

**Día del
Medio ambiente
5 de junio 2026**

**Autosuficiencia
energética
en puertos**



PV-bos as a Crucial Element for the Decarbonization of the Port of Valencia

BLUENEWABLES: CECILIO BARAHONA – CCO



Who we are



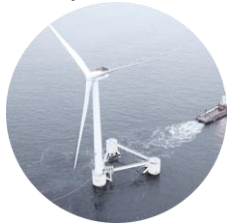
24 - 26

Offshore
Engineers



> 200 yr.

Cumulative
Experience



5

Technologies/patents under development

**Direct Funding*

> 8.0 M€ R&D projects*
(2019-2022)

> 25.0 M€ R&D projects
(2022-2025)

≈ 7.0 M€ raised by PV-
bos technology



CT-bos



WIND-bos



S-bos



G-bos



PV-bos

bos
(BlueNewables
Offshore
Solutions)

Where are we?

Coming soon: Asia



- **BlueNewables** is an engineering consultancy at the cutting edge of the innovation within the blue economy
- We support the marine renewables energy sector with technical know-how, advice and holistic approach
- **Dual Business:** technology developer and services provider
- **Founded at Tenerife (Spain) in 2019**



PV-bos

*Market applications:
Green and sustainable
ports*



PV-bos: Market Applications

2022-2025
TRL 6

2026
TRL 7

2027
TRL 7

2028
TRL 8

2029
TRL 9

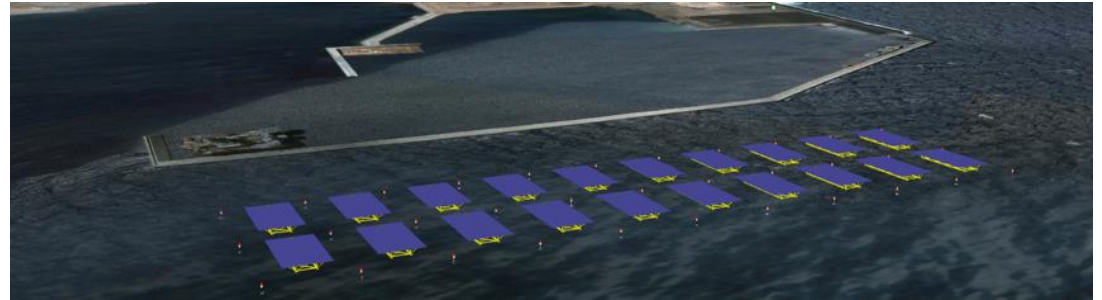
2030
COMMERCIAL

2031
TRL 9

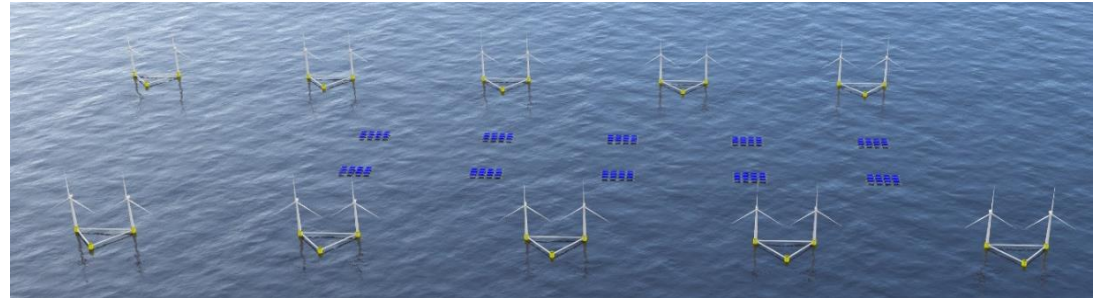
2032-2035



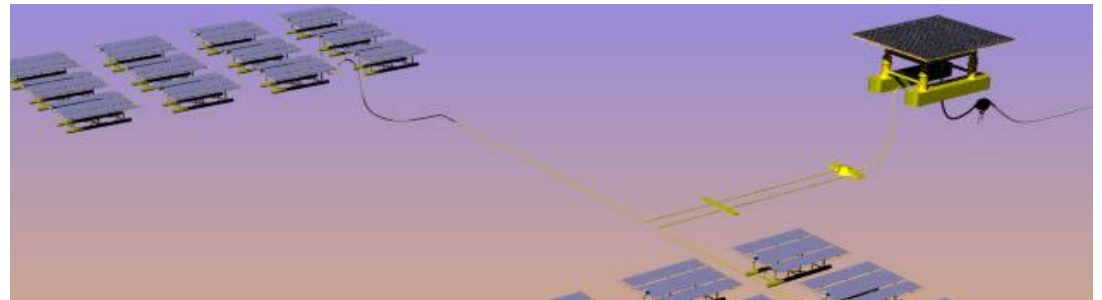
Green and sustainable ports



Hybrid offshore wind farms



Stand alone multi-MW solar farm +
H2 production



Green and Sustainable Ports



Regulatory Spanish State Ports

Under **RD 150/2023**, approving Spain's Maritime Spatial Plans (POEM):

