



# ASIA CLEAN ENERGY FORUM 2026

Beyond Transition: Building Secure, Resilient, Inclusive, and Intelligent Energy Systems

8-11 June | ADB Headquarters, Metro Manila, Philippines



ACEF 2026 DEEP DIVE WORKSHOP

# Enhancing Offshore Wind Bankability

Through Innovations and  
**Integrated EPC Solutions**

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In cooperation with



**KOREA ENERGY  
AGENCY**

**KOPIA**  
KOREA PLANT INDUSTRIES ASSOCIATION



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## The 15-Minute Roadmap



### 1. Marine Credibility

From Geoga Bridge to Sihwa Lake and Al-Faw. 50 years of proven offshore execution.



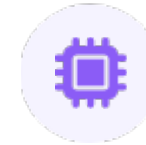
### 2. Deep-Water Imperative

Unlocking Asia's 263 GW+ pipeline where fixed-bottom limits are exceeded.



### 3. Proprietary Tech

MSPAR, CFDS floating platforms, and fully internalized Integrated Load Analysis (ILA).



### 4. AI-Driven Execution

Powering EPC with 16 years of agentic intelligence and institutional data.



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## Market Context & Targets

### 263 GW+

#### APAC Target Pipeline

South Korea targets **10.5 GW** of offshore wind by 2030, representing a massive 30x scale-up.

### -3.5 Yrs

#### New Permitting Reality

Offshore Wind Special Act (2026) cuts timelines from 10 to 6.5 years, accelerating lifecycles.

### 150 KRW

#### LCOE Target by 2035

Market demands rapid cost innovation to reach **150 KRW/kWh**, overcoming current bankability barriers.

**Insight:** Fixed-bottom LCOE reduction is exhausted. With average depths >80m in Korea, Japan, and Vietnam, **floating offshore wind is not a future option; it is the only path.**



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## 4 Barriers to Bankability



### 1. Uncertified Tech

Creates a severe financial trust gap for lenders, freezing initial capital required for deep-water assets.



### 2. OEM Dependency

Total reliance on turbine manufacturers for load analysis causes severe schedule delays and IP bottlenecks.



### 3. Fragmented Permits

Complex, multi-agency regulatory frameworks have historically triggered 3 to 5 year delays.



### 4. Aggressive Targets

Market demands rapid structural cost innovation to reach the strict LCOE target of **150 KRW/kWh by 2035**.



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## 50 Years of Marine Heritage

*"Credibility in offshore wind comes from proven execution in the sea."*



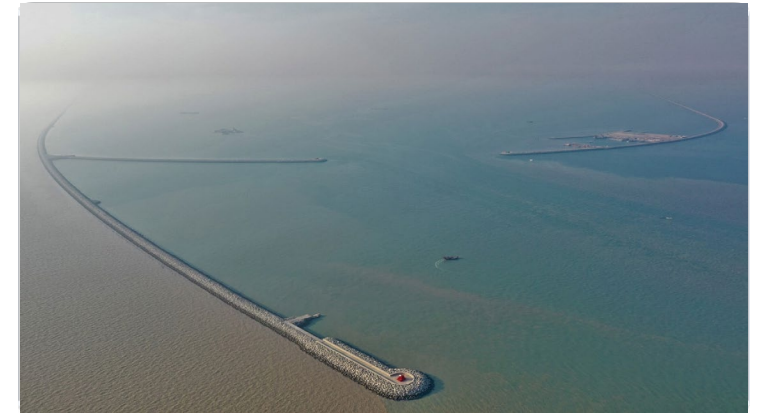
**Geoga Bridge**

World's first open-sea immersed tunnel. 55 global records, 48m depth, 3.7 km.



**Sihwa Lake**

World's largest tidal power plant facility. 254 MW generation capacity.



**Al-Faw Grand Port**

World's longest breakwater at 15.5 km. 15 Million tons of rock placed.

