



Recurring Crisis, Deferred Transition:

From Fossil Fuel Dependence to Energy Independence

Returning Crisis, Deferred Transition: From Fossil Fuel Dependence to Energy Independence

How the Hormuz blockade exposed the structural limits of fossil fuel dependence in Korea and Japan — and why public finance must shift toward renewables

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Key Findings

- The 2026 Hormuz blockade began with physical obstruction but it was the collapse of war risk insurance that caused the near-total shutdown: 7 of 12 P&I clubs (war risk insurance providers) cancelled coverage within 72 hours, collapsing strait transits by 81%.
- Korea and Japan are among the world's most fossil fuel import-dependent economies: 70% and 90%+ of crude oil imports respectively originate in the Middle East.
- In 2022, Korea's LNG spending nearly doubled (+96.5%) while demand barely changed (+0.9%). Japan's spending surged 65% even as demand fell.
- Korea and Japan have directed \$166 billion more in public finance to fossil fuels than to renewables over the past eleven years — capital that, redirected to solar, could have generated \$500 billion in avoided fuel costs over 25 years: three times the original investment.
- Korea builds 74% of the world's LNG carriers. UCL identifies Korea as the country most exposed to stranded asset risk in shipping finance. The transition to offshore wind vessels represents a \$21-26 billion immediate market opportunity.

1. The Hormuz Blockade: A Familiar Script

Recent escalating tensions in the Middle East have once again disrupted the Strait of Hormuz, a narrow maritime chokepoint through which approximately 20% of the world's oil supply and significant volumes of LNG transit daily. For Korea and Japan — two of the world's most energy import-dependent economies — the crisis has immediate and severe implications.

When the US and Israel launched coordinated strikes on Iran on February 28, 2026, markets were sent into turmoil. Within the first week, WTI crude oil price surged above \$116, the Asian LNG benchmark (JKM) jumped 69% to \$25.39/MMBtu, the KOSPI (Korea's stock market index) fell 12.06%, and the Korean won breached ₩1,500 to the dollar, and

the Japanese yen weakened past ¥157 to the dollar — its lowest level in months — as both countries' oil and LNG import dependence weighed heavily on the currency.

This pattern is not new. Similar shocks followed the 1973 oil crisis, the 1990 Gulf War, the 2019 Saudi attacks, the 2022 Russia-Ukraine war, and the 2023 Red Sea crisis. Each demonstrates the same structural vulnerability: when geopolitical shocks occur, global fossil fuel markets react instantly, and importing economies bear the cost.

How the Strait Was Shut Systematically by Insurance

The 2026 Hormuz blockade was achieved not primarily through physical obstruction, but through the withdrawal of the financial infrastructure that global shipping depends on. Within 72 hours of the strikes, seven of the world's twelve Protection & Indemnity (P&I) clubs — the mutual insurers covering about 90% of the global merchant fleet — cancelled war risk coverage for the Persian Gulf and Strait of Hormuz.

