



The International Maritime Transport and Logistics Conference

“MARLOG 12”

**Sustainable & Innovative
Technologies**

Towards a Resilient Future

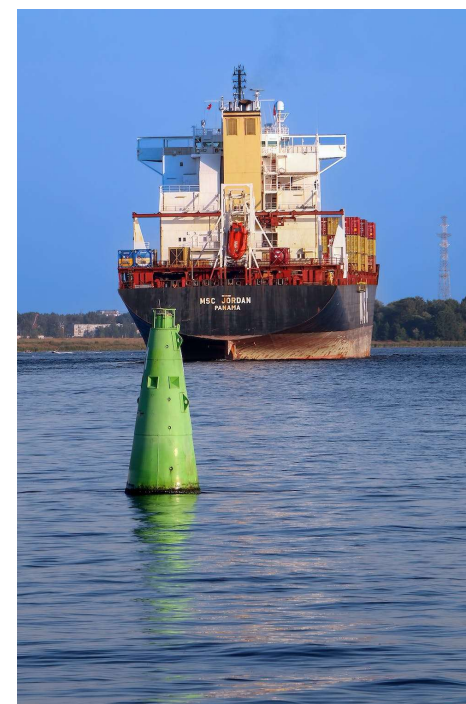
12 - 14 March, 2023 Alexandria - EGYPT





Decarbonization of maritime transport in the Mediterranean in the era of disruptions. A vision from the ports

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Medports General Secretary





Introduction to Medports

Created in June 2018

Includes more than 25 ports of the Mediterranean, representing about 70% of the total traffic of Mediterranean ports

It aims at creating a platform of collaboration and knowledge exchange among ports as well as promoting the international visibility of the Mediterranean ports

3 TECHNICAL COMMITTEES



6 MAIN GOALS

ACHIEVE



A well balanced association between the northern and southern borders of med

EXAMINE



issues related to port activities and maritime sector

INFORM



its Members and seek common positions

PROMOTE



MED interests on the international scene

FACILITATE



The creation of maritime trade links in MED area

IMPROVE



The global visibility of the MEDports



Maritime transportation is undergoing profound changes: Gigantism, disruptions, energy transition and digitalization

Not delivered yet, but ready to go soon: MGX ships of 24,000 teu are piling up at the yards!

Numerous megamax container vessels of 23,500 to 24,000 teu are nearing completion at shipyard in the Far East. Here are just a few examples:



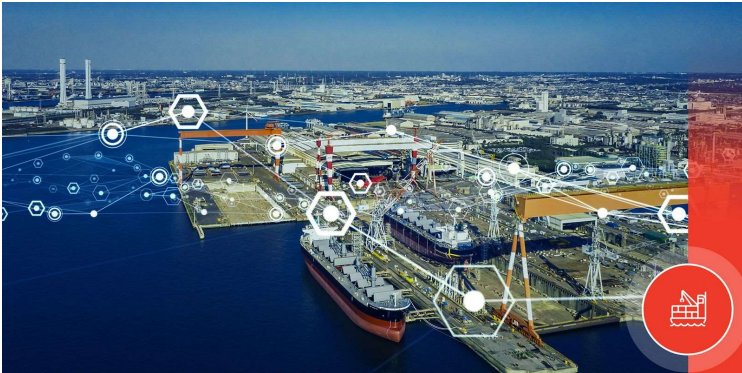
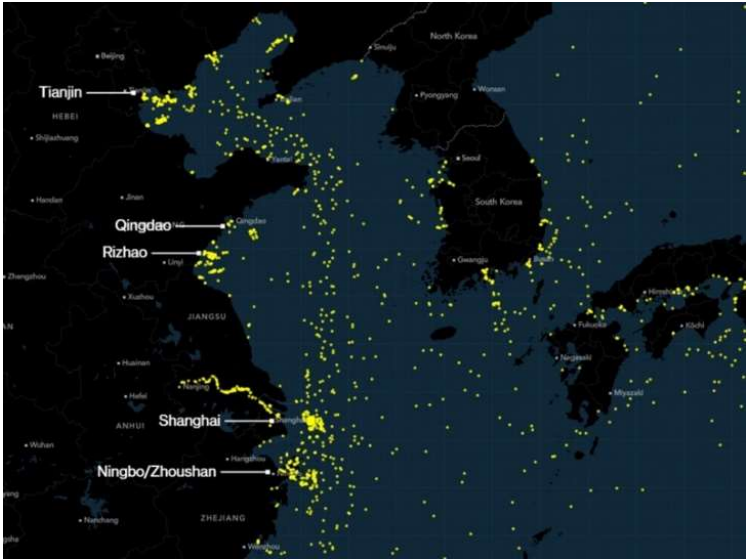
BERLIN EXPRESS, 23,666 teu (LNG)
Hapag-Lloyd



