IN-DEPTH

Renewable Energy Law

SOUTH KOREA

LEXOLOGY

Renewable Energy Law

EDITION 8

Contributing Editor

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In-Depth: Renewable Energy Law (formerly The Renewable Energy Law Review) provides an insightful overview of the policies, legal structures and state of play in the renewable energy industry globally. It offers a practical guide to the legal frameworks and current status and challenges in structuring, financing and investing in renewable energy projects in key jurisdictions worldwide.

Generated: October 30, 2025

South Korea

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Summary

Introduction

Korea's renewable energy market is now guided by a maturing legal and policy framework that is reshaping how projects are conceived, permitted and financed. The Electric Utility Act remains the cornerstone, requiring developers to obtain a generation business licence and setting the conditions for participation in the electricity market. This licensing process establishes financial and technical thresholds and ensures consistency with national electricity supply and demand planning.

Complementing this, the Act on the Promotion of the Development, Use and Diffusion of New and Renewable Energy (commonly referred to as the Renewable Energy Act) provides the overarching framework for government support measures, technology-specific policies and the integration of renewables into Korea's broader energy transition strategy. More recently, specialised legislation has been enacted to address structural bottlenecks: the Offshore Wind Promotion Act (2025) centralises site designation and permitting for large-scale offshore projects, while the Distributed Energy Act (2024) creates special zones for local supply, storage and virtual power plants, thereby supporting system flexibility and regional development.

Despite the relatively low share of renewables in Korea's generation mix – around 10 per cent in 2023 – the government's 11th Basic Plan for Electricity Supply and Demand (2024–2038) sets ambitious growth targets, aiming for more than 120GW of capacity by 2038. In practice, this will mean a significant acceleration of offshore wind and solar development, supported by streamlined permitting processes and closer coordination between central and local authorities. For project sponsors and financiers, these legislative changes signal a more predictable environment for renewable investment in the decade ahead.

Year in review

The past two years have marked a period of significant transition for Korea's renewable energy sector, driven by both regulatory reform and evolving market conditions. At the policy level, the most consequential development has been the adoption of the 11th Basic Plan for Electricity Supply and Demand (2024–2038), finalised in early 2025. This long-term plan sets Korea on a path toward a 70 per cent carbon-free generation mix by 2038, with ambitious capacity targets for solar (77GW) and wind (40GW). Compared to earlier drafts, the final plan slightly reduced nuclear capacity additions while reinforcing the role of renewables. The Plan is expected to guide transmission build-out, capacity auctions for hydrogen and storage and the broader transition to a low-carbon grid.

Complementing the Basic Plan, the National Assembly in February 2025 enacted the 'three energy laws'. Among these, the Special Act on the Promotion of Offshore Wind Power is particularly transformative. Historically, Korea's offshore wind projects advanced under a fragmented 'developer-led system', requiring sponsors to assemble multiple permits across agencies. The new Act introduces government-designated offshore wind zones and a one-stop licensing process, intended to shorten development timelines and reduce uncertainty. Transitional rules preserve some grandfathering rights for projects already

well advanced, but future large-scale offshore wind development will be closely tied to this new regime.

Grid integration has long been a bottleneck for renewable expansion, and the newly passed National Power Grid Act aims to address this challenge. By streamlining environmental and land-use permitting, consolidating approvals into a deemed-consent process and enhancing compensation mechanisms for affected residents, the law seeks to accelerate transmission expansion – critical to absorbing new solar and wind capacity identified in the 11th Plan.

At the judicial level, a landmark decision by the Constitutional Court in August 2024 has also shaped the policy landscape. The Court ruled that the Carbon Neutrality Framework Act was unconstitutional insofar as it failed to provide reduction targets beyond 2030. This decision effectively obliges the legislature to adopt more detailed emissions pathways for the 2030s and 2040s by 2026. While not sector-specific, the ruling is expected to add momentum to renewable deployment as part of Korea's long-term decarbonisation strategy.