 **Ranked #1 in Civil Construction Output for two consecutive years.**



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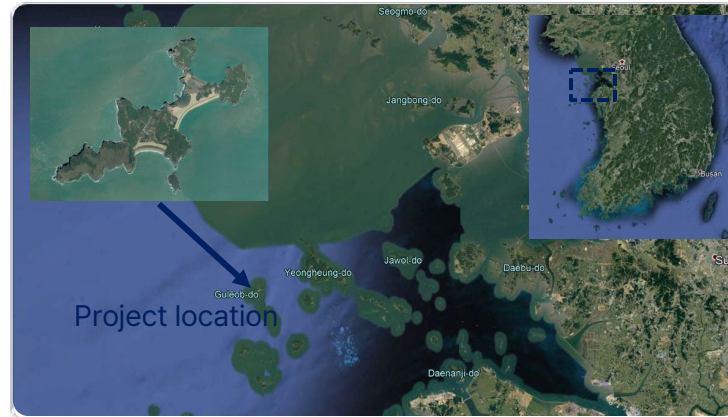
## A Reputable Wind Power Developer

*"Experience in all aspects of wind power generation, from onshore to offshore wind."*



### Yeongwol Ecowind Wind Farm

- **Capacity:** 46.2 MW (11 units x 4.2 MW/unit)
- **Construction Period:** June 2021 – May 2023
- **Annual Output:** 88.2 GWh/year
- **Project Cost:** 120 Billion KRW



### Guleopdo offshore wind projects

- **Capacity:** 250 MW (Designing)
- **Construction Period:** 2029.1Q~2032.1Q
- **Annual Output:** 801.3 GWh/year
- **Project Cost:** 2,000 Billion KRW



### Kunsan offshore wind projects

- **Capacity:** 96MW (Developing)
- 23.09 Installation of Foundation & Lidar
- 27.12 Start Construction

EPC Contractor (Marine) → Vertically Integrated Offshore Wind Developer



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## The Oceanic Blueprint

Bridging Marine Expertise to Wind Energy Development



### Completed Foundation

#### Yeongwol Ecowind

46.2 MW capacity completed in 2023. Validated onshore turbine foundation and grid connection competency.



### Active Co-Development

#### Guleopdo & Kunsan

Directly navigating complex Korean offshore permitting and community engagement.



### Next Horizon

#### Floating Expansion

From fixed-bottom to floating: our pipeline targets 351 MW of offshore development in Korea's West and South Sea.



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## Design Procedure of Floating Offshore Wind