MSC TESSA, 24,116 teu
MSC

Source: Alphaliner, 2023 issue 8

Waiting vessels to Chinese ports. April 2022



Decarbonization is one of the major challenges of the industry

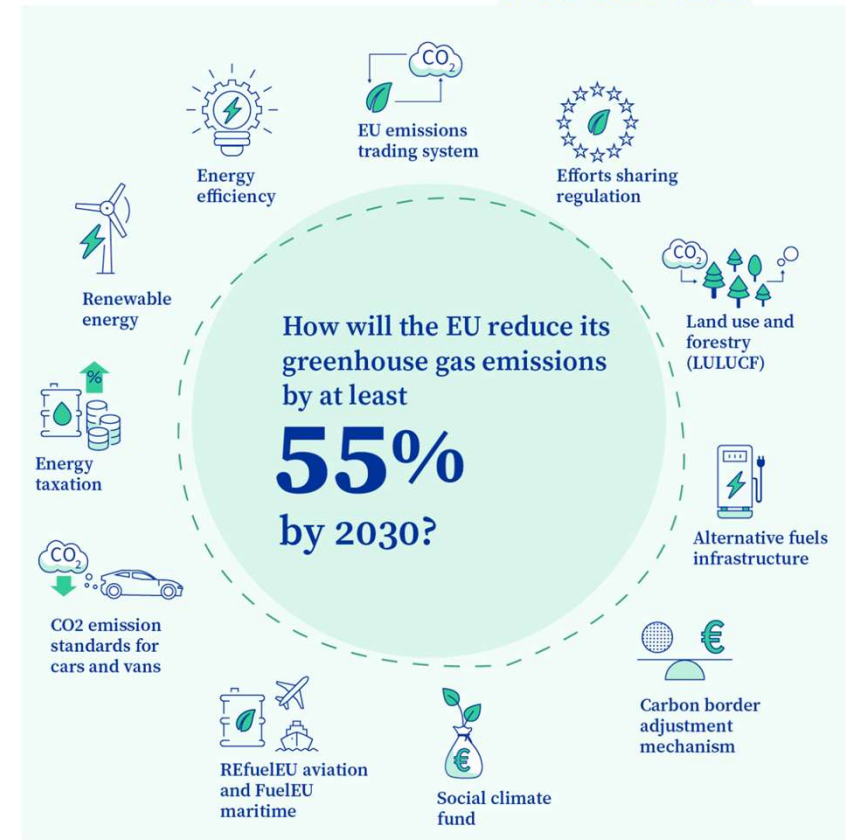
What are the regulators doing?



- GHG reduction objectives: Cut annual greenhouse gas emissions from international shipping by at least 50% by 2050, compared with their level in 2008
- Mediterranean Sea, as a whole, as an Emission Control Area for Sulphur Oxides and Particulate Matter: This measure will mandate from 1st May 2025 these marine fuels at **0.1% sulphur content**, instead of current levels of 0.5% (since the 1st of January 2020), in the Mediterranean Sea.



Fit for 55



Decarbonization is one of the major challenges of the industry

What is the industry doing? Some examples

Development of alternative fuels. Methanol as a rising star



Methanol terminals that could potentially be used for methanol bunkering (source: <https://afi.dnv.com>)

Production of renewable energy in ports



Port of the Hague has installed photovoltaic panels in its facilities (Getty images)

Circular economy



The Port of Barcelona recycles 85,000m3 of hydrocarbon every year (Source: Port of Barcelona)

Intermodality



Intermodal Terminals in Europe (Source: Intermodal-terminals.eu)

Improvement in vessels' design

Emissions Reduction Measures, IoT and Big Data, Fuel and Propulsion Systems,...