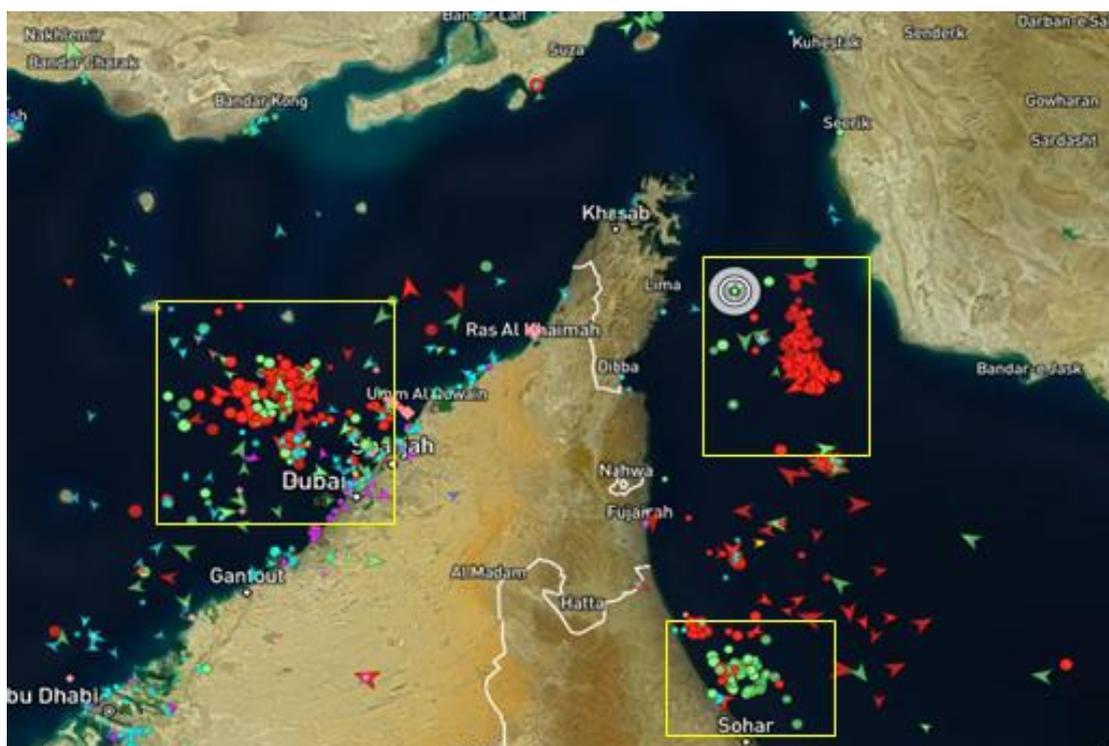


Image source: Marine Traffic, 150+ vessels are waiting around the strait

The effect was immediate: strait transits collapsed 81%, from approximately 77 daily crossings to just 4 by March 3. **Zero LNG carriers passed through on March 1.** Over 150

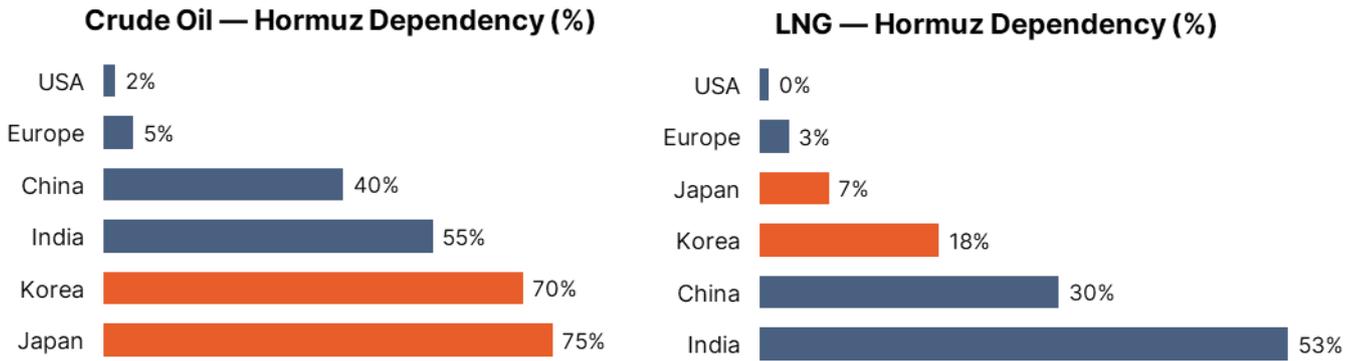
vessels were holding positions more than 12 nautical miles offshore - anchoring or idling just outside the war risk premium counting zone, waiting until the last possible moment before berthing to avoid triggering the higher rate tiers that apply once a vessel enters the designated zone. War risk premiums surged from 0.25% to 3% of hull value: for a large crude tanker valued between \$200-300 million, that translates to a per-voyage insurance cost rising from around \$625,000 to approximately [\\$7.5 million](#).

The US government subsequently announced a \$20 billion DFC-backed reinsurance facility, with Chubb as lead underwriter. Lloyd's of London stated that war risk cover remained available — but at drastically elevated prices. The premium surge created a stark two-tier market: vessels on long-term charters found their fixed freight rates unable to absorb the new insurance costs, while spot market operators commanded historic highs – with some [VLCC chartered at \\$770,000](#) per day reaching historic high. This episode demonstrates that fossil fuel supply chains are vulnerable not only to physical disruption but to financial system withdrawal.

