Group
TYPSA

Engineering & Consulting Services

Offshore wind energy
ICEX JAPAN

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Offshore Project Manager

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Company Profile

55 years of **experience**

Revenue in 2021 **270 M EUR**

2,850 professionals
60% international
40% in Spain

Completely **independent**
100% employee-owned
Equity: **100 M EUR**

Spain's leading exporter of **consulting engineering services**

Multidisciplinary approach

Commitment to **quality** and **sustainability**

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Company Profile

World leaders in the most relevant sectors for offshore wind

ENR Engineering News-Record

ENR TOP 250

Worldwide ENR ranking by sector

Transport	No 31	Airports No 15	Mass transit and rail No 21	Bridges No 18	Marine and ports No 18
Water Supply....	No 24	Treatment and desalination No 21	Transmission lines and aqueducts No 15	Dams and reservoirs No 14	
Sewer/Waste	No 28	Wastewater treatment No 17			
General Building		Sports buildings No 11	Hotels No 21		
Energy	No 49	Wind energy No 10	Solar energy No 8		

For the 4th year in a row, in the top 5 of European Companies in Wind Energy

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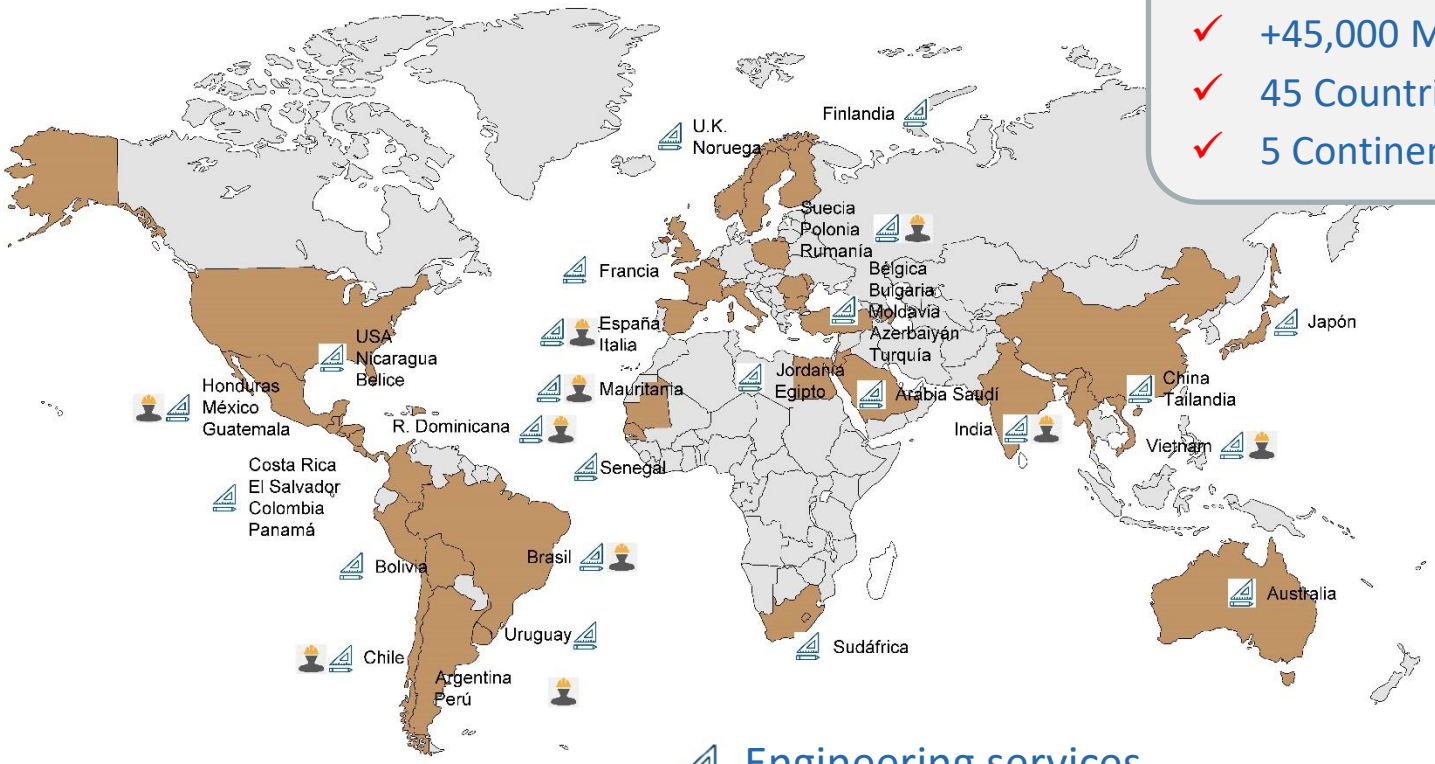
Wind Energy

