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Offshore wind a safe bet for Japan, South Korea, and Taiwan

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Introduction

Key points

- The share of offshore wind in the total renewable energy pipeline across Japan, South Korea, and Taiwan is 84%, compared to the global average of just 21%, totaling 82 GW.
- The three markets represent 8% of the global offshore wind pipeline, and 2026 policy reforms across the three markets signal the region's growth opportunity.
- Japan, South Korea, and Taiwan aim to scale up offshore wind to more than 30 GW across the region by 2030. Market readiness is needed now to meet these goals.

Japan, South Korea, and Taiwan are reshaping their energy strategies to align energy security priorities with renewable energy sources, including offshore wind targets of 10 GW, 10.5 GW, and 10.9 GW respectively by 2030.

The three markets have put considerable stake in the success of offshore wind development, with over 84% (82 GW) of all prospective renewable energy capacity[1] (98 GW) in the pipeline planned to come from offshore wind, equivalent to USD 381 billion,[2] according to the latest data in Global Energy Monitor's (GEM) Global Wind Power Tracker. This reliance is striking compared to the global average, where offshore wind only accounts for 21% of prospective renewable capacity.

[1] Renewable energy includes utility-scale solar capacity data from Global Energy Monitor's Global Solar Power Tracker and utility-scale wind capacity data from Global Energy Monitor's Global Wind Power Tracker.
[2] Capital Expenditure (CAPEX) value calculated on $5.7 billion/GW in Japan; $4.6 billion/GW in South Korea; $2.3 billion/GW 2024 global average assumption in Taiwan, applied to prospective offshore wind capacity (GW) per country.