Sources: Marine Traffic, Kpler, Spark Commodities, Lloyd's List, Windward, CNBC, Reuters, Zawya

2. How Exposed Are Korea and Japan?

Korea and Japan are structurally exposed to the Strait of Hormuz through both crude oil and LNG imports, though their profiles differ. Korea sources approximately 70% of its crude oil through the strait, while Japan sources over 90% of crude oil from the Middle East, with 75% transiting Hormuz directly. For LNG, Korea's direct Hormuz dependency is 18% and Japan's is 7%, reflecting the country's diversification toward Australia, the US, and Southeast Asia.



However, diversification of supply sources does not eliminate vulnerability to price volatility. LNG is a globally traded commodity, and disruptions anywhere in the market cause price spikes across all importing countries. Even shipments from Australia or the US are repriced when the global market tightens.

Source: Kpler (Korea & Japan 5-year avg.), Bruegel (Europe), CNBC, Seatrade Maritime, CRS (2026)

The 2022 Precedent: Paying More for Less

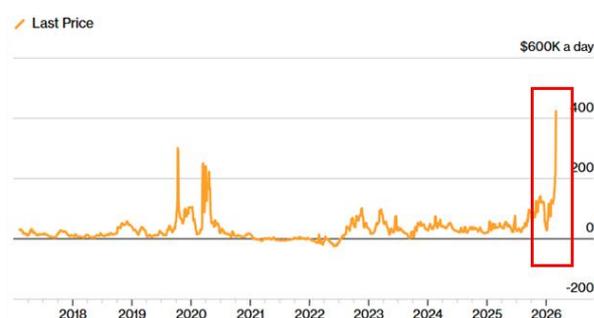
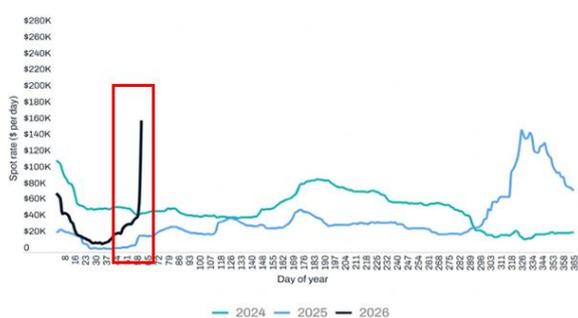
The 2022 Russia-Ukraine energy crisis demonstrated exactly how price volatility hits import-dependent economies. IEEFA data shows that Korea's LNG spending nearly doubled (+96.5%) from \$25.5 billion to \$50.0 billion, while demand barely changed (+0.9%). Japan's spending surged 65.2% even as demand fell 2.7%. The pattern is now repeating in 2026.



Source: IEEFA, "Data Dive: A breakdown of gas and LNG demand in Asia"; Kpler

2026 March - Evolving Impact

Shipping Freight Surging: LNG carriers are hitting \$300,000/day, up by 650%. Crude oil tanker freight has hit historic highs — GS Caltex paid \$440,000/day for a VLCC from Saudi Arabia's Yanbu port, while S-Oil chartered an emergency VLCC at \$555,000/day, among the highest rates ever recorded. Seven Korean-flagged oil tankers remain stranded near the Strait of Hormuz.



Source: Spark Commodities (LNG carrier, left), Baltic Exchange (Crude oil tanker, right)