- **Zones I and II** of ports of general interest of the State are **excluded from the scope of the POEM**
- For **renewable marine installations in Zones I and II** (see **RD 962/2024**) – **Installation ≤ 20 MW**

Spanish State Ports are officially moving towards decarbonisation, with Puertos del Estado:

- Targeting **50%** of the Port Authority's energy consumption through **self-consumption by 2030**
- And **50%** of the energy consumed in the port coming from **renewable self-generation** or carbon-neutral alternative fuels

Regulatory EU TEN-T Ports

In parallel, **EU regulation** is driving the deployment of **shore-side electricity** infrastructure in TEN-T ports (Trans-European Transport Network)

- **OPS (Onshore Power Supply) / Shore-side electricity supply** - under Regulation (EU) 2023/1804: **requirements for shore-side electricity - 31 December 2029**
- **Valencia (156 GWh/yr) / Barcelona (237 GWh/yr)**



Green and Sustainable Ports

Challenges for green energy generation in Ports

- Ports are under **increasing pressure to decarbonize** and integrate cleaner energy sources
- Available **onshore space** inside ports **is limited** and highly valuable for logistics operations
- Many Spanish ports are located **adjacent to major urban areas: visual footprint** of large-scale wind deployment can be more challenging + **no onshore expansion**
- In a number of ports, **wind is not a practical or available option**, making solar one of the most viable renewable pathways
- **Low availability** to new power coming from the grid