Efficiency improvements in vessel operations in port

International Taskforce



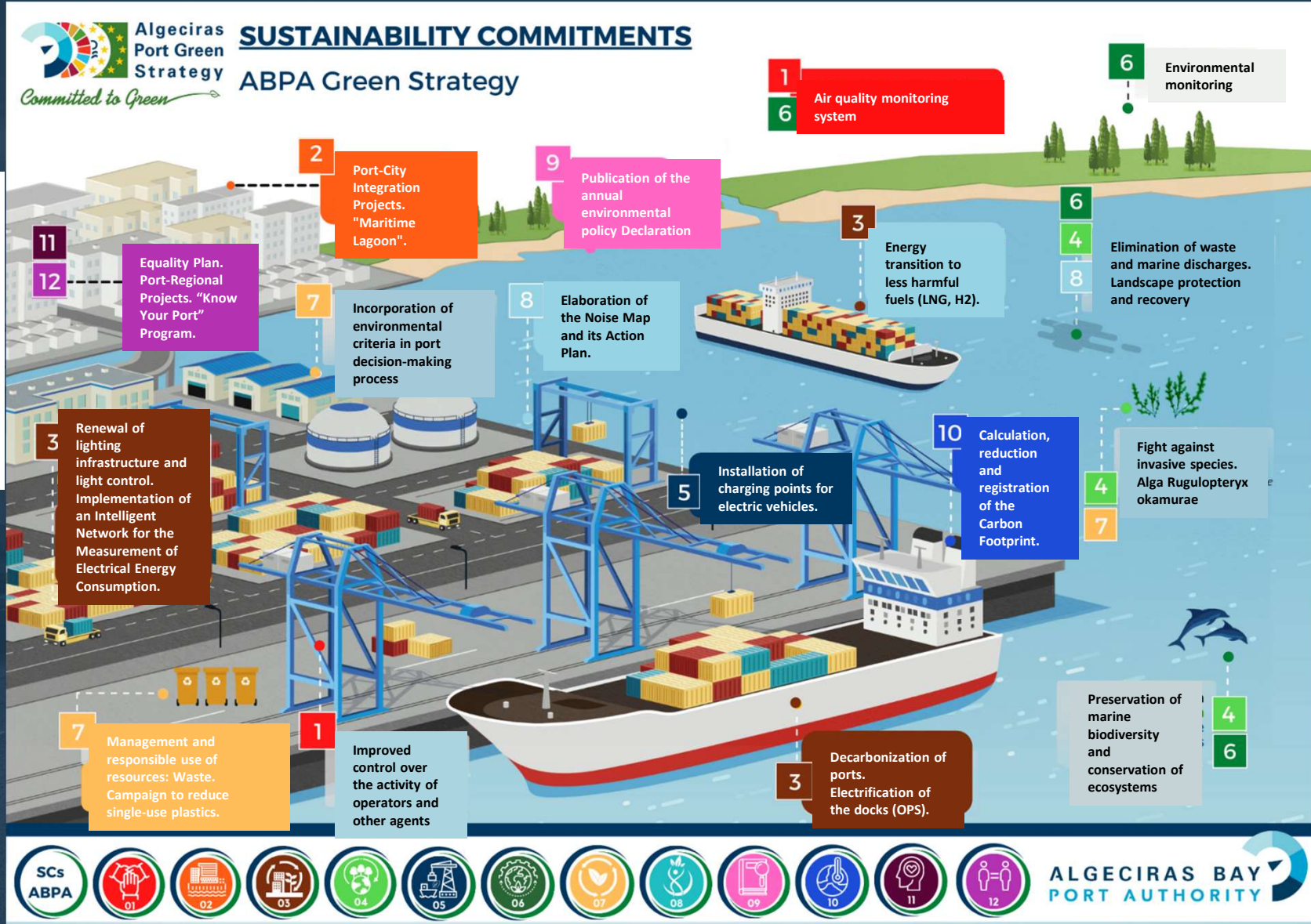
Port Call Optimization





Action Plan

Multiple projects



How are ports reacting to this new escenario?

