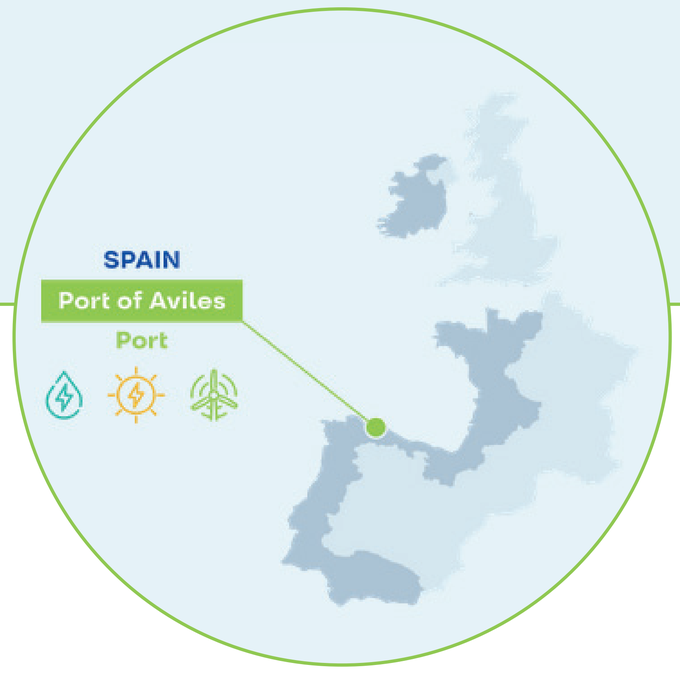
Interreg Atlantic Area
HY4RES

Co-funded by the European Union

PORT PILOT SITE

Port of Avilés, Spain



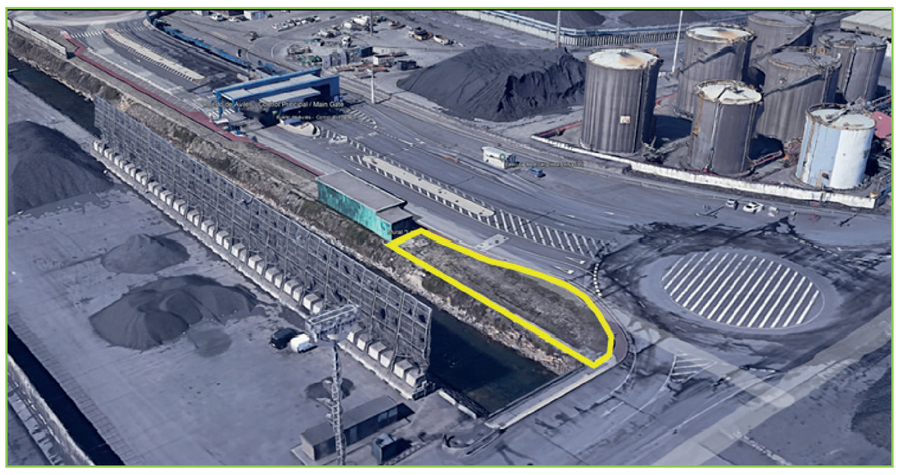
GENERAL INFORMATION

Near the river Raices, in Principality of Asturias

Around the pilot site: container shipping, loading & unloading of solid liquid bulk cargo, value-added manufacturing companies, port assets

Construction in **April 2025**
Data collection & adjustment of the hybrid renewable energy system started in **May 2025**

Simulation under different conditions: discharge to power mains, storage and hybrid system
Small energy consumptions: lightning, automation of an irrigation system to mitigate suspended dust



