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° Issue Brief



2026 South Korea's Renewable Push

Barriers Eased, Key Decisions Pending

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Barriers Eased, Key Decisions Pending

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Solutions for Our Climate (SFOC) is an independent policy research and advocacy group that aims to make emissions trajectories across Asia compatible with the Paris Agreement 1.5°C warming target.

Background

In April 2026, Korea set out a target of 100GW of renewable capacity by 2030, reaffirmed in May in the First Renewable Energy Basic Plan (87GW solar, 9GW wind). The gap with current capacity is wide. Installed capacity reached about 41GW in October 2026, which means Korea must add roughly 59GW in just over four years.

To close that gap, the government has moved from setting the target to addressing three bottlenecks that have held back deployment: coal's place in the power system, grid access for renewables, and access to land for agrivoltaics.

1. Draft Coal Phase-out Roadmap

Bottom line: The draft sets retirement dates for 60 coal units by 2040, but names a replacement for only 39 of them, and 27 switch to gas.

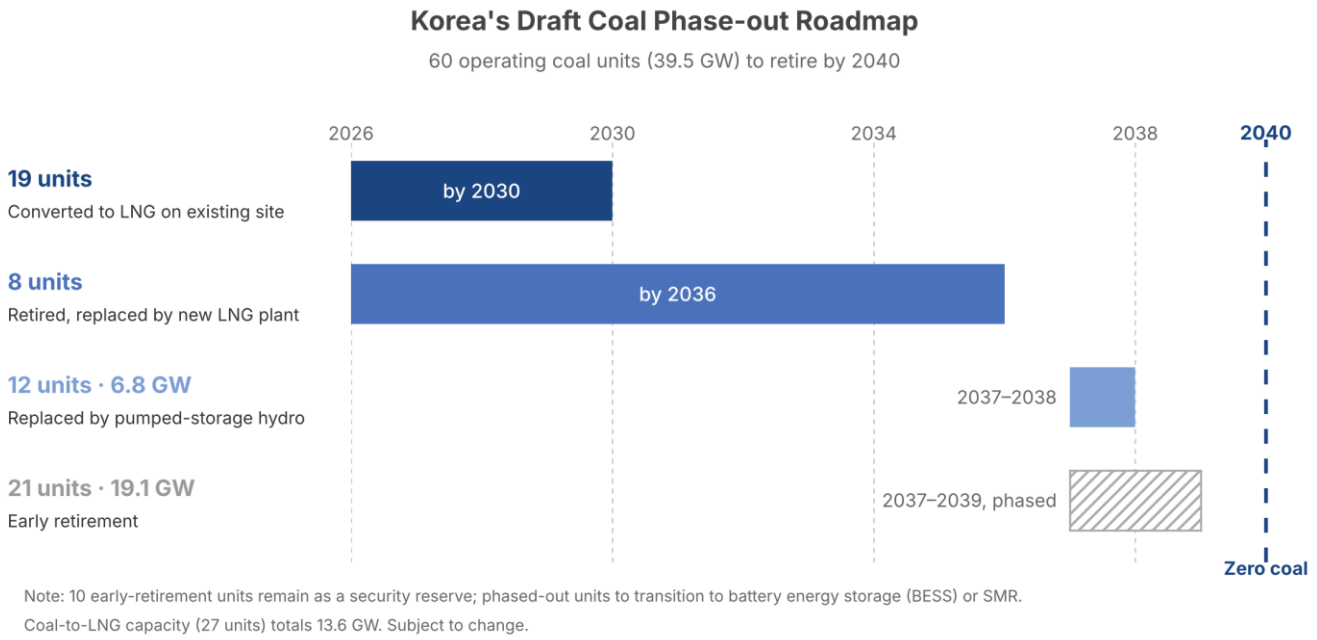
At COP30 in Belém (November 2025), Korea pledged to phase out coal by 2040 and became the first East Asian country to join the Powering Past Coal Alliance. Building on that pledge, the government released a draft coal phase-out roadmap on 18 September 2026, extending the 2040 deadline to all 60 operating coal-fired units, along three tracks:

Track	Units	Capacity	What happens
Coal to LNG	27	13.6 GW	Replaced by LNG by 2036: 19 units converted at their existing sites by 2030, and 8 retired and replaced by new LNG plants by 2036
Coal to pumped storage	12	6.8 GW	Retired in 2037–2038 and replaced by pumped-storage hydropower instead of LNG
Early retirement	21	19.1 GW	Retired in 2037–2039, earlier than their original plan to run past 2040 (*10 units remain as security reserve; phased-out coal units to be transitioned to battery energy storage systems (BESS) or SMR)

While the first two tracks name an alternative, the draft offers no concrete replacement for the remaining 21 units, only the option to retire them early.