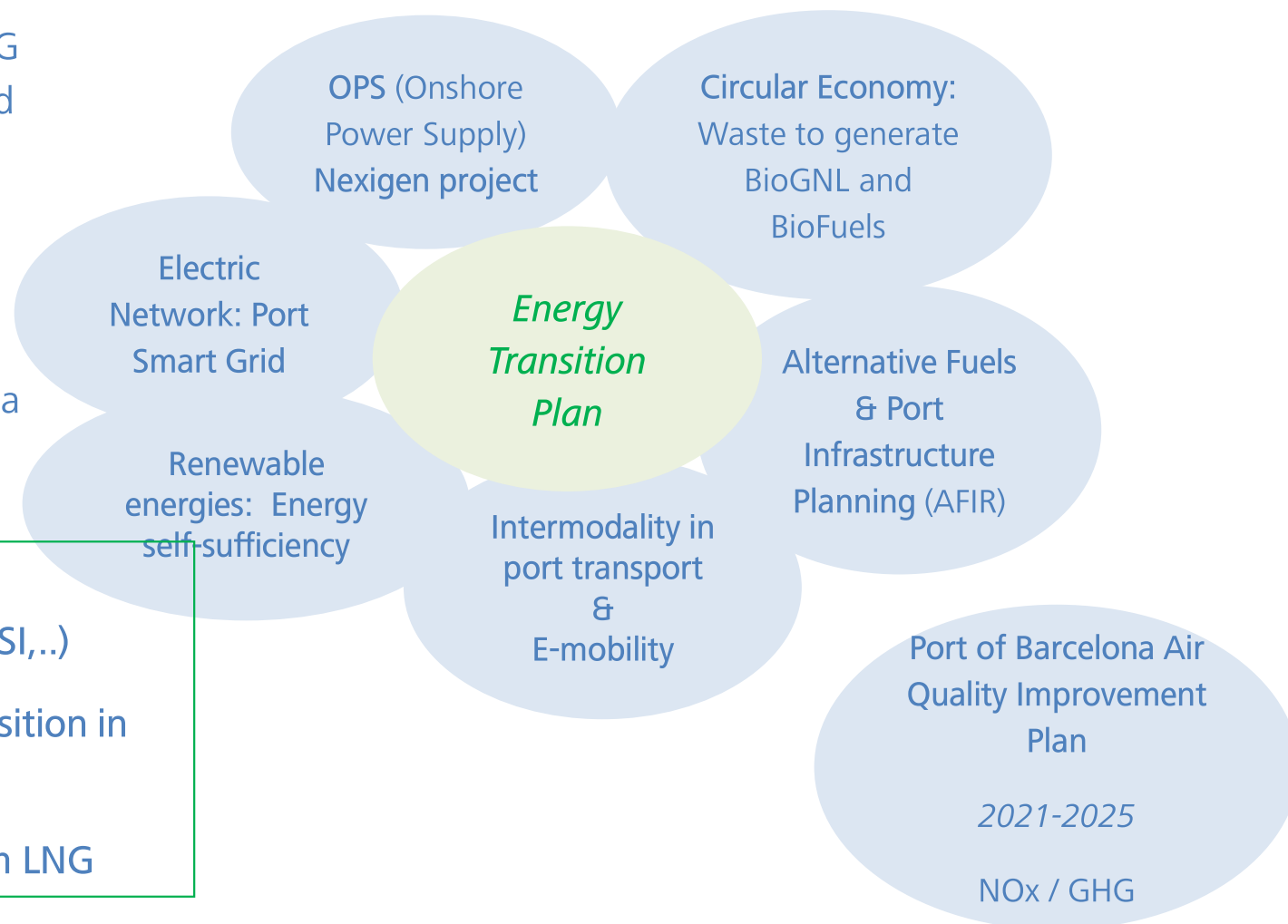
The Port of Barcelona

Objective of decarbonisation: 50% GHG emissions reduction by 2030 (compared with 2017) and become a carbon neutral Port by 2050

Air Quality Improvement: NOx and other pollutants (PM10, PM2.5,...) emissions reduction within the port area and area of influence.