Wind power engineering and consulting

Services provided for:

- ✓ +45,000 MW
- ✓ 45 Countries
- ✓ 5 Continents



Engineering services

Construction management

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Wind Energy

TYPSA can provide these services in the Offshore Market:

Early stages of the project

Benchmark of solutions

Viability & Feasibility studies

Supply Chain Analysis

-Technical and economical analysis
- Regulation and normative evaluation
- Environmental risks / definition of layouts
- Geotechnical evaluation and investigations
- Wave & wind climate analysis

Design stages

Front End Engineering Design

Detailed design

- Experience in different type of foundations
- Wave & wind loads integration
- FE & Physical modeling (UPM)

Post-design & Management

Owner's Engineering & 3rd party review

On –site supervision

- Design revision / 3rd party review
- On site supervision
-Development of Structural Health Monitoring Systems

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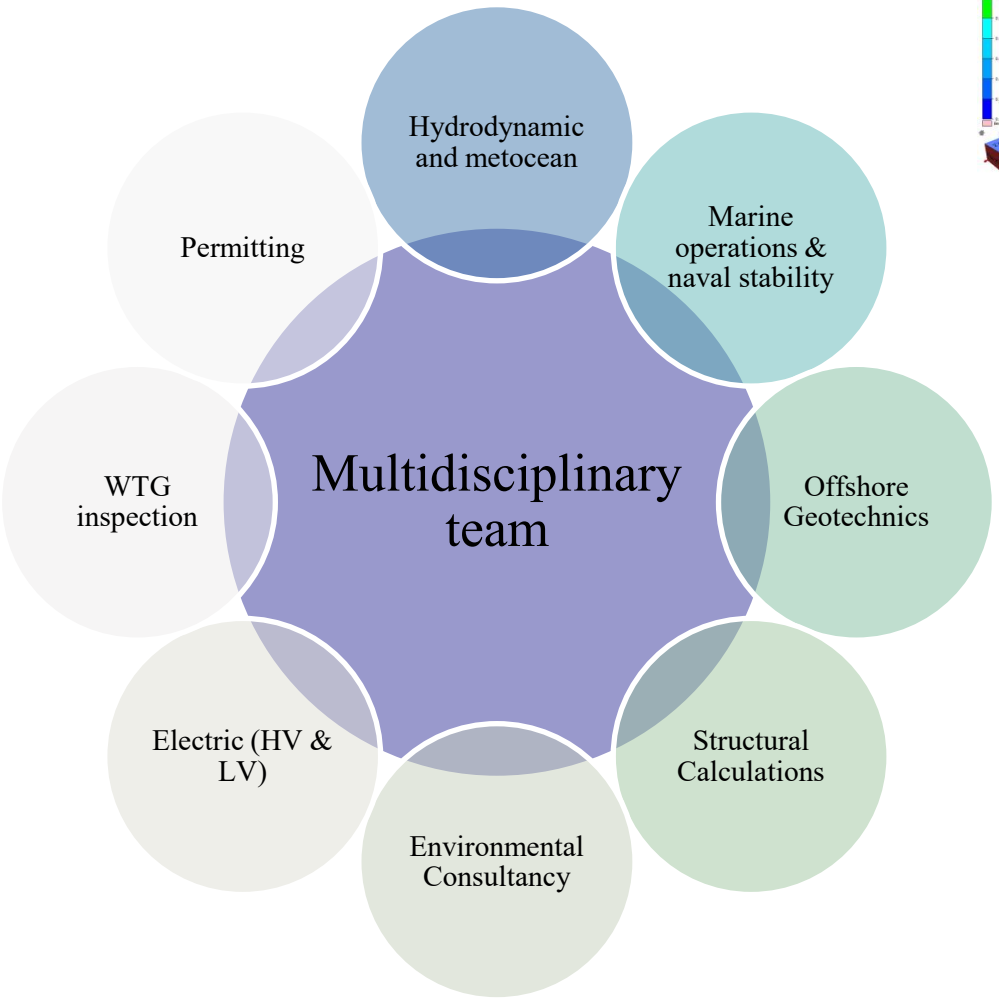
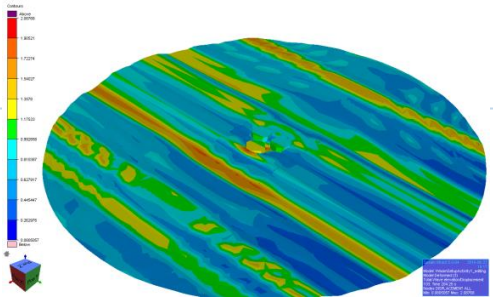
Wind Energy