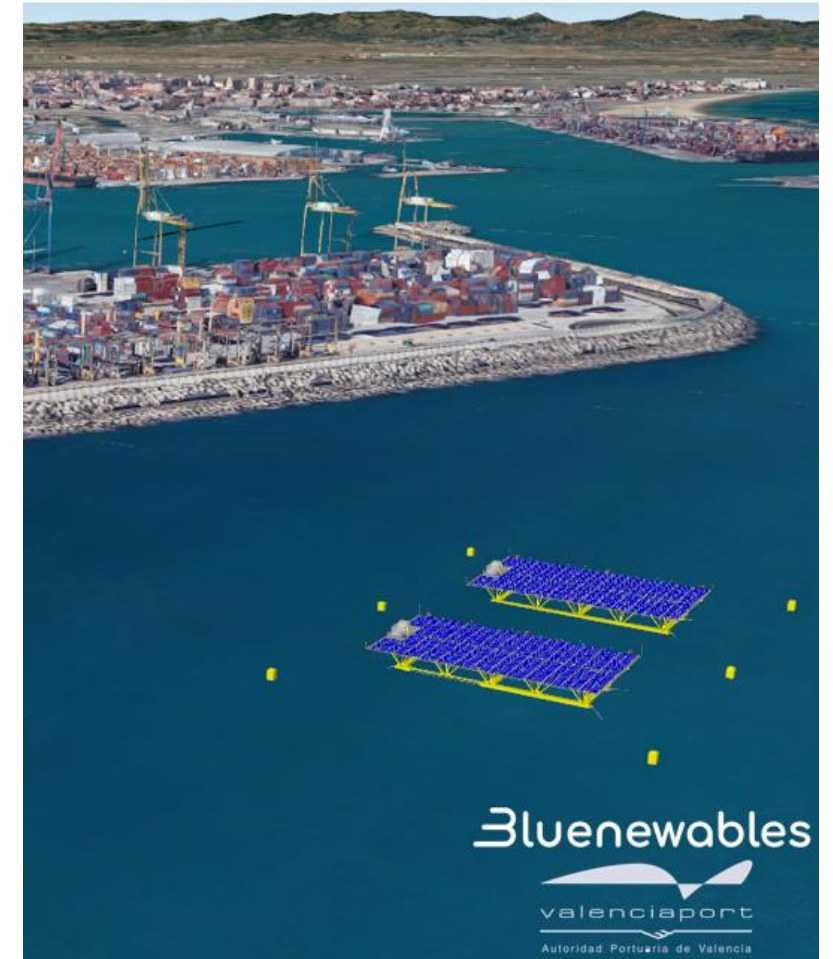


PV-bos: a practical pathway to port decarbonisation through self-generation



Case Study: Valencia

Area	Comment
Climate target	Carbon neutrality and energy self-sufficiency by 2035
Net Zero investment	€900M total investment: €605M public/APV + €295M private
Current solar generation	PV already covers around 18% of Valencia port's electricity demand
Renewable target	Solar PV + three wind turbines could cover up to 51% of demand
OPS	Shore power planned for ferries, cruise ships and container vessels
Grid infrastructure	Two new electrical substations planned between 2026–2028
Energy management	Smart energy management system with digital twins planned for 2027
North Terminal	New highly electrified terminal; quay works started in 2024 , completion expected in H1 2029



Case Study: Valencia DEMO

- Today, **the technology is ready for deployment**, with a solution that is already technically and operationally defined
- **We expect this project to mark a step change:** PV-bos can become a practical and scalable pathway for self-generation in ports
- **Demonstration project** with strong replication potential:
 - **AP Valencia** provides the cable, the grid connection infrastructure and the signalling
 - **BlueNewables** provides the PV-bos platforms and the integration of the solution



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Fondo de Reestructuración del Sector de Construcción Naval
para ayudas a la investigación, desarrollo e innovación