Others:

- Rebates policies for clean vessels (ESI,..)
- GNL as a transition fuel, leading position in Europe
- Energy efficiency: Cold reusing from LNG





No OPS due to the lack necessary electricity power supply.
Additional power supply expected by 2023

Not expected the development of alternative fuels

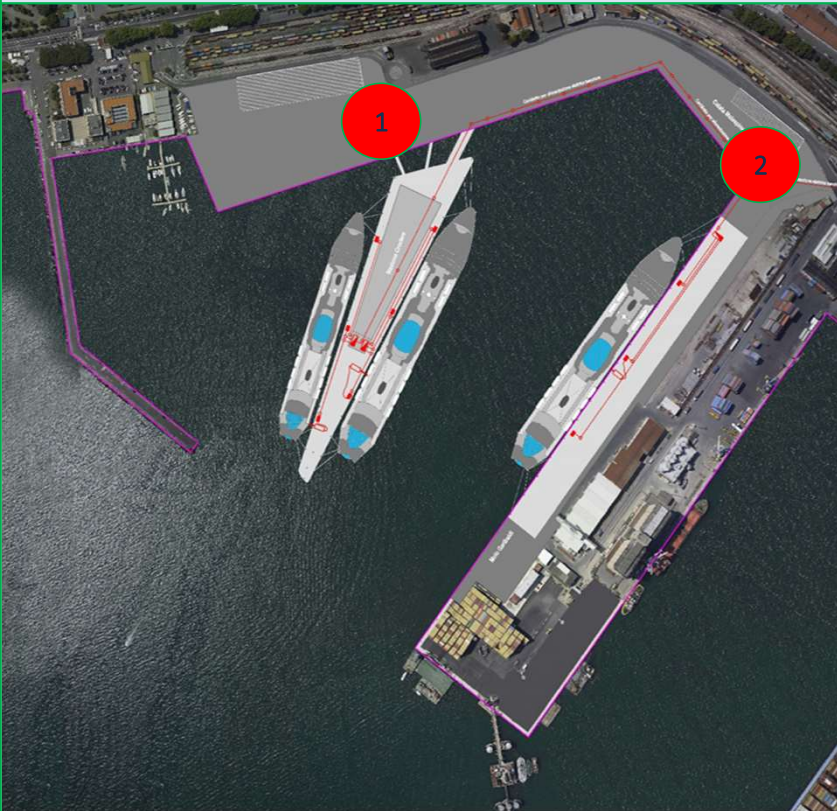
Investing in solar power facilities within the port area. Due to the lack of electricity power supply, the port can eventually only produce as much electricity as the port uses for its own scope. This limit shall be reached within 5 years.

Electrification of the port handling equipment is ongoing



ON SHORE POWER SUPPLY/COLD IRONING – CRUISE & CONTAINER ACTIVITIES

La Spezia - Electrification of the docks:
1) Construction and electrification of the new Cruise dock = 57 M€ of which 30M€ on FNC
2) New transformer cabin for electrification of the quay = 5.5M€



La Spezia - Electrification of the docks:
3. Electrification of the new foreseen docks - Merchant activities -2nd and 3rd port basin of La Spezia = 12M€



How are ports reacting to this new scenario?

The Port of Marseilles. Some examples

Investing in a modal shift to promote rail and river transport

+ 10,000
TRAINS PER YEAR
TRAVELLING THROUGH
THE PORT



Innovating with the supply of low-carbon gas and hydrogen for heavy goods vehicles and the refuelling of ships with liquefied natural gas (LNG)