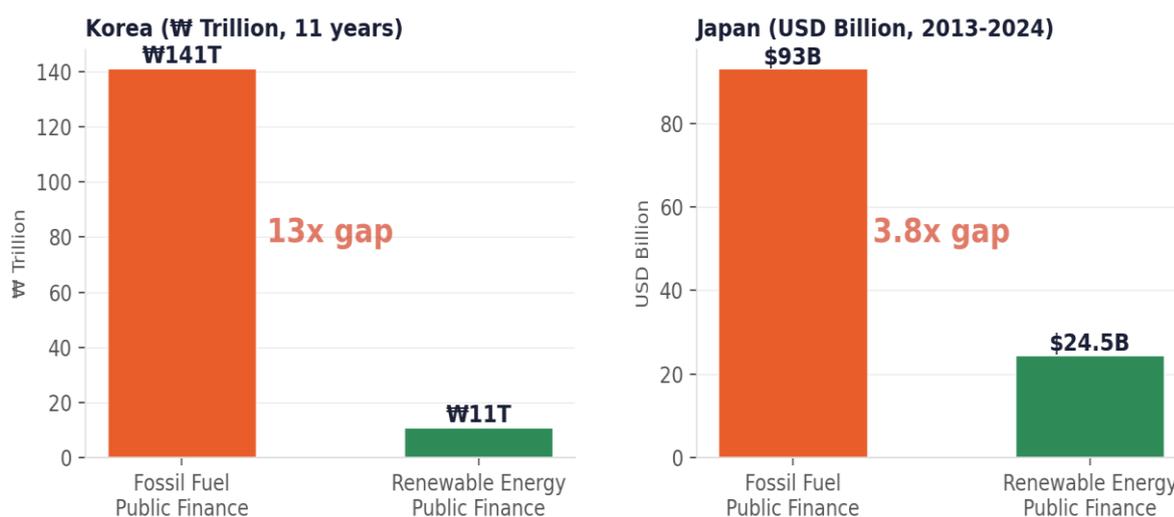
Marine Insurance: War risk premiums have surged 5x. Seven of twelve P&I clubs cancelled war risk coverage within 72 hours of the strikes, and new contracts are being issued at 1% of hull value — up from 0.125% before the conflict.

Force Majeure Trickling Down: Korea's petrochemical companies (Lotte Chemical, LG Chem, Hanwha Solutions) have issued potential force majeure notices to customers, while Yeochun NCC (Korea's largest ethylene producer) has already declared supply disruption. With naphtha supply dependent on refinery output, which in turn depends on crude oil shipments through the strait, the disruption is cascading through the industrial value chain.

Japan's METI has invoked an emergency release of 170 days' worth of state oil reserves. TEPCO has warned of potential rolling blackouts. JERA signed a 27-year LNG procurement deal with QatarEnergy just weeks before the crisis (February 3, 2026), while Mitsui was reportedly pursuing a stake in QatarEnergy's North Field expansion — decisions whose strategic rationale is now in serious question.

3. Public Finance Trapped in Fossil Fuels

Despite repeated crises, public finance in both Korea and Japan has overwhelmingly supported fossil fuel infrastructure over renewables — locking both economies into a vicious cycle of dependence, volatility, and cost pass-through.