On the market side, corporate power purchase agreements (PPAs) have continued to gain traction. Initially introduced to facilitate RE100 commitments, PPAs are now also viewed as a hedge against rising wholesale electricity prices. Both third-party PPAs via KEPCO and direct PPAs between generators and end-users are being used, with lenders paying close attention to the creditworthiness of renewable electricity suppliers who often intermediate these transactions. Recent regulatory amendments easing participation thresholds are expected to broaden access to PPA arrangements, particularly for industrial users.

Finally, renewable support schemes have begun to shift away from biomass. Through adjustments to renewable energy certificate (REC) weighting, subsidies for co-firing and dedicated biomass generation are being phased down, reorienting incentives toward genuine wind and solar projects. This recalibration is already influencing REC market dynamics and will likely spur greater investment in new renewable capacity.

Taken together, these developments illustrate the dynamic interplay between policy, legislation, market design and judicial oversight in shaping Korea's renewable energy sector. The 11th Basic Plan provides long-term direction, the new energy laws address structural bottlenecks in offshore wind and grid expansion and the courts have reinforced the constitutional imperative of climate action. Meanwhile, evolving PPA practice and REC reforms reflect a market steadily adapting to both corporate demand and cost-hedging needs.

Policy and regulatory framework

Policy background

Korea's renewable energy market operates primarily under a Renewable Portfolio Standard (RPS) regime, which replaced the feed-in tariff system in 2012. The RPS imposes a mandatory renewable generation obligation on large power generation subsidiaries of state-owned KEPCO and on other generation companies with installed capacity of 500MW

or more. These entities must source an increasing percentage of their electricity from renewable energy each year. The obligation is statutory, with the ceiling recently lifted to allow quotas to rise up to 25 per cent of generation.

Compliance is achieved either by developing renewable capacity directly or by purchasing RECs in the national trading system. Each REC represents one megawatt-hour of renewable generation, adjusted by a technology-specific weighting factor designed to incentivise preferred technologies – such as offshore wind or floating solar – while phasing down support for biomass co-firing.

REC transactions occur through both bilateral contracts and the centralised exchange operated by the Korea Power Exchange. Prices are determined by supply–demand dynamics, creating a secondary market that underpins project revenues. For developers, bankability often depends on long-term fixed-price REC contracts awarded through government-run bidding programmes, which provide stability against price volatility.

This dual scheme – obligations on large generators and a tradable REC market – remains the backbone of Korea's renewable energy policy. Recent reforms are recalibrating REC weightings and introducing competitive auctions to channel investment into technologies aligned with national priorities, particularly offshore wind and distributed energy resources.

Regulatory and consenting framework

The development of renewable energy projects in Korea is governed by a multi-layered regulatory framework that integrates electricity law, environmental regulation and land-use planning. Developers must navigate a sequential process that begins with obtaining the right to operate as a power generator and extends through land acquisition, permitting and construction approvals.

Power generation licence

The starting point is the Electric Utility Act, which requires all entities wishing to generate and sell electricity to secure a power generation business licence. The Ministry of Trade, Industry and Energy (MOTIE) is the competent authority. To qualify, the applicant must demonstrate adequate financial capacity, technical capability, and project feasibility. A critical requirement is proof of minimum equity capital: at least 1 per cent of the total project cost must be paid in at the time of application, and the financing plan must show at least 15 per cent equity contribution. These requirements are designed to discourage speculative applications and ensure that only adequately capitalised projects proceed.

The licensing process also reviews site suitability, grid connection feasibility and consistency with national electricity supply and demand plans. Once granted, the licence constitutes the legal foundation for the developer to move forward with land and permitting processes.

Land use and site control

With the licence in hand, developers must secure lawful access to the project site. In many cases this involves the purchase or lease of private land, or the establishment of special rights such as superficies rights. Where agricultural land is involved, conversion

approval is required under the Farmland Act. For offshore projects, developers must obtain occupation and use permits under the Public Waters Management and Reclamation Act. These land-use approvals are often prerequisites for later environmental and construction permits.