Capabilities & Skills





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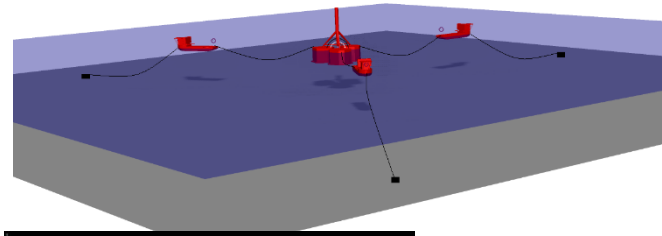

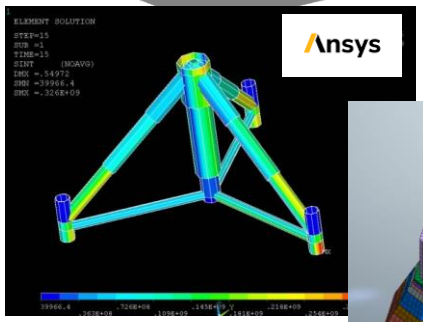

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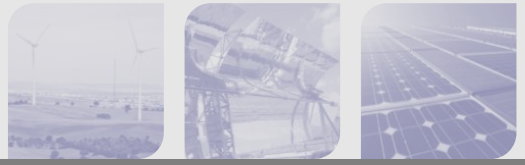