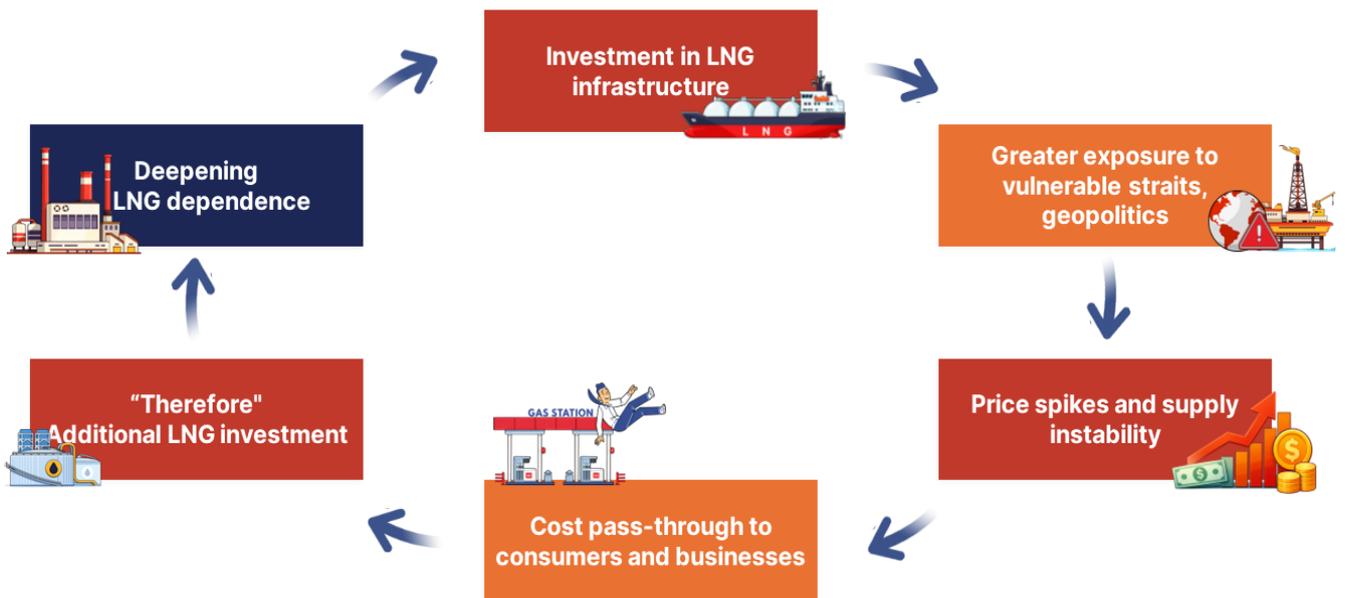
Korea has directed [₩141 trillion](#) (\$127 billion) to fossil fuel public finance over 11 years — the world's second largest — compared to just ₩11 trillion (\$9.7 billion) for renewable energy, a 13-fold gap. Approximately 60% of Korea's public export finance in the past five years has been concentrated in gas (LNG) infrastructure construction. KEPCO, Korea's state utility, carries ₩205 trillion (\$141 billion) in debt, with fossil fuel generation accounting for roughly 60% of its power mix. In 2024 alone, ₩160 trillion (\$120.1 billion) in fuel import costs flowed overseas.

Japan has provided approximately [\\$93 billion](#) in public financing for overseas oil and gas projects between 2013 and 2024, compared with only \$24.5 billion for overseas renewable energy. Over the past three years, the government spent \$32.2 billion on household electricity subsidies to absorb the price shock from the Russia-Ukraine war.

Sources: GESI (2025), SFOC, The Mainichi, KEPCO

The LNG Dependency Loop

The result is a self-reinforcing vicious cycle: investment in LNG infrastructure increases exposure to chokepoints and geopolitical risk, which triggers price spikes and supply instability, which passes costs to consumers and industry, which is then used to justify further LNG investment as "energy security" — deepening the very dependence that caused the vulnerability.



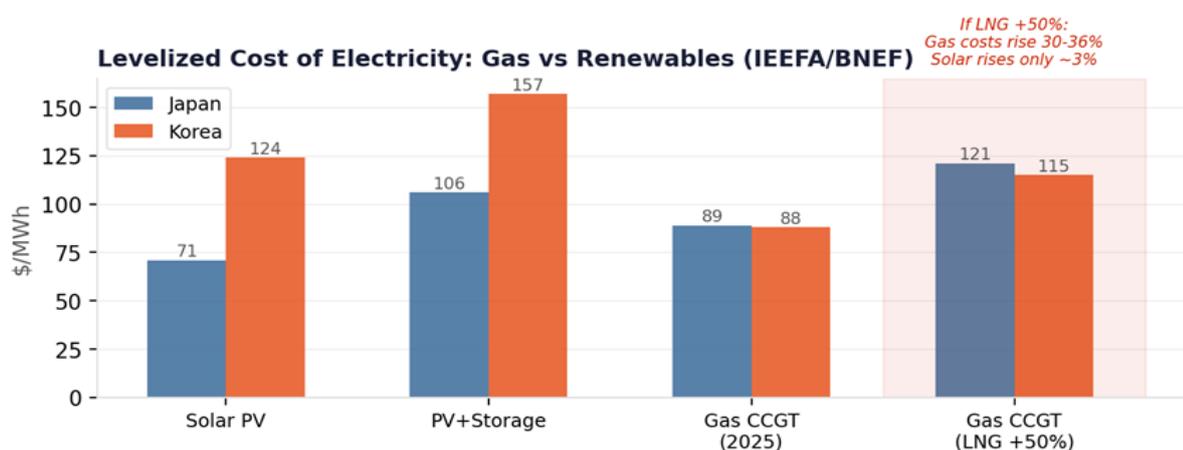
Insurance volatility is now embedded as an additional node in this cycle — war risk insurance cancellation directly amplifies the cost transmission from geopolitical shock to consumer burden.

