Ocean Energy Pathway

OFFSHORE WIND IN S. Korea
韓国における洋上風力

Big ambitions. Early progress. A new approach.

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Ocean Energy Pathway (OEP)

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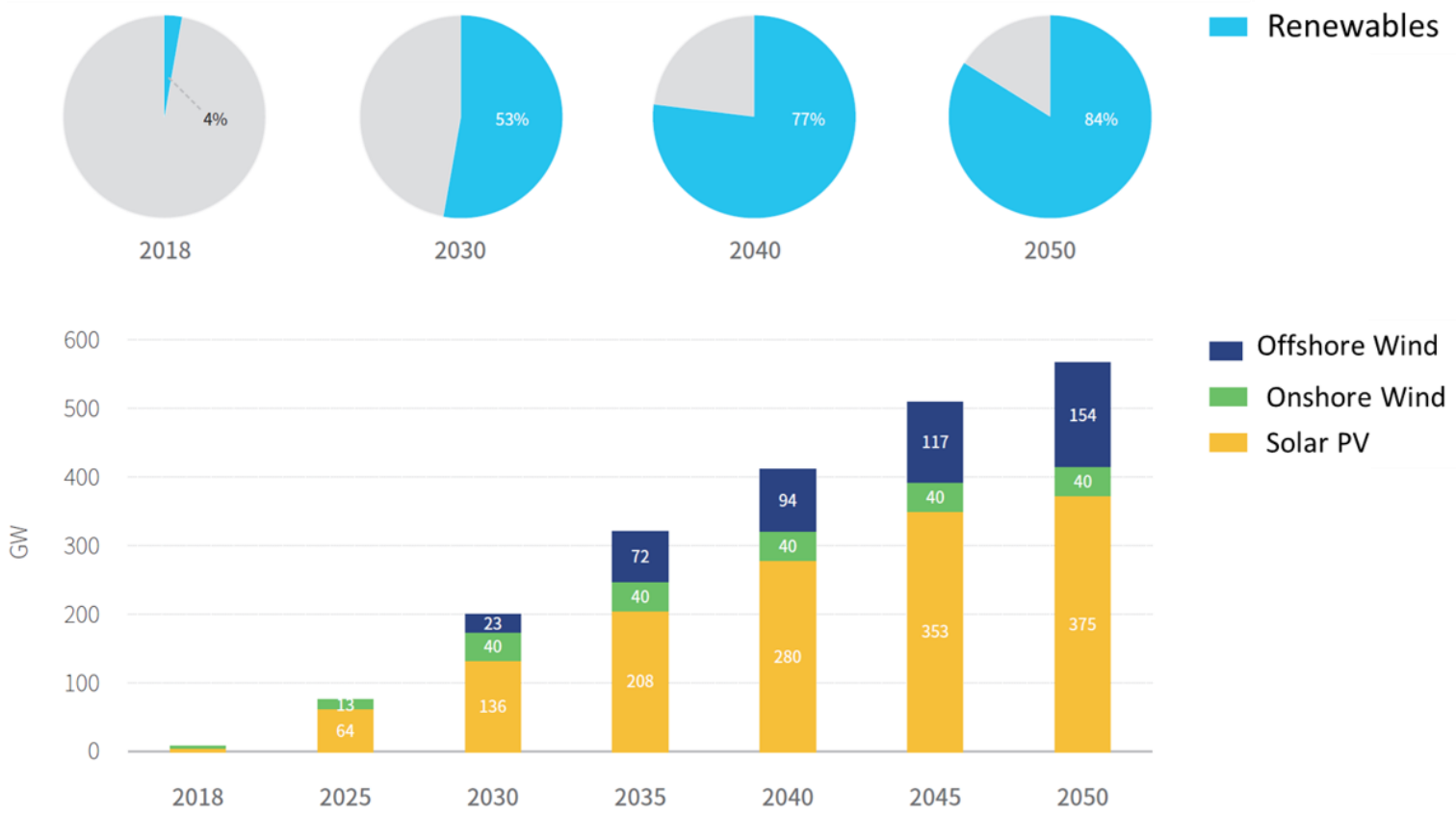
Power Mix in South Korea - Actual + Target
韓国のエネルギーミックス　現状＋目標

Energy Source	2023 Actual	2030 Target
Nuclear	30.7%	31.8%
Coal	31.4%	17.4%
Natural Gas	26.8%	25.1%
Renewables	8.4%	18.8%
Others	2.7%	6.9%
Total	**100%**	**100%**

Source: : KEPCO & MCEE

How many GW of offshore wind S. Korea need - 154 GW

韓国には何GWの洋上風力発電が必要か - 154 GW



Source: IGT, GESI, NEXT, and Agora Energiewende (2022), *K-MAP Scenario*.

