easy to fold in case of extreme weather events
- Fully accessible
- Low O+M costs
- Scalable



Presently developing an Innovative project of 270 kW at the port of Valencia.

Other Projects

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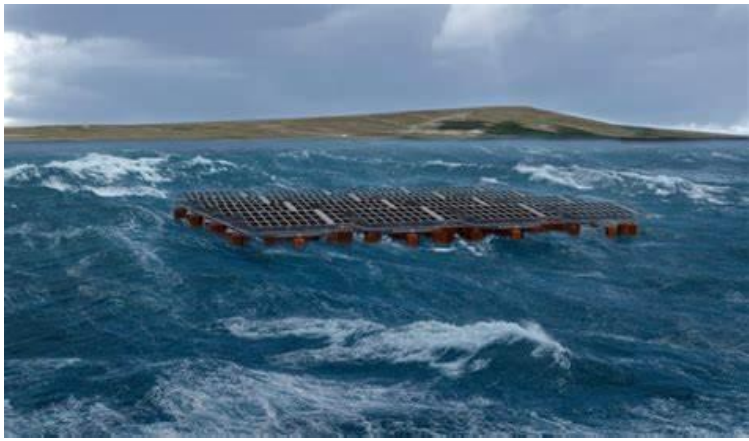
Floating solar deployment



Requirements for port deployment:

- Harmless to infrastructure
- Easy to fold in case of extreme weather events
- Fully accessible
- Low O+M costs
- Scalable

Presently developing an Innovative project of 1 MW at the port of Valencia.

Other Projects

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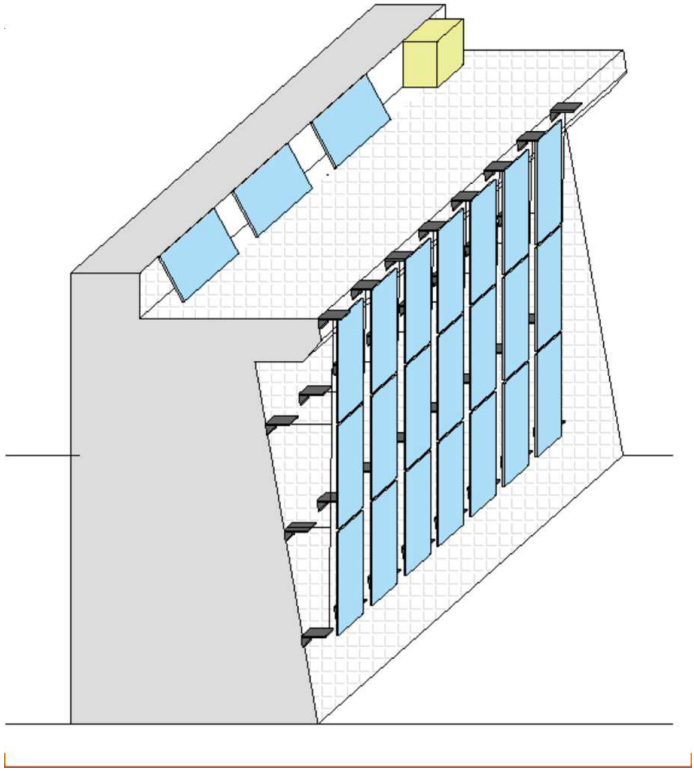
Photovoltaic

Presently developing an Innovative project at the port of Valencia.



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Thank you very much for your attention!!!!

Raúl Cascajo

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