At the same time, developers must ensure conformity with local urban and regional planning regulations under the National Land Planning and Utilization Act. This may involve amending zoning or obtaining location permits from municipal authorities.

Environmental and planning approvals

Renewable projects are subject to a multi-tiered environmental review system. Projects above specified capacity thresholds must undergo a strategic environmental assessment or a full environmental impact assessment (EIA) under the Environmental Impact Assessment Act. These assessments examine ecological impacts, land use compatibility and community considerations, and are often the most time-consuming step in the approval process. For wind and solar farms, additional consultation is typically required with the Ministry of Environment, local governments and sometimes the Korea Forest Service if forestland is affected.

Development permit and construction authorisation

After securing environmental clearance, the developer must obtain a development permit from the relevant local government.[1] This permit authorises the actual change of land use necessary for project construction – such as grading, building access roads or erecting turbines. Parallel to this, construction must comply with the Building Act and related technical codes, requiring separate building permits or construction plan approvals for facilities, transmission lines and substations.

For grid interconnection, approval is required from Korea Electric Power Corporation (KEPCO)[2], which operates the transmission and distribution networks. KEPCO conducts technical reviews to ensure that the new project can connect safely and reliably without jeopardizing system stability.

Specialised permits for certain technologies

Additional permits may apply depending on technology. Offshore wind developers, for instance, must obtain maritime safety reviews, navigation clearance from the Ministry of Oceans and Fisheries and fishery-related approvals if traditional fishing grounds are affected. Solar projects on reservoirs or lakes may require separate water use permits. Projects co-located with storage may also be subject to fire safety and electrical safety reviews by the Korea Electrical Safety Corporation.

Conclusion

The Korean regulatory process for renewable energy projects is comprehensive and sequential. It begins with a national-level generation licence, proceeds through land use and environmental approvals and culminates in local development permits and

construction authorisations. While the framework is designed to ensure environmental and social safeguards, in practice, it results in a lengthy and complex pathway for developers. Recent policy reforms – such as the Offshore Wind Promotion Act and the Distributed Energy Act – are aimed at streamlining these steps, particularly for large-scale offshore wind and distributed energy resources, reflecting Korea's policy priority to accelerate renewable deployment within a robust regulatory structure.

Renewable energy project development

The ownership structure of renewable energy projects in Korea has evolved in diverse forms. The most common model is the establishment of a special purpose company (SPC) dedicated to project execution. These SPCs are typically held by project sponsors, financial institutions and, in some cases, local residents.

A distinctive feature of the Korean regime is that a minimum equity ratio is required as a condition to obtain a power generation business licence. At the time of application, the SPC must demonstrate paid-in capital equal to at least 1 per cent of the total project cost, and the financing plan must reflect an equity ratio of at least 15 per cent. The equity commitment under the financing plan must be supported by legally binding documents such as equity commitment letters or a Joint Development Agreement (JDA). These requirements are stricter than the previous regime, which did not require paid-in capital at the time of application and only required a minimum equity ratio of 10 per cent.

Another notable feature is that local residents often participate as equity or debt investors in nearby projects. Where residents contribute at least 1 per cent of the total project cost, the project company is entitled to an additional weighting on the Renewable Energy Certificates (RECs) issued for electricity sold into the market. This incentivises resident participation, enhances social acceptance and helps mitigate opposition to development. Participation may take the form of direct equity investment, bond investment or participation through a cooperative or fund formed by local residents.

Project financing in Korea typically has a tenor of 15–20 years. The lender base commonly includes commercial banks, investment banks, private equity funds and state-owned financial institutions. Although the structures broadly follow standard international PF practices, a distinguishing feature of small- to mid-scale projects is that they are often financed on a limited-recourse basis with supplemental credit support from the sponsors, such as additional equity injections or subordinated loans.

