

South Korea Renewable Energy - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

South Korea Renewable Energy Market Analysis

The South Korea Renewable Energy Market size in terms of installed base is expected to grow from 43.65 gigawatt in 2025 to 78.45 gigawatt by 2030, at a CAGR of 12.44% during the forecast period (2025-2030).

Accelerated policy support, especially the Special Act for Promotion of Wind Power Distribution adopted in March 2025, erodes dependency on conventional fuels and releases a surge of project approvals. Mandatory renewable energy certificate (REC) quotas push local conglomerates toward long-term power-purchase agreements (PPAs), as shown by Hyundai Motor's 610 GWh annual deal, the country's largest corporate PPA. Ongoing port upgrades near Mokpo and Ulsan unlock offshore wind logistics, while KEPCO's national digital-twin rollout tackles historic grid congestion. Jeju Island's carbon-free 2030 program offers a living laboratory for storage-coupled renewables, illustrated by ABB's high-inertia flywheel project that stabilizes local frequency excursions.

South Korea Renewable Energy Market Trends and Insights

Rapid Decline in Utility-Scale Solar LCOE Across South Korea

Utility-scale solar costs have fallen 27% since 2024, boosting solar's 45.3% share of the South Korean renewable energy market. The drop stems from higher module output at Hanwha Q CELLS and OCI plants, larger 50-100 MW project sizes, and tariff

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exemptions for imported components. Although global oversupply eroded margins at Hanwha Solutions, developers installed 1.2 GW of new solar capacity during 1H 2024 alone. Falling LCOE is poised to deliver grid parity by 2026, intensifying competition for industrial electricity buyers seeking fixed-price PPAs.

Mandatory REC Quotas Pushing Corporates Toward PPAs

The Renewable Portfolio Standard obliges large generators to source 25% renewable electricity by 2026, triggering a record wave of corporate PPAs. Hyundai's landmark 610 GWh contract broke KEPCO's single-buyer model, giving manufacturers predictable energy costs and reputational gains. Direct PPAs, however, do not yet earn RECs, creating parallel compliance and finance tracks that regulators must reconcile for long-term scalability.

Land Acquisition Challenges for Ground-Mounted Solar in Gyeonggi & Chungcheong

Setback rules mandating 100-1,000 m buffers from roads and homes remove up to 70% of viable sites, inflating development costs by up to 25%. Citizen lawsuits filed in February 2025 argue the curbs lack scientific basis, while local governments resist repeal to avoid visual-impact disputes.

Other drivers and restraints analyzed in the detailed report include:

Offshore Wind Port Infrastructure Subsidies Near Mokpo & Ulsan / Grid Modernisation Investments (KEPCO Digital Twin Roll-out) / Slow Environmental Impact Assessment Approval Cycle (Above 30 months) /

For complete list of drivers and restraints, kindly check the Table Of Contents.

Segment Analysis

Solar PV's entrenched 79% share underscores cost leadership, but the South Korean renewable energy market size for offshore wind is poised to overtake other sources as cumulative capacity accelerates. Auction reforms that waived local-content mandates in 2023 cut capital expenditure by 15% and drew Orsted, Equinor, and Vestas into multi-GW ventures. Nearly 1.9 GW was awarded in December 2024, and project pipelines exceed 58 GW. Floating-wind pilots near Ulsan extend reach to deeper waters, signaling a technology transition that tilts investment toward marine resources. Hydropower, bioenergy and geothermal stay marginal because of land constraints and lower policy priority, while a subsidy phase-down for biomass takes effect in January 2025.

Commercial scaling of 15-MW turbines boosts capacity factors to 50%+, improving project economics despite higher up-front cost. The South Korea renewable energy market share for offshore wind will widen as grid-connected capacity multiplies and port upgrades remove bottlenecks. Fixed-foundation sites in Shinan, Yeonggwang, and Gunsan anchor early build-out, whereas floating foundations open access to 200-m water depths off Pohang. A domestic supply chain led by CS Wind and Hyosung Heavy Industries aligns with export ambitions across Asia, reinforcing the sector's strategic weight.

The South Korea Renewable Energy Market Report is Segmented by Renewable Source Type (Wind, Solar PV, Hydropower, Bio-Energy, and Geothermal), Installation Type (New Build and Retrofit and Repowering), and End-User (Residential, Commercial and Industrial, and Utilities). The Market Sizes and Forecasts are Provided in Terms of Installed Capacity (GW).