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Key references

Several Confidential Clients

Development of Offshore Wind Projects in Spain

All Spanish Coast

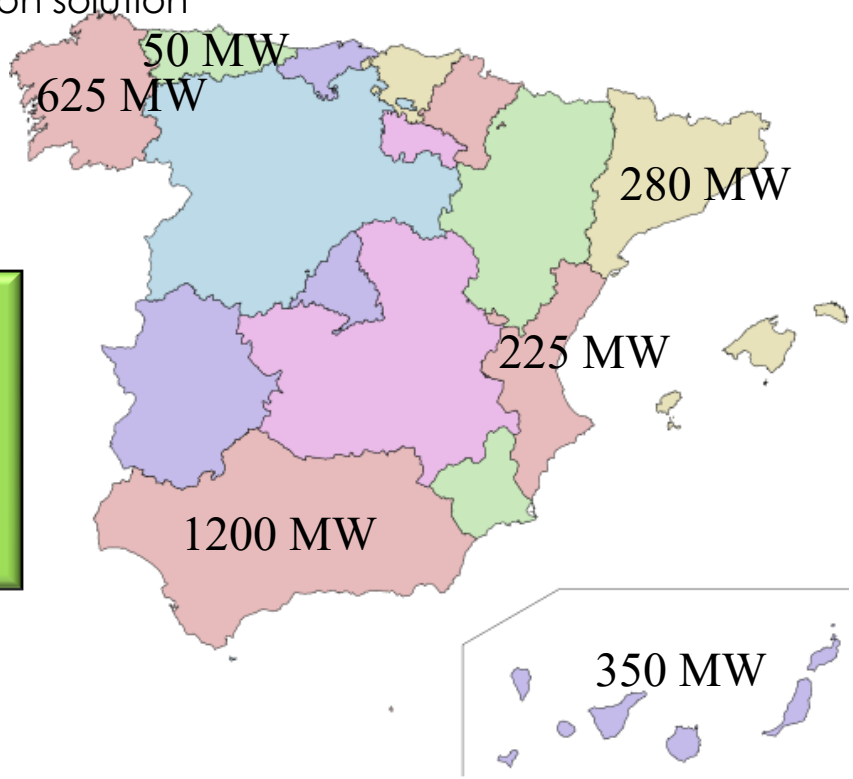
- ✓ Development of Permitting Engineering
- ✓ Environmental mapping for area selection and layout
- ✓ Development of preliminary foundation solution
- ✓ Environmental Impact Evaluation

Key figures

↑ 13 projects

↑ Fixed and Floating projects

↑ +2700 MW in development



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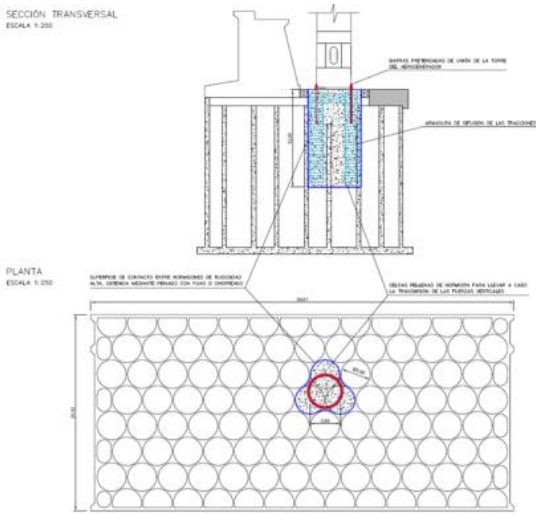
Key references

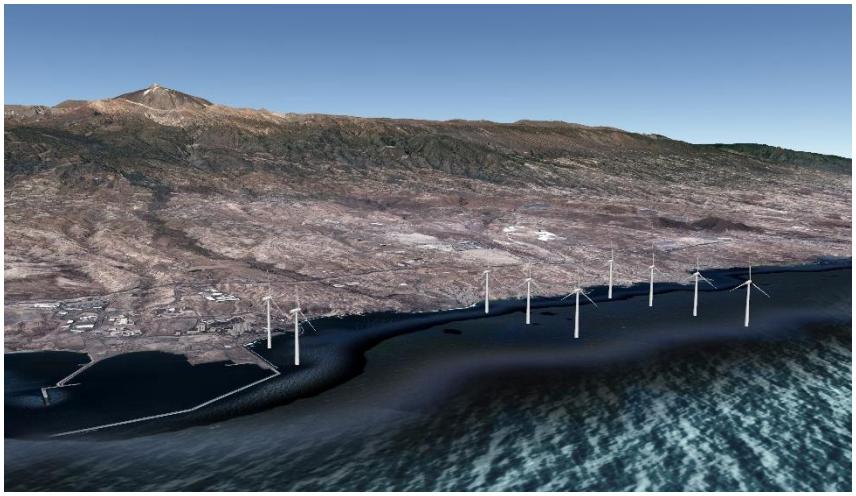
Several Port Authorities

Technical Viability of Wind Projects in Ports

Valencia, Barcelona, Granadilla and others



- ✓ Compatibility with other activities
- ✓ Definition of layout and preliminary wind energy production
- ✓ Evaluation of wind energy resource
- ✓ Study of foundation solutions:
  - ✓ Integrated in breakwaters
  - ✓ Offshore -> near the port



