

Where energies make tomorrow ●

# Floating Offshore Wind

Delivering assurance with end-to-end solutions



TECHNIP  
ENERGIES



# Your partner in floating offshore wind

Technip Energies is known for its unique ability to deliver and its limitless drive to enhance clients' performance. Together, we are breaking new boundaries to drive the transition to a low-carbon future.

We are a leading EPCI contractor providing solutions to meet the challenges of our clients' projects for their energy transition journey. We integrate floater technology, management of offshore projects, yard fabrication experience and a unique global footprint.



**Advancing the energy transition**



**Offering innovative offshore wind technologies**



**Supporting clients' decision-making process from early development stages through turnkey project delivery and beyond**



**Developing industrialization and scale-up approaches to reach project FID and successful execution**



**Providing a comprehensive set of services for the entire asset life cycle**

We combine our engineering and construction (E&C) capabilities with our technological know-how to develop new solutions that will support the world's energy transition. We offer a range of design, construction and industrial solutions that we expect will become more prominent as the world transitions to a less carbon-reliant economy.

We are leveraging our engineering expertise and technologies to develop new projects in floating offshore wind, hydrogen, CO<sub>2</sub> management / decarbonization and other solutions.

Technip Energies has established a new organization with a clear objective: Adapting to seize energy transition opportunities. We operate under four business lines:

- **Carbon-free solutions (floating offshore wind, green hydrogen, CO<sub>2</sub> management and industries)**
- **Gas and low-carbon energies**
- **Sustainable fuels, chemicals and circularity**
- **T.EN X – Consulting and products**

Together with our clients, we're taking on the world's biggest and most innovative energy challenges to build a better tomorrow.





# A comprehensive and competitive offering

Technip Energies works with several floating technologies such as our in-house INO15™, a cost-competitive floating offshore wind foundation solution that demonstrates our goal to fulfill market demand with an efficient and robust design integrating tomorrow's turbine technology.

We offer innovative floating offshore wind innovative floating offshore wind solutions that can be industrialized at a large scale providing a competitive LCOE to our clients.

## Innovative technologies

- In-house INO15™ cost-competitive floater design that is lean, scalable and built for global application
- X1Wind self-orienting floating wind design
- Mooring solutions
- Floating substations

## Marine operations, logistics and commissioning

- Extensive worldwide track record with logistics, T&I, mooring & hook-up activities, offshore commissioning that will allow reduced installation and commissioning cycles.

## Assets lifecycle management

- Advanced O&M expertise (e.g. Coral FLNG), including Beyond™ digital suit
- Innovative monitoring and inspection solutions with Cybernetix Robotics
- Equity linked services

## Industrialized fabrication

- Worldwide footprint with global procurement
- Strong relationship and experience with Asian fabrication yards
- Proven track record in robust design and fabrication
- Yard partnership for certainty in delivering commercial scale projects
- Digitalized suite of tools from fabrication to installation.

\*Inocean and Cybernetix are Technip Energies fully owned companies

## Providing end-to-end project management

Beginning with concept and design, we deliver comprehensive management expertise to derisk future execution of the project. We offer the best partnerships for construction and installation to ensure tailored execution from fabrication yards to local assembly and integration sites and harbors.

### KEY REFERENCES IN OFFSHORE WIND

- The world's first floating turbine (Hywind demo 2,3MW) in Norway
- The world's first floating wind turbine park (Hywind pilot - (5x6MW) in Scotland.
- Equinor South Korea Co - FEED for the Firefly floating offshore wind project



INO15™ is a cost-competitive floating offshore wind foundation solution. Through automation and robotics, we improve operational efficiency and reduce manual maintenance and inspection. With advanced simulation and analysis, we reduce uncertainties and enhance confidence.

## Key Design Features

- 15 MW (easily scalable)
- Three-column semi-submersible foundation with integrated turbine
- Lean design
- Passive ballast system
- Structural configuration for mass production & scalability
- Full assembly at quayside, low T&I cost
- Direct/easy access to tower
- Robust design to resist worldwide environment
- Fully coupled global model established and analysis performed for various site specifications

- performed for various site specifications What sets us apart
- 25 years design life (+2 years pre-service lifetime)

## Status and Certification

- Basin model tested
- Technical Readiness Level (TRL) 6
- DNV Basic Design Approval - 2022
- Bureau Veritas (BV) - 2022
- Structural analyses methodology approved by DNV



# Addressing our clients' needs from early stage

We are a partner of choice offering to our clients tailored and cost-effective solutions for the entire project life to achieve their energy transition goals.

## Our expertise ranges from conceptual design, engineering, procurement and construction to turnkey project delivery.

- Leading engineering and technology company for the energy transition
- 10 years' experience in floating wind market
- Dedicated business unit encompassing engineering, industrialization and operations capabilities

- Extensive offshore engineering and marine operations skills
- Early engagement to ensure project predictability and affordability
- Digital design solutions
- Proprietary cost-competitive and scalable floater solutions:
  - Simple (no active ballast) enabling both CAPEX and OPEX savings

- Structure configuration well suited for mass production
- Limited draft promoting quayside wind turbine generator integration
- Leading-edge technologies such as mooring technology
- Global Procurement worldwide footprint
- Strong relationship & experience with fabrication yards: certainty in delivering commercial scale projects
- Marine operations and logistics expertise securing the supply chain
- Innovative monitoring & inspection solutions for O&M



“Driving the energy transition through innovating, reliable and cost-effective floating wind solutions.”