List of Companies Covered in this Report:

Korea Electric Power Corporation (KEPCO) / Korea Hydro & Nuclear Power Co., Ltd (KHNP) / Korea Midland Power Co., Ltd (KOMIPO)

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/ Korea South-East Power Co., Ltd (KOSEP) / Korea Western Power Co., Ltd (KOWEPO) / Korea East-West Power Co., Ltd (EWP) / Hanwha Q CELLS Co., Ltd / Hanwha Corporation / S-Energy Co., Ltd / OCI Holdings / POSCO Energy Co., Ltd / SK E&S Co., Ltd / CS Wind Corporation / Doosan Enerbility Co., Ltd / Ocean Winds Korea Co., Ltd / Vestas Korea Co., Ltd / Siemens Gamesa Renewable Energy Korea Ltd / Orsted Korea Limited / Equinor Korea Co., Ltd / Gridwiz, Inc. / Canadian Solar Inc. / JinkoSolar Holding Co., Ltd /

Additional Benefits:

The market estimate (ME) sheet in Excel format /
3 months of analyst support /

Table of Contents:

1 Introduction

1.1 Study Assumptions & Market Definition

1.2 Scope of the Study

2 Research Methodology

3 Executive Summary

4 Market Landscape

4.1 Market Overview

4.2 Installed Renewable-Energy Capacity & Forecast (MW)

4.3 Market Drivers

4.3.1 Rapid Decline in Utility-Scale Solar LCOE Across South Korea

4.3.2 Mandatory REC Quotas Pushing Corporates Toward PPAs

4.3.3 Offshore Wind Port Infrastructure Subsidies Near Mokpo & Ulsan

4.3.4 Hydrogen-to-Power Pilots Backed by KEPCO & SK E&S

4.3.5 Jeju "Carbon-Free Island" 2030 Target Accelerating Storage-Coupled RE

4.3.6 Grid Modernization Investments (KEPCO Digital Twin Roll-out)

4.4 Market Restraints

4.4.1 Land Acquisition Challenges for Ground-Mounted Solar in Gyeonggi & Chungcheong

4.4.2 Curtailment Risk Owing to 154 kV Congestion on Southwest Corridor

4.4.3 Local-content Rules Inflating Offshore-Wind CapEx

4.4.4 Slow Environmental Impact Assessment (EIA) Approval Cycle (>30 months)

4.5 Supply-Chain Analysis

4.6 Regulatory Outlook

4.7 Technological Outlook

4.8 Porter's Five Forces

4.8.1 Threat of New Entrants

4.8.2 Bargaining Power of Suppliers

4.8.3 Bargaining Power of Buyers (Off-takers)

4.8.4 Threat of Substitutes (Conventional Power)

4.8.5 Competitive Rivalry

4.9 PESTLE Analysis

5 Market Size & Growth Forecasts

5.1 By Renewable Source Type

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- 5.1.1 Wind
- 5.1.2 Solar PV
- 5.1.3 Hydropower
- 5.1.4 Bio-energy
- 5.1.5 Geothermal
- 5.2 By Installation Type
 - 5.2.1 New Build
 - 5.2.2 Retrofit and Repowering
- 5.3 By End-user
 - 5.3.1 Residential
 - 5.3.2 Commercial and Industrial
 - 5.3.3 Utilities

6 Competitive Landscape

- 6.1 Market Concentration
- 6.2 Strategic Moves (M&A, Partnerships, PPAs)
- 6.3 Market Share Analysis (Market Rank/Share for key companies)
- 6.4 Company Profiles (includes Global level Overview, Market level overview, Core Segments, Financials as available, Strategic Information, Products & Services, and Recent Developments)
 - 6.4.1 Korea Electric Power Corporation (KEPCO)
 - 6.4.2 Korea Hydro & Nuclear Power Co., Ltd (KHNP)
 - 6.4.3 Korea Midland Power Co., Ltd (KOMIPO)
 - 6.4.4 Korea South-East Power Co., Ltd (KOSEP)
 - 6.4.5 Korea Western Power Co., Ltd (KOWEPO)
 - 6.4.6 Korea East-West Power Co., Ltd (EWP)
 - 6.4.7 Hanwha Q CELLS Co., Ltd
 - 6.4.8 Hanwha Corporation
 - 6.4.9 S-Energy Co., Ltd
 - 6.4.10 OCI Holdings
 - 6.4.11 POSCO Energy Co., Ltd
 - 6.4.12 SK E&S Co., Ltd
 - 6.4.13 CS Wind Corporation
 - 6.4.14 Doosan Enerbility Co., Ltd
 - 6.4.15 Ocean Winds Korea Co., Ltd
 - 6.4.16 Vestas Korea Co., Ltd
 - 6.4.17 Siemens Gamesa Renewable Energy Korea Ltd
 - 6.4.18 Orsted Korea Limited
 - 6.4.19 Equinor Korea Co., Ltd
 - 6.4.20 Gridwiz, Inc.
 - 6.4.21 Canadian Solar Inc.
 - 6.4.22 JinkoSolar Holding Co., Ltd

7 Market Opportunities & Future Outlook

- 7.1 White-space & Unmet-Need Assessment

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