The government is also considering keeping **up to 10 of these 21 units as a security reserve**. These units would sit outside the normal electricity market and restart only in emergencies, such as extreme supply shortages, low renewable output, LNG supply disruptions, or fuel price shocks.

[Figure 1] South Korea's Draft Coal Phaseout Roadmap



Source: SFOC image based on Ministry of Climate Energy and Environment Coal Phaseout Draft Roadmap Press Release

Why Early Retirement Is Hard

Of the 60 units, 39 reach the end of their 30-year design life before 2040. **The other 21 would still be within it, so retiring those 21 early would leave their owners with stranded assets**: investments that can no longer earn their expected return.

Of these 21 units, 13 are owned by Korea's public power generation companies (GENCOs), subsidiaries of the state utility KEPCO. As public companies, their retirement or conversion is easier to steer through policy. Yet these plants are also shielded by capacity payments and cost-recovery mechanisms that overcompensate fossil fuels, which weakens the pressure to close them.

The other 8 are privately owned and located mostly on the East Coast. They already run at around 20%~30% utilization. Under Korea's cost-based compensation system, plants recover their costs through energy and capacity payments. At such low utilization rates, these operators struggle to recover their investment even without early closure. With complex stakeholder interests at play, a range of retirement options is likely to be considered for these private units. Their situation also reflects a lack of market competition and rigid power plant planning.

What The Final Roadmap Must Address

Analysis of social costs suggests that helping operators move into clean energy businesses may be more cost-effective than paying them to keep owning coal assets. The reliability role of a

security reserve could also be filled by BESS or synchronous condensers rather than by coal units on standby.

The draft's heavy reliance on LNG has also drawn concern. Replacing coal with gas keeps Korea dependent on fossil fuels and locks in continued greenhouse gas emissions, undercutting the very purpose of a coal phase-out.

The final roadmap, with more detailed measures and incentives, is expected by the end of 2026 or in early 2027.

2. Lifting Grid Connection Restriction in Renewable-Rich Southwest

Bottom line: The Power Grid Innovation Plan reopens Southwest (hereafter Honam) region to new renewables and could raise national renewable capacity substantially by 2030, mainly by changing how the existing grid is allocated rather than building new lines.

Since 2024, connections at 205 substations designated as "grid-management substations", 164 of them in Honam (the Southwest region covering Gwangju and the Jeolla provinces), had been restricted until 2031 or later. As of May 2026, 32.5 GW of solar and wind projects nationwide are in the grid connection queue.

On September 29, the Ministry of Climate, Energy and Environment (MCEE) announced the Power Grid Innovation Plan aimed at making better use of the existing grid. By 2030, the plan is expected to increase Korea's renewable hosting capacity from 119GW to 171GW at the transmission level and from 84GW to 110GW at the distribution level. In Honam, transmission-level capacity is expected to rise from around 37GW to 64GW, while distribution-level capacity will increase from 18GW to 30GW.

As part of the plan, the government lifted the grid-management substation designation across Honam on October 1, formally ending the blanket restrictions introduced in 2024, which were set to remain until 2031 or later. Projects already in the connection queue will be considered first, while applications for new projects are scheduled to reopen in January 2027.

The government is also freeing up grid capacity that has been reserved but left unused. Authorities have already recovered 9GW of connection rights from speculative or inactive projects.

Flexibility Resources as Clean Energy Pathway

Rather than relying only on new transmission lines, the government now treats energy storage as a way to fit more renewables onto the grid. By 2030, distribution-grid ESS is expected to enable an additional 3GW of solar connections, while substation-level ESS will enable another 1.6GW. The combined 4.6GW refers to additional solar connection capacity, not the installed capacity of the storage systems themselves.

The plan also changes the assumptions used in grid-connection assessments. Previously, studies assumed that existing coal and LNG plants would generate before new renewable projects. Under the revised approach, renewables are assumed to generate ahead of fossil-fuel plants that are not required to run. The government estimates that this could create room for an additional 20GW of renewable capacity nationwide by 2030, including in Yeongnam (Southeastern) and Gangwon (Northeastern), where fossil-fuel plants are concentrated.

These revised connection rules should gradually support renewable deployment and the wider energy transition.

Honam Grid Optimization Is Just a Start

Redesigning the Honam grid and giving renewables priority access removes a major barrier, but it does not solve the integration challenge on its own:

- **Curtailment:** Flexible connection allows more projects to connect, but their output may be curtailed when local grid limits are reached. Transparent rules on when, how often and in what order projects are curtailed will be important for developers to assess risks and secure financing.
- **Fossil-fuel minimum generation:** Minimum-generation and must-run requirements for conventional power plants can reduce the operational space available for renewables. Reviewing these standards will largely determine how much room renewables are granted on the grid.
- **Flexibility resources:** The government plans to expand BESS capacity to more than 12GW by 2030, marking a significant step toward integrating more renewables. Translating this ambition into a detailed implementation pathway will be the next priority.