# Partnering to unlock value

Technip Energies has an extensive global track record of yard partnerships at some of the most complex and challenging projects



## Local yard for assembly

- Integration yard management (including storage of wind turbines material)
- Wind turbine and tower integration on floater



## Potential partners

- T&I specialist
- IAC specialist (optional scope)
- Fabrication: Modules or single piece
- Transportation to local yard
- Local port or harbor for wind turbine integration



## Selecting the right yard for the right project

- FMECA audits
- Memorandum of agreement before subcontract award
- Construction driven engineering
- Procurement effort
- Subcontract wisely chosen



## Partnership toward project delivery

- Integrated team
- Skilled supervision
- Experienced pool of resources
- Mix of nationalities
- Leveraged local personnel skills
- Engineering expertise
- Logistics scheme to optimize project resources



# A tailored execution for all project needs

## A GLOBAL PROCUREMENT NETWORK

Global procurement is a centralized organization regrouping the three fields of procurement: Purchasing, quality control and surveillance. We offer a worldwide procurement network of more than 2,000 professionals.

## Top-ranking procurement tools

- EPC-Business E-Procurement tool for managing inquiry phase via the internet
- Smart Materials (SMat) Life-Cycle Material Management Application covering the complete supply chain

- IFS Jeevan managing the entire project accounting cycle from PO registration to invoice payment approvals for material and services
- Easy Plant managing site purchasing of additional materials during construction

## TECHNIP ENERGIES AS A SOLUTION INTEGRATOR MANAGING RISK AND INTERFACES

- Floater and mooring design
- Overall design management: Interaction between floater, mooring, IAC, T&I, fabrication
- Mooring procurement
- Overall T&I execution: Floater + mooring + hookup



# A full range of services and products for complete asset life cycle managements

## Genesis advisory

Genesis is a market-leading engineering company focused on providing engineering and technical services to the global energy industry.

## Digital

### DIGITAL SERVICES: BEYOND™ BY T.EN

The full range of Technip Energies' digital solutions including plant performance, carbon management and operational excellence.

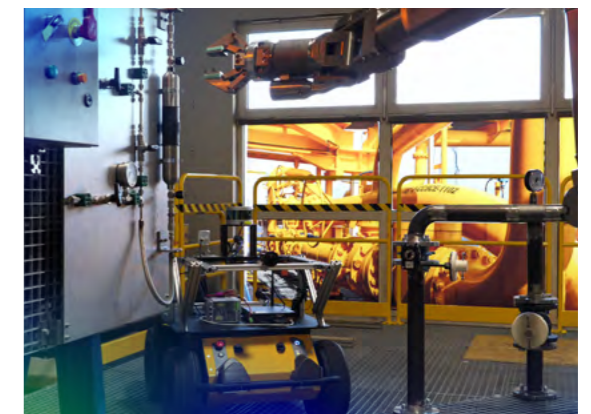
## Services to Operations

### PROJECT MANAGEMENT CONSULTANCY (PMC)

Technip Energies is a contractor of choice for PMC services. We are supporting clients' business objectives and consistently delivering projects with outstanding safety and environmental performance that meet cost, schedule and quality targets.

### CYBERNETIX

Expertise is the hallmark of Cybernetix for robotics and surveillance systems. Our solutions help energy clients increase uptime, reduce costs and improve safety and speed of decision-making through augmented monitoring and advanced robotics solutions for inspection and dexterous





# Unique project management expertise

- FLOATING OFFSHORE WIND PROJECTS
- HEADQUARTERS
- KEY REGIONAL OPERATING CENTERS
- OFFSHORE WIND CENTERS OF EXCELLENCE



**HYWIND DEMO**

- **Contract:** EPCI
- **Client:** Equinor
- **Location:** Norway
- **Delivery:** 2019

Detail engineering, design and fabrication of substructure. Design and procurement of the three-point mooring system. Inshore operations such as upending the spar and assembly of the wind turbine generator. Marine operations including preinstallation of the mooring system and the final tow-out and connection.



**X1WIND PILOT - NEXTFLOAT**

- **Contract:** codeveloper + EPCI
- **Client:** Nextfloat consortium
- **Location:** South of France
- **Delivery:** 2009

Deploy and test a 6MW prototype at Mistral test site in Mediterranean Sea  
 Design for 20+ years lifetime, fabrication, transport and installation  
 Testing for 36 months period  
 Advancing in the industrialization and scaling-up of the solution up to 20MW+  
 Relocation of the prototype into a pre-commercial (or commercial) site after testing



**CONFIDENTIAL - CONCEPT & FEED**

- **Contract:** sole concept and FEED
  - **Client:** Confidential
  - **Location:** West Sicilia
  - **Startup:** 2025 (1st batch)
- Conceptual, FEED and detailed engineering of INO15™ substructure  
 Option for detailed engineering and licensing post FID  
 Capacity: 2.8 GW



**FIREFLY FEED**

- **Contract:** Sole FEED contractor
  - **Client:** Equinor South Korea
  - **Location:** 70kms offshore South Korea east coast
  - **Startup:** 2027
- Engineering of the floating wind turbines for the proposed 800 megawatts offshore wind farm  
 Technology: In-house INO15™ floater  
 Capacity: 800 MW



**CONFIDENTIAL - FEED**

- **Contract:** FEED early works (dual competition)
- **Client:** Confidential
- **Location:** 65 to 80 kms offshore Ulsan, South Korea
- **Startup:** 2027

Scope: Engineering for the proposed 1.4 gigawatts offshore wind farm  
 Technology: In-house INO15™ floater  
 Capacity: 1.4 GW



**GRAY WHALE 3 FEED**

- **Contract:** FEED (dual competition)
  - **Client:** Corio and TotalEnergies
  - **Location:** 60 to 70km offshore Onsan Port in Ulsan, South Korea
- Scope: Engineering of the floating wind turbines for the proposed 500+ megawatts offshore wind farm in consortium with Subsea 7 and Samkang M & T  
 Technology: In-house INO15™ floater  
 Capacity: 504 MW



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