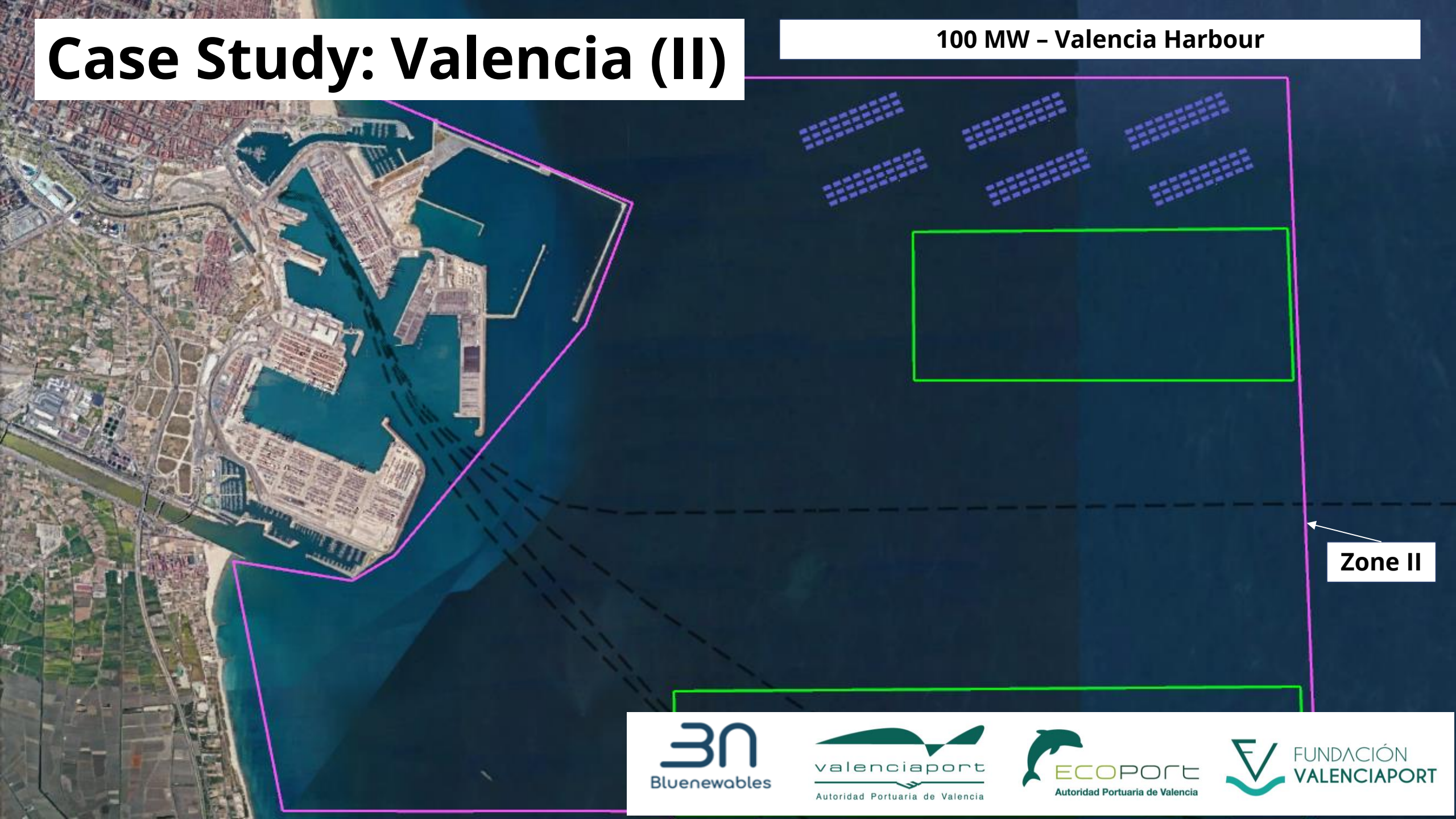
Case Study: Valencia

20 MW - Valencia Harbour



Case Study: Valencia (II)