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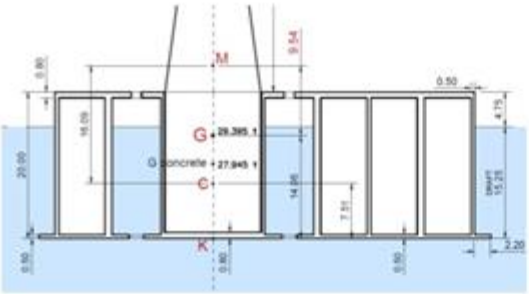
Key references

BERIDI

TRIWIND: floating platform

Canary Islands

- ✓ Prototype of a floating platform for Canary Islands to be installed in 2021
- ✓ BERIDI owner of the patent
- ✓ TYPSA responsible of the design of the platform
- ✓ TYPSA provided support during laboratory investigations (UPM and IH Cantabria)
- ✓ Calibration and validation of numerical modelling



archime3

Co-funded by the Horizon 2020 Framework Programme of the European Union

BERIDI

WindPlus

Technical assistance assembly WTG-WFA in Port of Ferrol

Ferrol

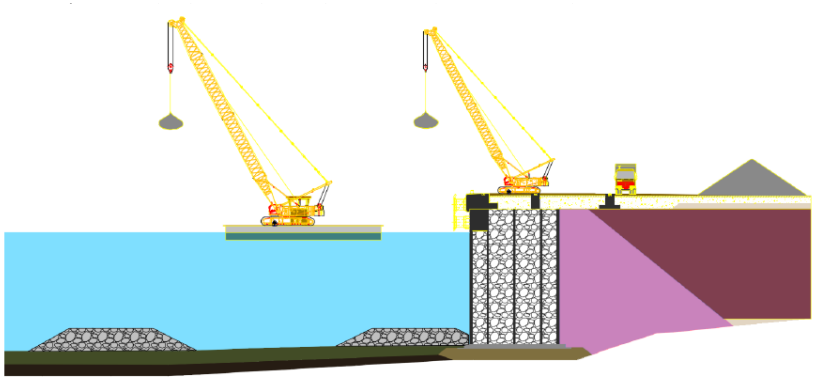
✓ Definition and supervision of geotechnical and bathymetrical investigation

✓ Selection of contractors and support in negotiation and scope of the works

✓ Support in the definition of solutions

✓ Responsible of permitting and environmental approvals

✓ On-site construction management



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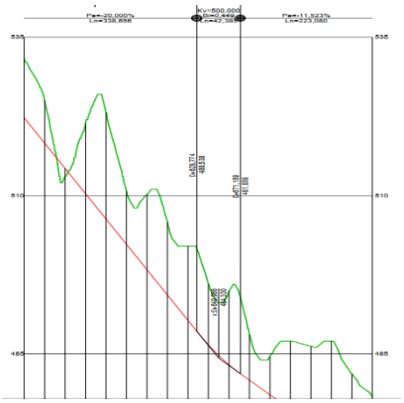
Key references