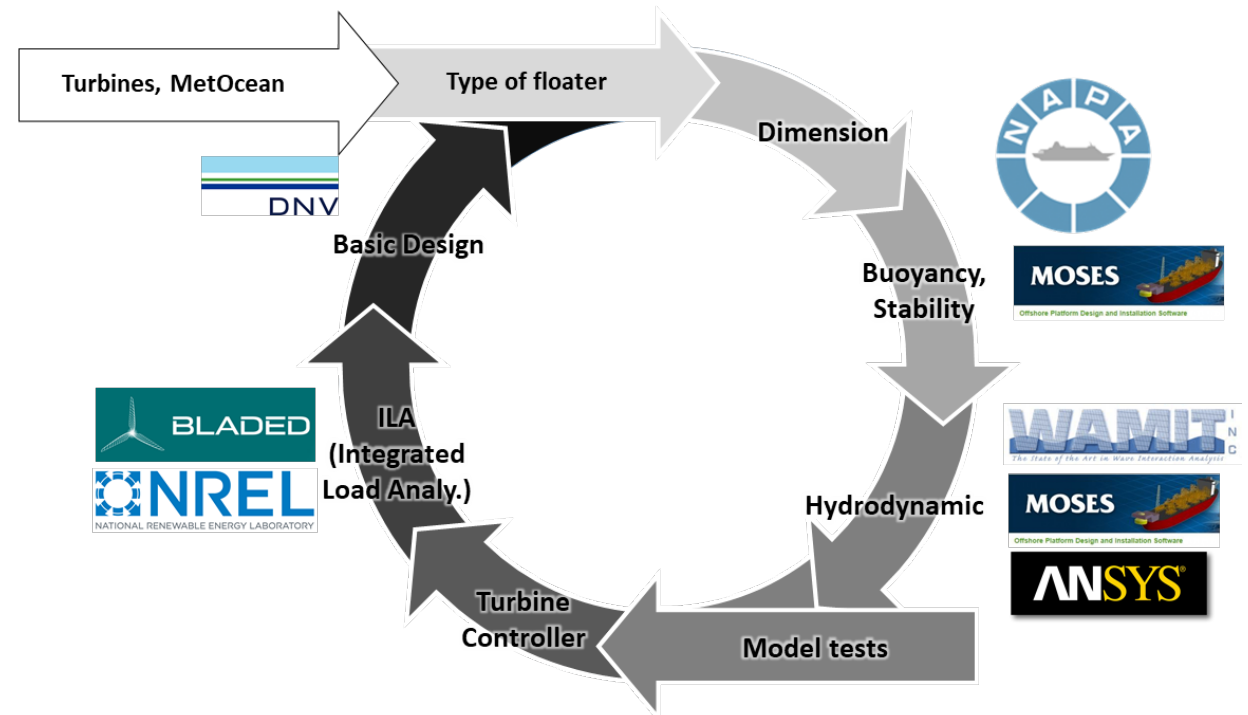
### ▶ Selecting a Foundation Type

FOW's most significant technological differentiator.

### ▶ Mooring system

### ▶ Joint Design of Turbines and Towers

Integrated co-design of the tower, platform, and control system to manage the impact of platform motion on turbine performance



In-house tools = No OEM gatekeeper = Faster financial close



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## Proprietary Floating Platforms

### ▶ MSPAR (Semi-Sub/SPAR Hybrid)

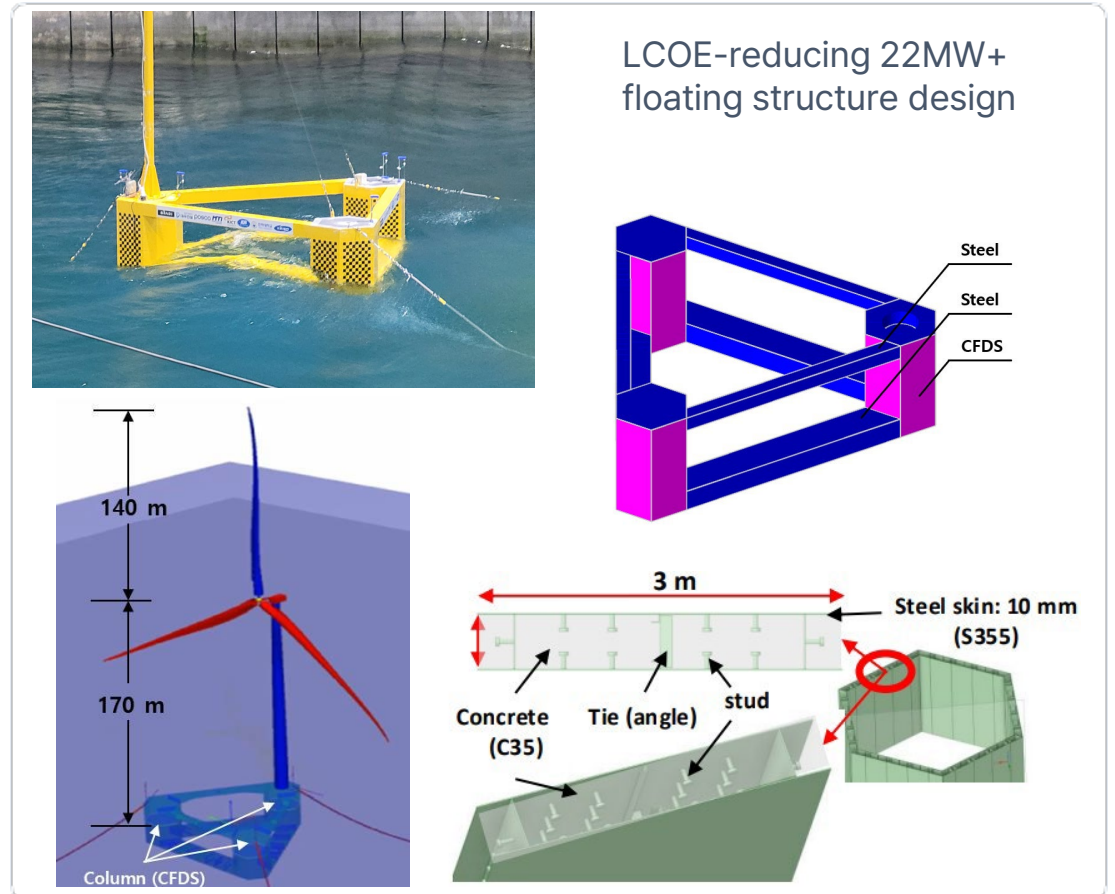
DNV Approval in Principle (AiP) obtained in 2024. Designed for **15 MW turbines**.