100 MW – Valencia Harbour



Zone II

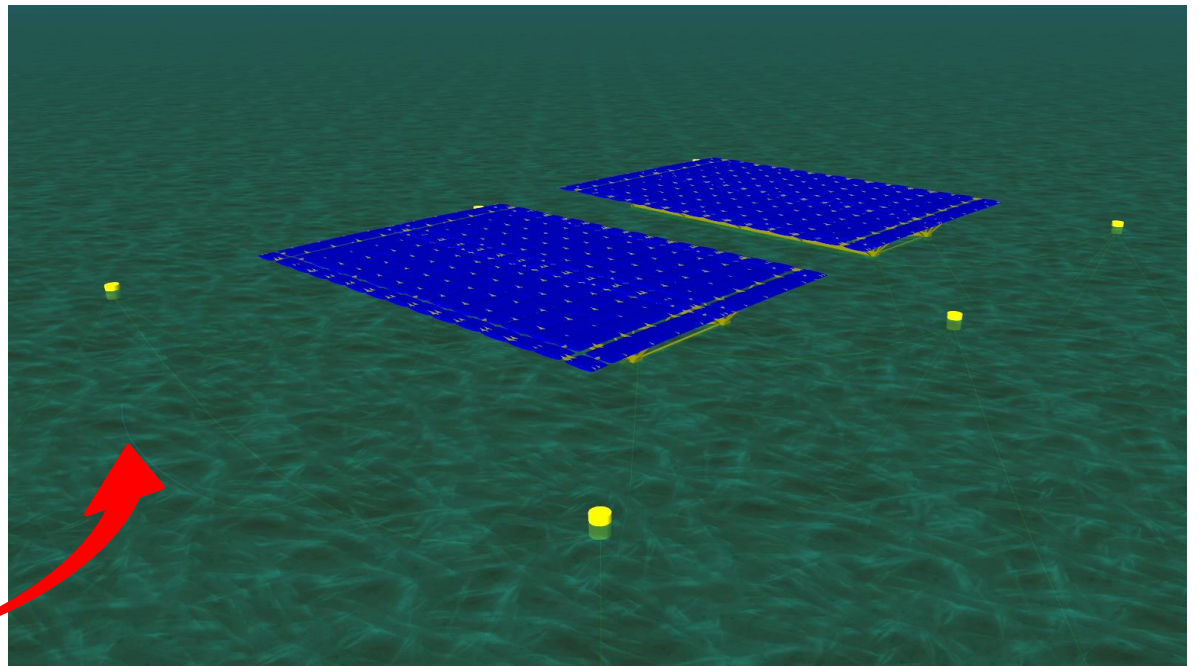
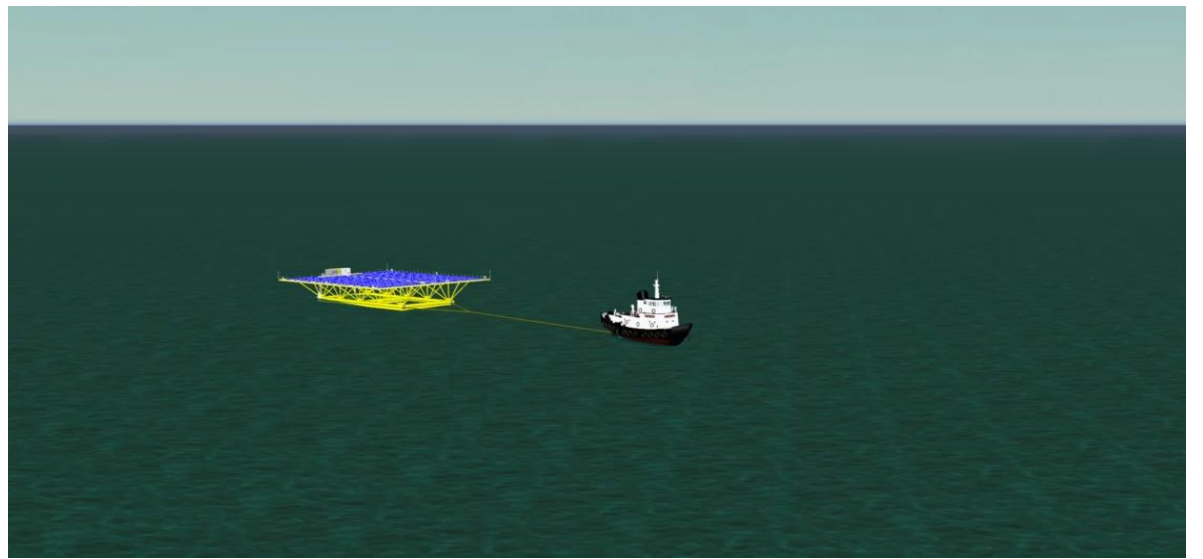
PV-bos RenMarinas Valencia Port 1 MW Demonstrator

*Understanding the
Prototype:
the first step for the
offshore decarbonization
of Ports*



PV-bos Valencia Demo

- **2 x 0.5 MW PV-bos**
 - Construction Vigo → End Aug 2026
 - Mooring Installation → Jun 2026
 - Towing → Jun 2026 (1) + Aug 2026 (2)
 - Installation → Jun 2026 (1) + Aug 2026 (2)
 - Commissioning → Sep 2026



PV-bos Valencia Demo: TRL7 - TRL8

85% together with Spanish companies



Trinasolar **MOOREAST**



RenMarinas Valencia Port



- Permitting completed
- O&M: Aug 2026 – Aug 2028
- Test bench for different offshore solar applications

PV-bos: proving that port self-generation can be practical, scalable and real

PV-bos as a Crucial Element for the Decarbonization of the Port of Valencia

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DÍA MUNDIAL DEL
MEDIOAMBIENTE
APV