Aiming a large market — still at an early stage
大規模な市場を狙う — まだ初期段階にある

0.36 GW

Operational
（稼働中）
(2025 1Q)

5.9 GW

20 Awarded
（落札済）
1 completed（稼働中）
1 cancelled（中止）
2 construction（工事中）

3 GW

2030

25 GW

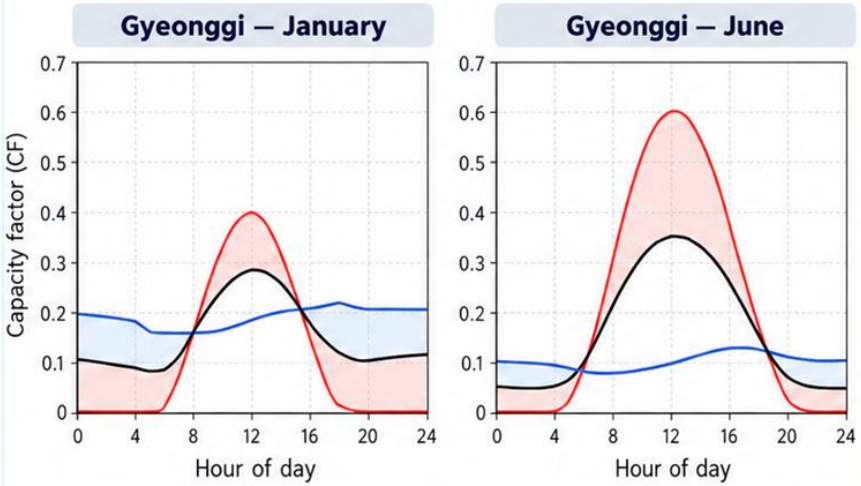
2035

Ambition is strong, but delivery has been slow.
目標は高いものの、進捗は遅れている

Solar PV & OSW Complement Each Other

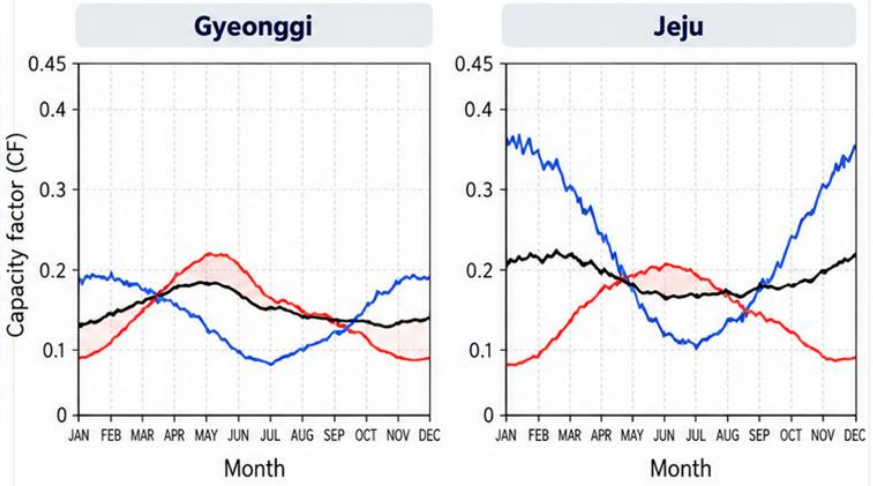
太陽光発電と洋上風力発電は互いに補完的である

Daily complementarity



Offshore wind helps fill the nighttime gap and smooths intraday variability.

Seasonal complementarity



Offshore wind is strongest when solar is weaker, especially in winter.

Solar PV — Offshore wind — 50:50 hybrid

Redrawn from Choi et al. (2025), based on ERA5 reanalysis (1961–2023).

Why has progress been slow?
なぜ進捗が遅れているのか？

Complex permitting
複雑な許可プロセス

Numerous approvals and fragmented responsibilities

多数の許認可手続きと、担当部署の縦割り

Grid connections
系統連系

Difficult access to network capacity

系統容量へのアクセスが困難

Costs and infrastructure
コストとインフラ

Financing, ports, vessels and supply-chain readiness

資金調達、港湾、船舶、サプライチェーン

Local acceptance
地域社会の受容性

Early engagement with fishers and communities is vital

漁業者や地域住民との初期段階からの合意形成が不可欠

Korea is changing the way projects are developed
韓国はプロジェクト開発の手法を転換中

BEFORE • 以前

Developer-led
事業者主導型

Companies identify sites and navigate multiple permits.
事業者が自ら候補地を選定し、多数の許認可手続きに対応

→

NOW / NEXT • 現在 / 今後

Government-planned
政府計画型

Public authorities plan areas in advance and coordinate development.
政府があらかじめエリアを計画し、開発を取りまとめる

Offshore Wind Act: enacted in 2025; effective from March 2026.
洋上風力特別法：2025年制定、2026年3月施行

Major Offshore Wind Policy Milestones in Korea

From legal reform to delivery institutions

1

Mar 2025

Offshore Wind Act enacted

Created the legal basis for planned-site development and integrated approvals.

2

Oct 2025

Ministry of Climate, Energy and Environment (MCEE) launched

Created a dedicated policy home for offshore wind.

3

Dec 2025

Infrastructure Expansion & Deployment Plan

Ports, vessels, finance and technology plan to support build-out.

4

Feb 2026

Public–Private Offshore Wind Competitiveness Committee (KOWIC) launched

Government–industry platform on cost, supply chain and infrastructure.

5

Mar 26 2026

Offshore Wind Act enters into force

Shift toward government-led planned sites begins.

6

Jun 30 2026

2035 Offshore Wind Auction Roadmap announced

55 GW auctions by 2035; annual market visibility improves.

7

Sep 2026

Offshore Wind Power Committee launched

Prime Minister-level governance body begins operation.

Policy direction is moving from project-by-project development toward state-led planning, delivery coordination and system build-out.