Engineered for extreme conditions: >100m water depths, 12.2m waves, 61m/s wind speed. Co-developed with Monobase Wind.

### ▶ CFDS (Concrete Filled Double Skin)

Targets **22 MW+ ultra-large turbines**. Uses concrete to drastically reduce targets up to 20% LCOE reduction vs. steel alternatives.

Designed for localized manufacturing. Backed by MOTIE National R&D.





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## The Ultimate Differentiator: In-House ILA

### Traditional EPC Path

#### Turbine OEM Gatekeeper

Total dependency on OEMs for dynamic structural analysis creates severe schedule delays and intellectual property bottlenecks.

**Result:** Delayed Financing & Higher Risk Profile.

### Daewoo E&C Path

#### Independent Integrated Load Analysis

Fully internalized OpenFAST and OrcaFlex capabilities. Independent ULS / FLS / AEP Optimization with zero OEM schedule dependency.

**Result:** Bankability Verified. Faster due diligence for lenders.



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## 4-Layer Vertically Integrated Model

Continuous Lifecycle Risk Management

### Layer 1: Development

Fast-tracking permits, navigating special act regulatory frameworks, and community stakeholder management (e.g., Guleopdo).

### Layer 2: Engineering

Deploying proprietary MSPAR/CFDS platforms backed by 100% independent Integrated Load Analysis (ILA).

### Layer 3: Transportation and Installation

Applying Geoga immersed tunnel seabed precision and Al-Faw breakwater mass marine logistics directly to wind arrays via WTIV integration.

### Layer 4: Operation and Maintenance

Leveraging 25-year lifecycle and asset management experience from the world's largest tidal facility at Sihwa.



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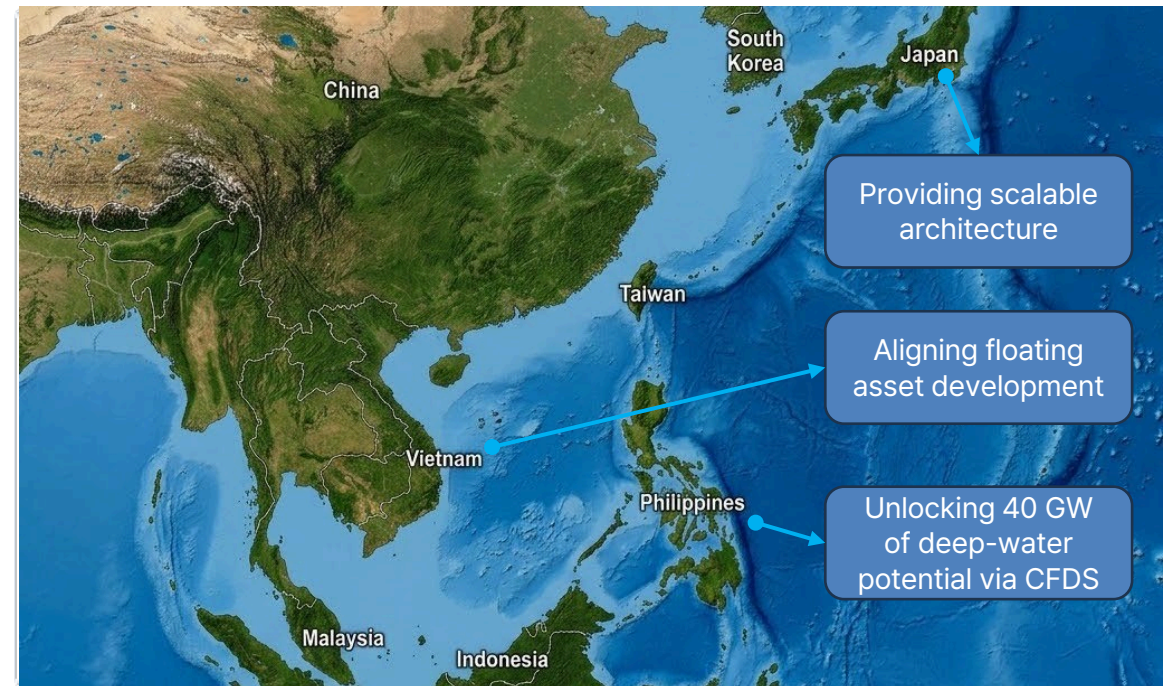


## Strategic Replicability Across Asia

### The Technology Transfer Advantage

CFDS platforms are explicitly designed for localized concrete fabrication, bypassing regional steel supply chain weaknesses and creating local green jobs.