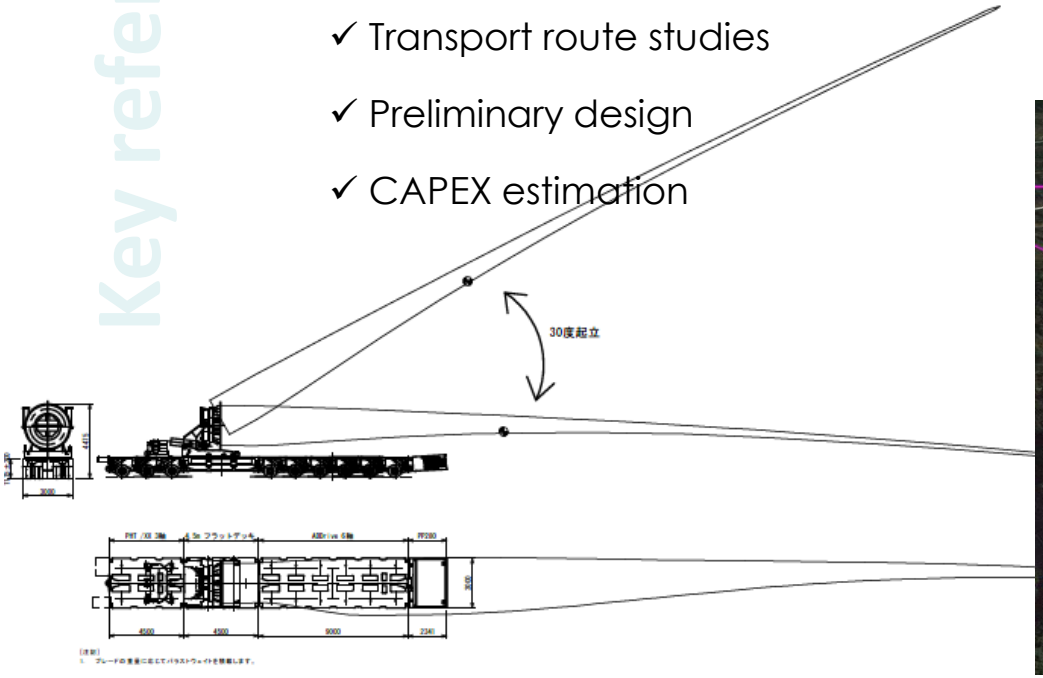
Confidential client

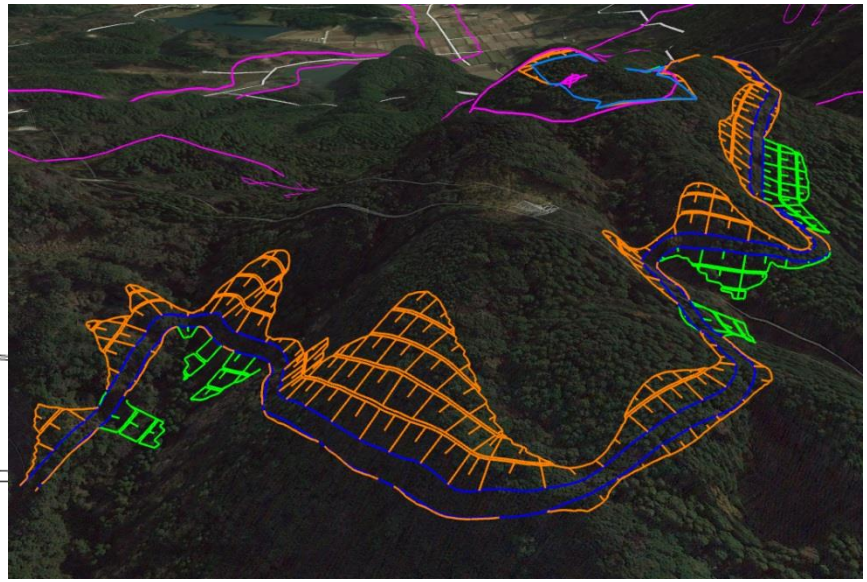
Feasibility studies of Karatsu, Tottori-Seibu and Tottori 2 WFs

Japan

- ✓ Onshore wind farms with a total power of 300 MW
- ✓ Challenging topography
- ✓ Definition of transport methods
- ✓ Transport route studies
- ✓ Preliminary design
- ✓ CAPEX estimation







Thank you very much

for your attention

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