1st
Liquefied Natural Gas (LNG) STATION FOR HEAVY
GOODS VEHICLES IN THE REGION

1st
HIGH PRESSURE HYDROGEN
FILLING STATION FOR
LONG-DISTANCE TRUCKS



Connecting ships to the quayside to reduce emissions of CO₂ and fine particles

**400 PORT
CALLS PER YEAR**
HAVE BENEFITED
FROM THE ELECTRICAL CONNECTION
OF SHIPS TO THE QUAYSIDE
SINCE 2017



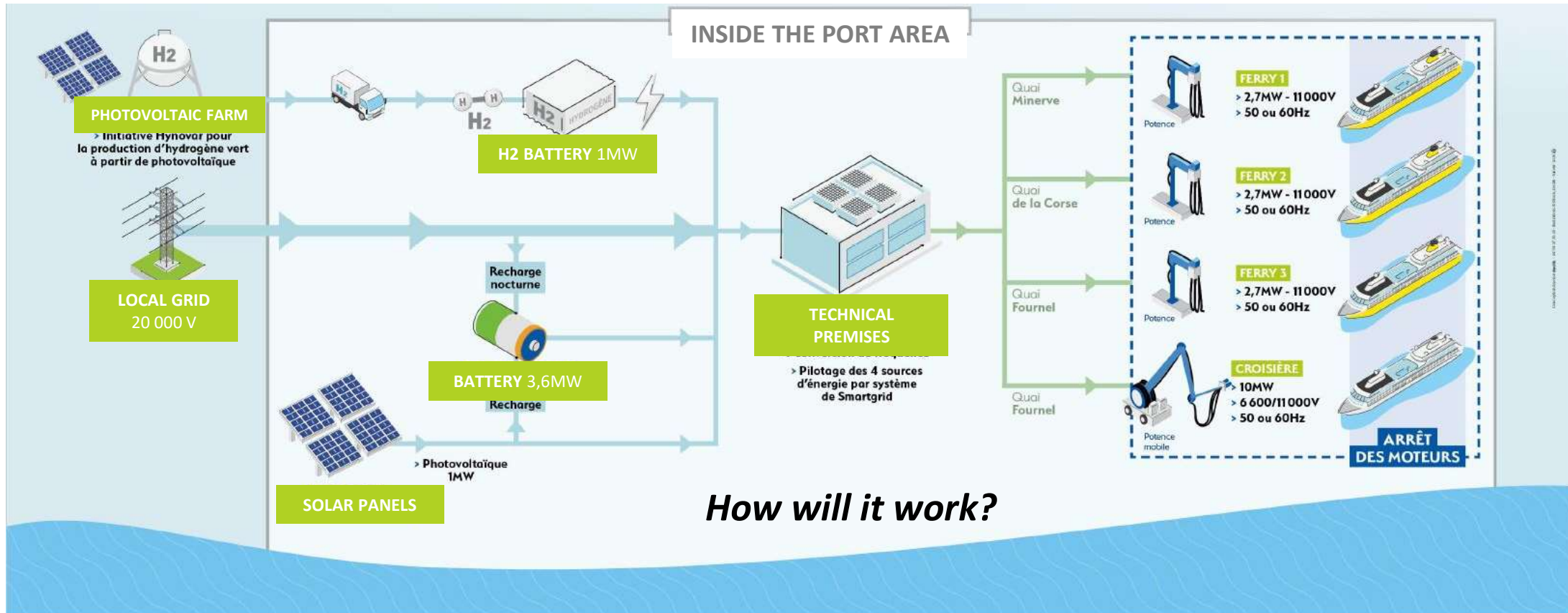
Producing green and competitive energy:
Hydrogen and photovoltaic

100%
OF THE PORT'S OWN
ELECTRICITY CONSUMPTION
COMES FROM RENEWABLE SOURCES



Onshore Power Supply (OPS) implementation

Works are currently under completion => **OPS will be operational by spring 2023**



How will it work?



An energetic mix combining local grid together with hydrogen and photovoltaic

Decarbonization Strategy Valenciaport



Pilars

Energy efficiency

Use of clean fuels (OPS)

Renewable energies

Digitalisation

Projects horizon 2025

| Energy efficiency |
|---|
| Sustitution of lighting |
| Implementation of efficiency measures in port terminals |
| 2 Substations 2 x 55MVA in Valencia |
| Just-in-time tools implementation for ships |

| Use of clean fuels |
|--|
| LNG bunkering in Valencia |
| 3 OPS quays in Valencia (46 MVA) |
| H2 testing in cargo handling machinery |
| Clean fuels strategy for trucks |
| Swift to electricity for service car fleet |

| Renewable energies |
|-------------------------------|
| 1.4 MWp PV plant in Valencia |
| 0.7 MWp PV plant in Gandia |
| 5.5. MWp PV plant in Valencia |
| 9 MWp PV plant in Valencia |
| 18 MW windfarm in Valencia |

| Digitalisation |
|--|
| Implementation of Energy Management Platform |



Thank You