- ▶ **Japan:** Providing scalable architecture to meet the Green Innovation Fund's target of 45 GW by 2040.
- ▶ **Vietnam / Philippines:** Aligning floating asset development with emerging Feed-in Tariff (FiT) policy frameworks. Unlocking deep-water potential.





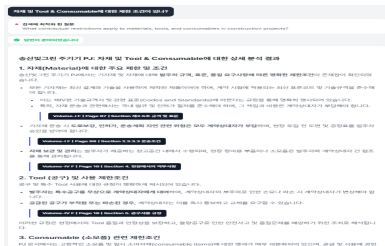
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## Daewoo E&C AI Agent Portfolio

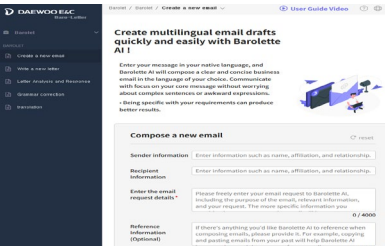


**Advanced RAG**

### BaroDap AI

Doc-based Auto Review

- Code / Standard Verification
- Chat-based contract & ITB Analysis

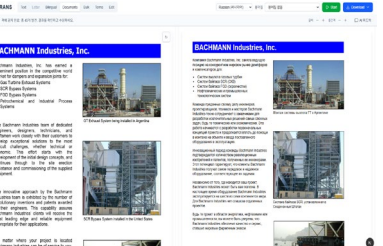


**LLM / RAG**

### BaroLetter AI

Comm. Assistant

- Tone Analysis & Drafts
- Grammar & Term Check

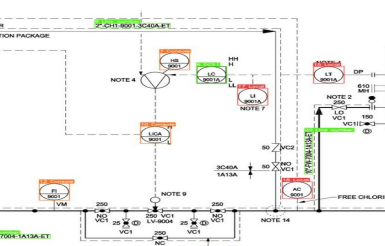


**Data Transform**

### BaroTranslation AI

Professional Translation

- Industry-Specific Terms
- Layout Preservation

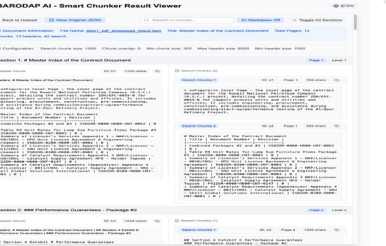


**Deep Learning**

### DIDIT

Auto Drawing Recognition

- Symbol & Text Detection
- P&ID Consistency Check



**Data Transform**

### Preprocessor for AI

Document to AI Ready Data

- Smart Chunker Structuring
- Table/Image JSON Conv.

**+ Agentic Layer** Applying Agentic Workflow technology that thinks, plans, and verifies beyond simple retrieval.



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## Proven Impact & AI Suite

**₩14B** approx. USD 10M  
Verified Cost Savings (17 Cases)

**17.5 Mo**  
Cumulative Schedule Reduction

AI Product	Status	Core Function
LL AI Agent	Deployed	Expert knowledge retrieval and historical risk surfacing.
Barodap AI	Deployed	Deep project document analysis and natural language search.
DIDIT	In Development	Automated P&ID drawing recognition and engineering verification.
Barocollect	POC Phase	Real-time regulatory and international standard update monitoring.



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## Synthesis: The Bankability Formula



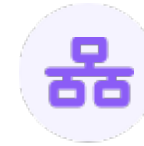
### Pillar 1: Certified Tech

DNV AiP + In-house ILA completely removes OEM dependency and closes the financial trust gap.



### Pillar 2: Marine Heritage

50 years of world-record execution de-risks open-ocean installation and deep-water logistics.



### Pillar 3: AI Edge

Agentic risk reduction guarantees cost certainty and eliminates operational blind spots during execution.

Daewoo E&C does not just build offshore wind—we develop, certify, install, and optimize it.

# Q&A

## Enhancing Offshore Wind Bankability

Through Innovations and Integrated EPC Solutions



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