The project finance documentation generally consists of a loan agreement and security documents. As conditions precedent to first drawdown, lenders require the execution of an EPC contract, an O&M agreement and either a long-term fixed-price REC contract or a power purchase agreement (PPA), all in line with lender guidelines. In addition, EPC contractors and O&M operators are often required to provide side undertakings to ensure step-in rights for lenders.

The security package typically includes pledges over the borrower's deposit accounts and insurance proceeds, mortgages over real property, security interests over movable assets (sometimes structured as factory mortgages or security trusts over both real and movable property) and assignments or pledges of receivables arising from electricity and

REC sales. A distinctive Korean practice is the requirement that EPC contractors provide a completion guarantee: a contractual undertaking to complete the project within agreed time and cost parameters, backed by an obligation to indemnify lenders for losses up to the outstanding debt if completion fails. For solar projects, EPC and O&M contractors are often required to guarantee a minimum generation level and efficiency during the loan term. For wind projects, in addition to turbine manufacturer availability warranties, EPC and O&M contractors may also provide overlapping availability guarantees and, in rare cases, even short-term generation guarantees during the initial operation period. These requirements effectively transfer construction and generation risks to creditworthy contractors and operators, allowing lenders to indirectly secure repayment obligations. Consequently, Korean lenders prefer counterparties with strong credit ratings, and some institutions impose minimum credit rating requirements.

Finally, in the case of offshore wind projects – whose capital expenditure often reaches into the trillions of Korean won – there has been a marked increase in interest and participation from international financial institutions. Given that offshore wind in Korea remains at an early stage, a growing influx of foreign capital is expected in the coming years.

Power purchase

In principle, all electricity in Korea is traded through the power market, and renewable energy is no exception. As sellers, generation companies participate in the market, while as buyers, the Korea Electric Power Corporation (KEPCO) and electricity consumers above a certain consumption threshold are eligible to participate. Transactions in the power market are conducted on a multilateral basis rather than through 1:1 matching, meaning that a particular buyer does not acquire a direct contractual relationship with a particular renewable generator through the market.

However, a Power Purchase Agreement (PPA) regime has recently been introduced, allowing renewable energy to be traded outside the market. The scope of eligible renewable energy sources is limited (solar and wind are included), and the buyer's qualifications are also restricted. Nevertheless, with the growing number of RE100 participants in Korea, PPA-based renewable energy transactions have been steadily increasing.

When renewable energy is traded through the power market, the generator can receive Renewable Energy Certificates (RECs). By contrast, no REC is issued for renewable energy supplied directly to end-users under a PPA. RECs are typically traded over-the-counter (OTC), though a spot market also exists. Under law, there are two distinct spot markets: one in which entities subject to Renewable Portfolio Standard (RPS) obligations (e.g., fossil fuel generators) participate, and another in which electricity consumers may participate.

There are two types of PPAs. The first is the third-party PPA, where KEPCO intermediates the transaction, and the second is the direct PPA, in which the generator and the end-user transact directly. A notable feature of direct PPAs in Korea is that, in practice, an intermediary often exists – a renewable energy supplier – that purchases electricity from the generator and resells it to the end-user. While a generator may itself act as the supplier, in most cases, a third-party company plays this role. In project finance transactions involving direct PPAs, lenders closely assess the creditworthiness of the Renewable Energy Supplier, since the risk of default by the electricity consumer is typically shifted onto the supplier.

Traditionally, corporate PPAs were primarily motivated by companies' desire to achieve RE100 targets. More recently, however, the sharp increase in wholesale electricity prices has led to growing demand for long-term fixed-price PPAs, as companies seek to hedge against future electricity cost volatility while securing renewable energy supply.

Non-project finance development

In Korea, renewable energy projects are also developed through a variety of structures outside the project finance (PF) model. Major non-PF approaches include community participation models, self-funding structures and government-supported programmes.