This measure is real progress, but it will not be sufficient on their own to integrate 100GW of renewables into the grid. **Further reforms at both the regional and national levels will be needed to support deployment at that scale.**

3. Agrivoltaics Act

Bottom line: The Act gives farmland solar a dedicated legal basis and much longer permits, but its contribution to the 100GW target depends on local zoning decisions and size limits that are not yet set.

Agrivoltaics mounts solar panels above crops so that farming continues on the land below. For a land-constrained country like Korea, farmland is one of the largest untapped sites for solar. Under the First Renewable Energy Basic Plan, 44.2GW of new solar by 2030, with four site types prioritized: industrial complex and factory rooftops, agrivoltaics, floating solar, and roads and railways. The Global Solar Council estimates that just 1% of the world's agricultural land could, in theory, host about 33TW of solar capacity.

The New Law in a Nutshell

The Act on the Promotion and Support of Agrivoltaic Power Projects, Korea's first law dedicated to agrivoltaics, passed the National Assembly on 7 May 2026 and takes effect on 17 December, 2026. It is a **special act**, meaning it prevails over other laws where they conflict. A draft enforcement decree, which sets out how the law works in practice, was released for public comment on 16 September 2026. Together they set the following rules:

- **Who can develop projects:** General developers and investors are excluded, so the benefits stay within farming communities. Only three groups are eligible: (1) local farmers with at least three years each of residence and farming (waived for young farmers), (2) resident cooperatives of at least ten members, each of whom has lived in the same area for at least one year; and (3) agricultural corporations, limited to farming cooperative corporations and, for projects on state-managed reclaimed land, agricultural company corporations.
- **Where projects can go:** Farmland outside Agricultural Promotion Zones, Korea's core protected farmland, or farmland designated as a renewable energy zone under the Act on Rural Spatial Restructuring and Regeneration Support.
- **How long permits last:** The Act allows for up to 23 years in total, with an initial 5-year permit that can be renewed up to six times for 3 years each. Operators must keep farming every year under their farming plan.
- **How large projects can be:** Local governments may limit a project's land area and generating capacity.

What It Means for the 100GW Target

The Act gives farmland agrivoltaics clear legal basis for the first time. However, a legal basis alone does not guarantee deployment on the ground. Two implementation questions will decide how much new capacity follows:

- **Renewable energy zone designation:** Inside Agricultural Promotion Zones, projects can only be built on land that local governments designate as renewable energy zones, yet it is unclear how willing local governments are to do so. Without active designation, eligible farmers will have few places to build within these zones.
- **Project size:** The draft decree lists factors local governments should weigh when limiting project size, from farm scale and crop shading to grid availability and residents' views. It does not set concrete thresholds, and the Ministry of Agriculture, Food and Rural Affairs may still issue detailed standards. Without them, limits could vary widely between regions, creating uncertainty and slowing deployment.

Agrivoltaics now has a legal route onto Korean farmland. Whether it delivers for farmers and for the 100GW target will depend on how actively local governments and ministries put it to use.

Want to check Korea's Solar Potential? ***Korea Solar Map***

Conclusion: The Bottlenecks are Easing, but the Implementation Remains Unclear

Taken together, these announcements point to a shift in Korea's approach to renewables. The government is moving from setting targets to implementing them, removing structural bottlenecks that have held back deployment for years.

On October 7, the government also announced the K-GX strategy, a ten-year framework to mobilize KRW 1,000 trillion to decarbonize steel, petrochemicals, cement, refining and semiconductors. Although it focuses on these hard-to-abate sectors, K-GX also brings energy reform targets under one national framework. It reaffirms the 100GW renewables target for 2030 (87GW solar, 9GW wind) and commits to building a West Coast transmission line by 2030. At the same time, its industrial plans, from hydrogen-based steelmaking to electrified naphtha cracking, are projected to add significant electricity demand.

That demand must be reflected in the 12th Basic Plan for Electricity Supply and Demand, a key policy document expected in December 2026 or early 2027. It will set Korea's energy mix for 2026–2040. The draft is now scheduled for December or early January and should include a new demand forecast covering major semiconductor and industrial clusters, including the Yongin semiconductor mega-cluster and Honam mega-cluster.

The government is moving in the right direction, but direction is not delivery.

As electricity demand grows and coal plants retire, **the key question is what fills the gap.** If Korea trades one fossil fuel dependency for another, it will clear today's bottlenecks only to miss the broader goal of the energy transition. The 12th Basic Plan is the government's opportunity to put renewable energy at the center of Korea's energy future, with a credible pathway to 100GW of renewables by 2030.

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