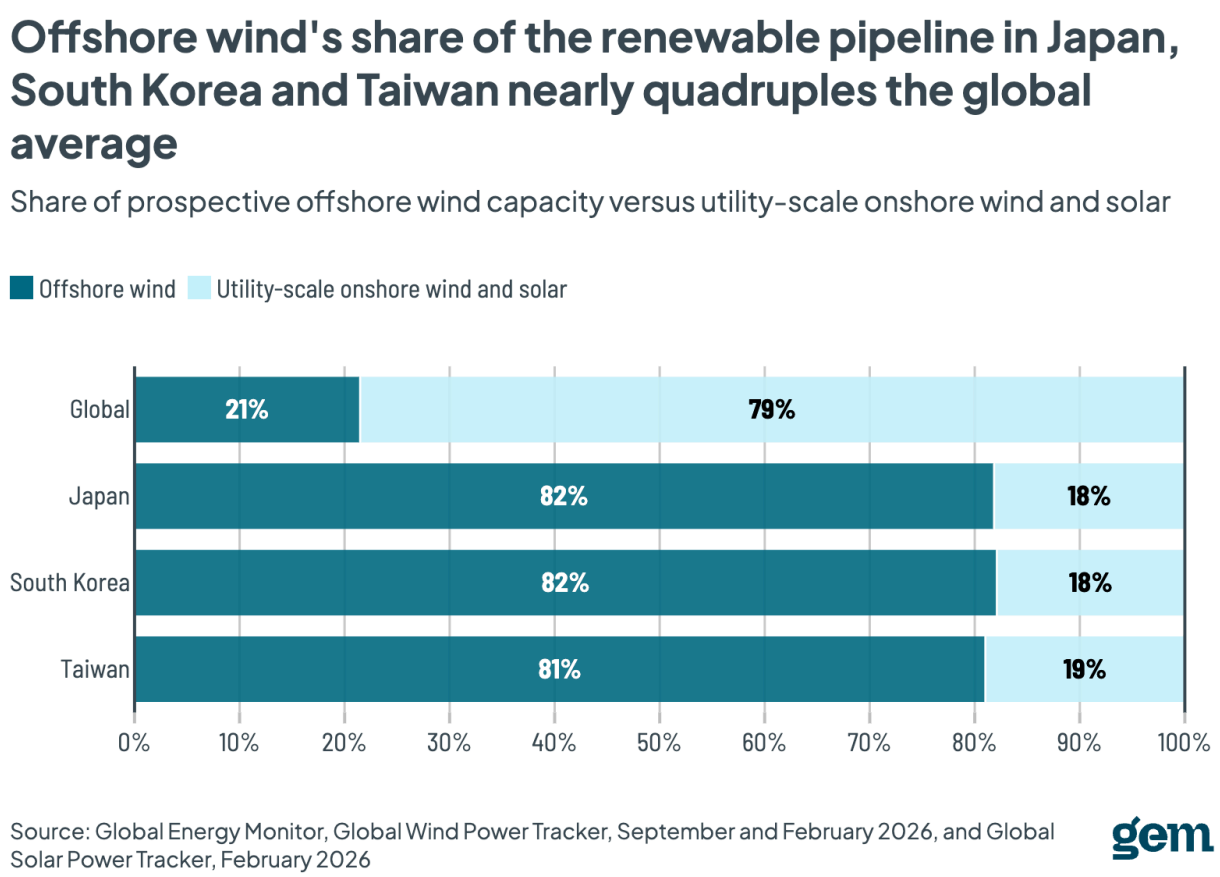


Figure 1

Nevertheless, the scale of these ambitions contrasts sharply with the readiness of the three countries' offshore wind markets, as the three markets are still wrestling with the growing pains of this emerging industry. The countries in the region have the opportunity to reform their energy policies to enable offshore wind and reach 2030 goals.

Energy security is driving offshore wind ambitions

The U.S.-Israel war in Iran has exposed weaknesses in the three markets' energy security and drawn attention to an over-reliance on energy imports. As of 2024, 80% of Japan's

energy comes from fossil fuels, of which 90% is imported, while the Middle East alone accounts for 95% of its crude oil imports. In South Korea, fossil fuels account for 79% of its energy use, and virtually all of it is imported, making the country vulnerable to inflation on imported fuel prices. In Taiwan, 94% of its energy demand is met by imported fossil fuels, with the Middle East supplying 70% of its oil and 34% of its liquefied natural gas (LNG). Each country is currently reevaluating its energy system amid volatility and external energy risks.