Community participation models take several forms – such as cooperative, equity-based, bond-based, fund-based, direct participation and profit-sharing schemes. In the cooperative model, local residents pool capital to establish a cooperative that directly develops and operates a renewable energy project. A well-known example is the *Ansan Citizens' Solar Cooperative*. Fund-based and bond-based structures are indirect investment models: while residents do not hold equity in the project, they invest by purchasing bonds or units issued by the developer and receive a fixed return over a specified period. The *Taebaek Gadeoksan Wind Farm*, in which 255 local residents participated through bond purchases, is a representative case.

In addition, many small- and medium-scale solar PV projects are financed through secured loans provided by local bank branches. These projects often obtain bridge financing during the development stage, but instead of refinancing through project finance at completion, they secure long-term funding via facility-secured loans from retail banks.

Distributed and residential renewable energy

Korea's distributed energy sector has entered a new phase with the enactment of the Distributed Energy Act in 2023 and the rollout of its implementing regulations in late 2024. For the first time, the legal framework explicitly defines obligations for 'mandatory installers' such as large industrial facilities, data centres and commercial buildings. These entities must now prepare detailed distributed energy installation plans, calculate obligations based on usage and capacity factors and file them with the Korea Energy Agency. Non-compliance carries significant monetary penalties, up to 150 per cent of the avoided installation costs, creating a more enforceable system than the earlier, largely voluntary regime.

This legal shift is complemented by technology policies and regional pilot projects. The government has supported industrial leaders in accelerating deployment, with Doosan launching mass production of solid oxide fuel cells in 2025 to serve distributed generation markets. Meanwhile, the Ulsan Green Hydrogen Town initiative shows how distributed generation law is being implemented in practice, combining hydrogen-powered combined heat and power units, underground pipeline networks and fuelling infrastructure for mobility into a cohesive local energy system.

At the statutory level, distributed energy policy sits alongside two important pre-existing frameworks. The Electricity Utility Act remains the central statute governing licensing of

generation businesses, the role of KEPCO as the monopoly transmission and distribution operator, and the rules for wholesale and retail power transactions. This framework has historically favoured centralised power plants, and its limitations on direct power purchase agreements continue to constrain the scale of distributed generation. By contrast, the Smart Grid Act provides a legal foundation for integrating new technologies – such as demand response platforms, distributed generation interconnection, and consumer participation in 'prosumer' markets – into Korea's grid. Together with the Distributed Energy Act, these statutes now create a layered legal regime: one that both enables small-scale, localised power production and still channels it through the broader electricity market structure.

Despite these advances, structural challenges persist. Transmission and distribution expansion has lagged far behind renewable capacity growth, creating bottlenecks that limit the effectiveness of the new distributed energy obligations. Local opposition to grid infrastructure and frequent shifts in energy policy between administrations add further uncertainty.

Overall, Korea's recent reforms mark a significant turning point: distributed energy is no longer a matter of policy encouragement but of statutory obligation. The challenge now lies in harmonising the Distributed Energy Act with the older frameworks of the Electricity Utility Act and the Smart Grid Act, so that decentralised power becomes a mainstream and durable feature of Korea's energy landscape.

Renewable energy supply chains

A recent policy trend in Korea has been to reinforce domestic manufacturing capacity for wind turbines and solar panels. In the wind sector, Doosan Enerbility and major shipbuilding groups have entered offshore turbine production, supported by the government's industrial policy to localise the supply chain. Importantly, in renewable energy auctions for wind power generation, the government has begun to favour bids that commit to higher shares of domestically manufactured equipment, effectively using auction rules to incentivise local content. While Korea still relies heavily on European technologies for large-scale offshore wind, this auction design signals a deliberate attempt to nurture a competitive domestic turbine industry.

In the solar sector, Hanwha Qcells continues to anchor Korea's photovoltaic industry, supplying both domestic and international markets. The government has framed solar manufacturing as a strategic industry, with incentives under the Act on Special Measures for the Promotion of New and Renewable Energy (2004, as amended) designed to stabilise supply chains.