TYPES OF RENEWABLE ENERGY

Solar energy

Hydropower

Wind power

2 vertical axis hydrokinetic turbines
20 W
135.55 kWh/year

Pump-as-turbine simulator
200 W
140.16 kWh/year

3 vertical axis wind turbines
67.5 W
476.04 kWh/year



3 solar panels
0.81 kW
567.65 kWh/year

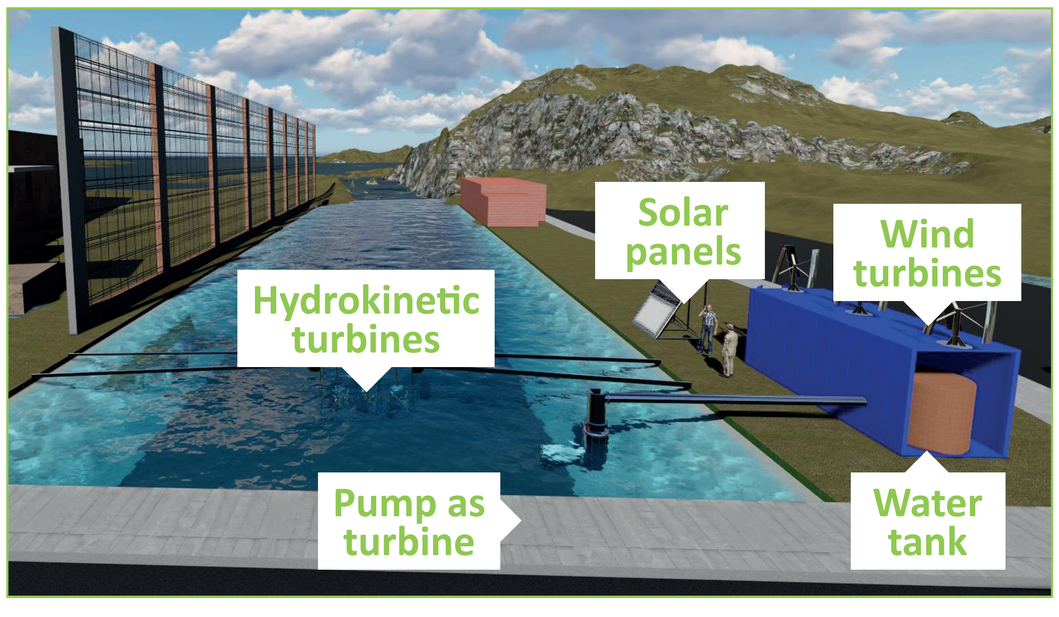
Life cycle of the pilot site: 20 years

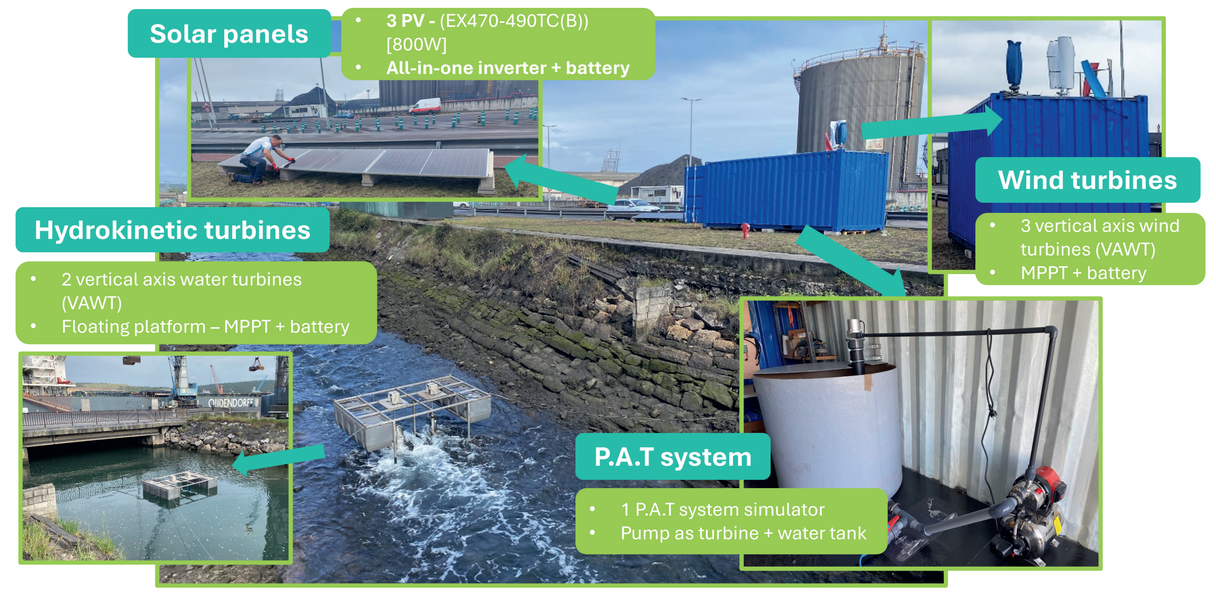
Solar: 20-30 years
Wind: 20-30 years
Hydrokinetic: 5-10 years
PAT: 15-20 years

TECHNOLOGIES/TOOLS USED

Floating platform with
2 vertical axis hydrokinetic turbines

It houses both rotor and power generation system, all connected to the sea container where the power stage control electronics are located





INVESTMENT & ROI

Cost
€25.000

Cost savings
€197.46

Energy price
€0,15/kWh

Total annual production
1,315 kWh

POTENTIAL OF ELECTRICITY PRODUCTION

Energy potential for PV and wind system