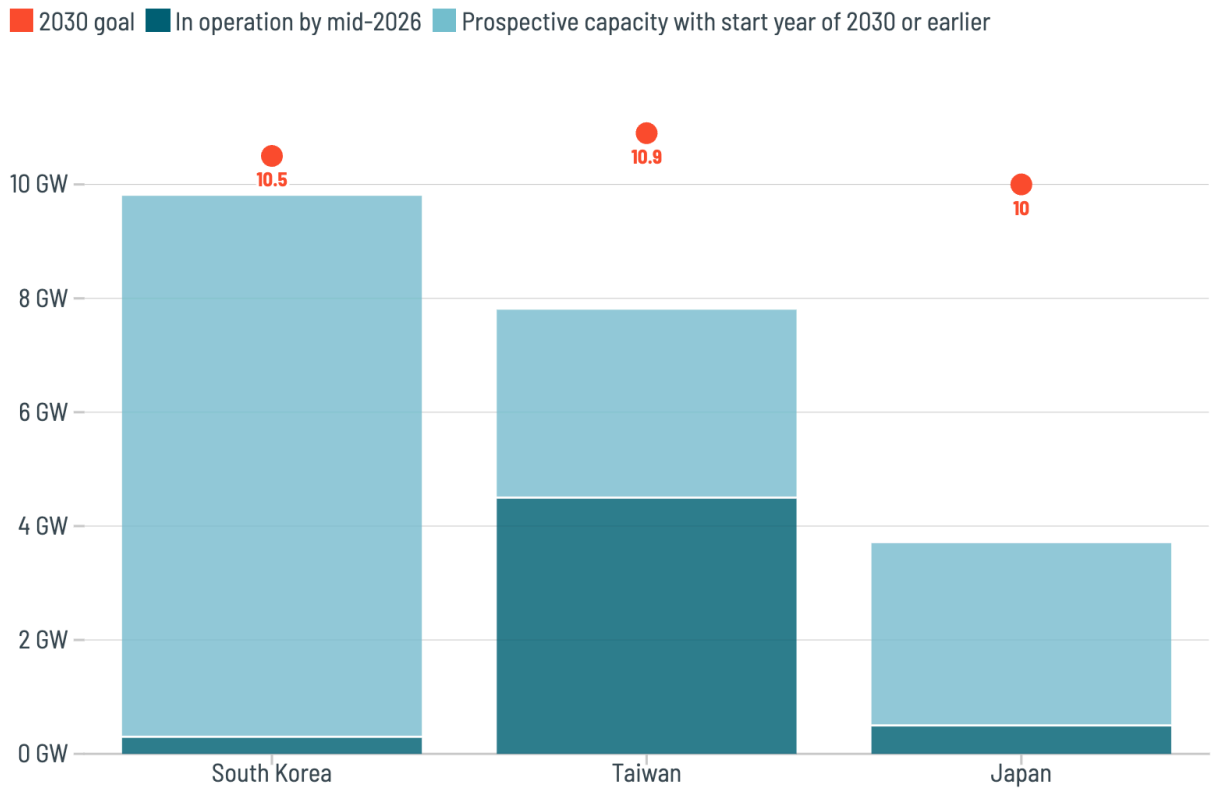
As of October 2026, Japan, South Korea, and Taiwan initiated policy changes to absorb the shock of the war on their energy systems. According to GEM's Global Nuclear Power Tracker, with 6.1 GW of nuclear energy capacity currently under construction, Japan is making plans to reduce dependence on fossil fuels. This summer, South Korea unveiled a 100 GW renewable energy target that could triple the country's installed base and halve its annual fossil fuel bill, complementing South Korea's commitment to no new unabated coal and coal phase-out plans made last year. Meanwhile, Taiwan's government is freezing oil and electricity prices to stabilize its export-oriented economy in response to the prolonged conflict.

Ambitions remain high, despite headwinds in offshore wind market

Given the urgency of decarbonization and energy independence in these markets, policy reforms are positioning offshore wind as essential in this transition. Japan currently has roughly 0.5 GW of offshore wind in operation. As of September 2026, Japan has about 27 GW of offshore wind in the development pipeline, around 3 GW of which has a start date between 2026 and 2030. Japan aims to have 10 GW of offshore wind in operation or under construction by 2030, but several high-profile project cancellations suggest a nascent offshore wind market still finding its footing. In order to meet these goals, Japan must continue to support projects in its pipeline as they move through to construction, as 68% of Japan's prospective project capacity remains in the announcement phase.

Progress towards 2030 offshore wind goals in South Korea, Japan and Taiwan

Operating and prospective capacity compared to 2030 offshore wind capacity goal, in gigawatts (GW)



Source: Global Energy Monitor, Global Wind Power Tracker, September 2026
Note: Japan and South Korea 2030 offshore wind capacity goals are both described as 'operational or under construction,' whereas Taiwan's 2030 offshore wind goal is for capacity 'in operation' by 2030.

Figure 2

South Korea pursues a goal similar to Japan's offshore wind contribution to its overall renewable energy goals, aiming to bring 10.5 GW into either operation or construction by 2030. South Korea has five projects larger than 10 MW, sharing 0.3 GW of operating offshore, and roughly 44 GW of prospective capacity waiting in the wings. Nearly 80% (35

GW) of South Korea's prospective capacity is pre-construction, and 1 GW is under construction, indicating that projects are working their way through financing and governmental regulation. South Korea's Offshore Wind Power Act came into effect in March, establishing a government-led system to reduce risks and uncertainties in site identification, permitting, and licensing, along with an announcement of seven designated clusters. In June 2026, the Ministry of Climate, Energy and Environment released its first-ever ten-year offshore wind bidding roadmap (2026–2035), planning to auction 55 GW between 2026 and 2035 with annual tenders of four to seven GW. Around 9.5 GW of capacity has secured a start date by 2030, demonstrating developer commitment, while 1 GW is currently under construction. These developments indicate that South Korea could meet its offshore wind goal by 2030, if the policy and development conditions align.