Nevertheless, Korean manufacturers face growing competition from low-cost Chinese products, which dominate utility-scale projects on price grounds. This tension has sharpened policy debates on whether procurement and subsidy measures should be further strengthened to ensure that Korea's renewable energy expansion also secures a sustainable industrial base at home.

Special considerations

More emphasis on ESS: energy storage has rapidly become a cornerstone of Korea's renewable energy transition, bridging the gap between fluctuating renewable generation and the country's growing demand for grid stability. In 2025, the government launched its first ESS Central Contract Market auction, offering 540 megawatts of storage capacity across both the mainland and Jeju Island. What makes this development especially significant is the introduction of long-term, 15-year contracts administered by the Korea Power Exchange (KPX). For the first time, investors and operators can expect predictable revenue streams over a sustained horizon, a major improvement compared to the short-term REC-driven incentives that had previously dominated the sector.

The new framework comes with stricter technical and operational standards, reflecting the lessons learned from earlier ESS deployments, where overheating incidents and uneven grid integration raised safety and reliability concerns. By tying capacity commitments to longer contracts, regulators are signalling a shift toward viewing ESS not as an auxiliary technology, but as a core infrastructure asset for the national grid.

This policy move coincides with growing private-sector activity. SK On, one of Korea's leading battery manufacturers, recently signed a supply deal with US-based Flatiron Energy to deliver up to 7.2GWh of LFP (lithium iron phosphate) batteries between 2026 and 2030. In preparation, SK On announced it will begin mass production of LFP batteries in 2026 and retrofit part of its Georgia EV battery plant to serve the ESS market. This pivot underscores how storage is increasingly seen as a global growth engine, distinct from the electric vehicle sector, but benefiting from the same scale advantages in battery production.

Taken together, these developments illustrate how Korea's ESS market is evolving from an experimental phase into a mature, policy-anchored ecosystem. With clear government backing, long-term contractual structures and industrial alignment from national champions like SK On, Korea is positioning itself to become a regional leader in storage technology and deployment. Just as the country once turned semiconductors and shipbuilding into global success stories, ESS may well emerge as Korea's next strategic export industry – while simultaneously stabilising its domestic power grid and accelerating the penetration of wind and solar.

Change in governmental organisation: Korea is currently debating the creation of a new Environment and Energy Department under the umbrella of the existing Ministry of Environment, aimed at integrating climate, environmental and energy policy functions while leaving nuclear export and resource-security matters with the Ministry of Trade, Industry and Energy. The proposal seeks to strengthen governance and implementation capacity for carbon neutrality and green growth, including reorganisation of climate committees and consolidation of climate finance functions. While the reform is presented as a way to streamline policy coherence, concerns remain over potential tension between environmental regulation and industrial promotion, the division of energy security roles and possible risks to industrial competitiveness.

Outlook and conclusions

South Korea's renewable energy sector is at an inflection point. Over the past decade, growth was driven largely by solar PV installations and the Renewable Portfolio Standard,

but the market has now broadened significantly. Offshore wind, energy storage, green hydrogen and zero-energy building policies have begun to reshape both the investment landscape and the regulatory order. The enactment of the Special Act on Offshore Wind, the launch of the ESS Central Contract Market and the government's preference for domestically manufactured equipment in auctions all reflect a shift toward a more structured, policy-anchored framework. At the same time, regulatory tightening – particularly in safety, permitting and grid connection – underscores the government's intention to embed renewables within a legally robust and industrially competitive system.

Endnotes

1 In the case of small-scale power generation projects (with a facility capacity of 3MW or less), a considerable number of permits and approvals related to land development – such as a development activity permit under the National Land Planning and Utilization Act, a public water surface use permit under the Public Waters Management and Reclamation Act, and a farmland conversion permit under the Farmland Act – are deemed to have been granted by virtue of the power generation business license (Electric Utility Act, Article 7-3). ^ Back to section

2 This is evidenced by KEPCO executing an electricity equipment use agreement for transmission with a project SPC. ^ Back to section

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