By 2025, Taiwan had the fifth-largest operating offshore wind capacity in the world, and now has an installed capacity of 4.5 GW as of mid-2026 — the largest fleet in these markets. GEM data shows an additional 1.3 GW under construction, placing it among the top five globally for capacity under construction. Taiwan aims to have 10.9 GW offshore wind capacity in operation by 2030 and build a confident floating offshore wind market, which is envisioned to support Taiwan's energy roadmap of 18 GW by 2035 and between 40 and 55 GW by 2050. Yet Taiwan missed its 2025 offshore wind target of 5.6 GW. Of Taiwan's 11 GW offshore wind pipeline, 1.3 GW is under construction and 1.9 GW is in pre-construction. If the combined 3.3 GW planned for 2030 becomes operational as planned, its total operating offshore wind capacity would reach 7.8 GW, missing its 2030 target of 10.9 GW. The deployment of offshore wind in Taiwan is critical to close the renewable gap over the next three years.

A crossroads for offshore wind

Japan, South Korea, and Taiwan are all home to offshore wind markets that can be key to their energy transition, but concerted effort and investment must go into supporting the industry to actualize its potential. Globally, the levelized cost of electricity (LCOE) for offshore wind is stabilizing year over year — making it cost-competitive with new gas — and LCOE rates are expected to decline substantially by 2060. Though global rates are proving the efficacy of offshore wind, it is a capital-intensive technology, and financing costs can vary significantly in burgeoning markets. For instance, CAPEX for offshore wind is a limiting

factor for growth in South Korea. The Ministry of Climate, Energy and Environment of South Korea estimated that upfront costs make up over 70% of offshore wind projects' total costs. In Japan, offshore wind CAPEX remains high, at nearly twice the level of the European market, reflecting limited domestic supply chains and economies of scale. High CAPEX costs can be attributed to construction, raw materials, and connection, but lowering market uncertainty with effective policy design can help mitigate unexpected cost escalation. Similarly, Taiwan's prior localization mandates significantly increased developers' overall costs caused by supply chain bottlenecks and the retreat of international developers. The immediate task across the three markets is to lower the cost of mobilizing capital before operations begin by creating a developer-friendly investment environment with market predictability, low regulatory risks, and forefront secured grid, port, and vessel solutions.

There is a clear appetite for offshore wind in these markets. Japan is actively assessing offshore wind promotional zone designations. Taiwan's removal of zero-price bids and easing of localization requirements in its newly released auction rules address previous deal-breakers in bankability; the country is also formalizing a rezoning initiative to expand offshore wind development areas. South Korea's shared grid connection model for offshore wind farms is a promising approach to reducing offshore wind integration and operating costs by lowering power generation and upfront investment costs in establishing substations through shared transmission lines. The three markets' offshore wind sectors are in a moment of change, where further policy and developer support can mobilize the offshore wind market as a means to increase energy independence in the region.

About the Global Wind Power Tracker

The Global Wind Power Tracker is a worldwide dataset of utility-scale, on- and offshore wind facilities. It includes wind farm phases with capacities of 10 megawatts (MW) or more. The most recent tracker release, published in February 2026, includes more than 33,000 wind farm phases encompassing nearly 4,600 GW of prospective and operational capacity. Utility-scale offshore wind data for Japan, South Korea and Taiwan, as of September 2026 is available here [Available 8 October 2026].

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