4. LNG: Bridge Fuel or Dead End?

The case for LNG as a "bridge fuel" to clean energy rests on three assumptions — all of which are now failing under scrutiny:

Gas Is Now Uncompetitive with Renewables

At current LNG prices (JKM approximately \$15/MMBtu), IEEFA estimates that the fuel costs alone of operating a 1 GW gas-fired power plant at baseload levels would cost nearly \$800 million annually, resulting in a levelized cost of roughly \$130-140/MWh — 3 to 4 times the global average for solar (\$39/MWh) and onshore wind (\$40/MWh).



Source: IEEFA calculations based on Bloomberg New Energy Finance data. Gas CCGT (LNG +50%) scenario assumes 50% increase in LNG prices above 2025 averages plus 100bps increase in cost of capital.

If LNG prices remain 50% above 2025 averages, gas-fired power costs could increase by 32-37%. Solar costs would rise only approximately 3%. IEEFA estimates that every 1 GW of solar deployed could avoid approximately [\\$3 billion in LNG import costs](#) over 25 years. Relying on gas therefore appears to be a lose-lose proposition: greater energy insecurity at higher cost.

Same Money, 3x the Return

The opportunity cost is significant. Over the past eleven years, Korea directed \$97 billion more in public finance to fossil fuels than to renewables; Japan, \$68.5 billion more. In solar deployment terms — at an assumed cost of \$800M–\$1B per GW — those gaps represent an estimated 100 GW and 70 GW of potential installed capacity respectively. At IEEFA's estimate of \$120 million in annual LNG cost savings per GW of solar deployed, **redirecting Korea's gap could have avoided approximately \$12 billion per year in fuel import costs, and \$300 billion over 25 years — roughly three times the original investment.** Japan's equivalent redirection would generate an estimated \$200–210 billion in avoided costs over the same period, three times its gap as well. The pattern is the same in both countries: public finance has been consistently deployed to deepen the exposure it then pays to manage.

Conventional Wisdom	→	Reality
<ul style="list-style-type: none"> ✗ Lower GHG emissions than coal 		<ul style="list-style-type: none"> ✓ Including methane leakage in production and transport, LNG can be comparable to or worse than coal
<ul style="list-style-type: none"> ✗ Flexible buffer during transition 		<ul style="list-style-type: none"> ✓ 30+ year infrastructure lifespan creates carbon lock-in and delays transition
<ul style="list-style-type: none"> ✗ "Bridge" to clean energy 		<ul style="list-style-type: none"> ✓ A bridge that has broken 3 times in 5 years — unstable supply chains

5. International Precedents: Turning Crisis into Transition

Countries that have experienced energy crises are already moving decisively toward renewables:

European Union (REPowerEU): Following the 2022 Russian gas crisis, the EU implemented a strategy combining energy efficiency, accelerated renewable deployment, and supply diversification. Wind and solar growth replaced 70 billion cubic meters of gas imports — equivalent to Korea's annual LNG import volume — saving approximately €99 billion. Within three years, the EU reduced Russian gas from 45% to 19% of imports, cut overall gas consumption by 17%, and expanded renewables by 58%. In 2025, renewables surpassed fossil fuels in EU electricity generation.

Taiwan: Installed 4.4 GW of offshore wind by end of 2025 (2nd in Asia-Pacific, 5th globally), with 1.8 GW added in 2024 alone (a single-year record). Taiwan has set a 20.6 GW offshore wind target for 2035, turning its energy crisis into an opportunity for renewable industry development.

China: Installed a record 434 GW of new renewables in 2025 (315 GW solar + 119 GW wind). China reached its 2030 target of 1,200 GW six years early, in 2024. Wind and solar now account for 47% of total generation capacity (1,840 GW) — 13 times Korea's entire generation fleet.

Korea builds 74% of the world's LNG carriers. Japan operates one of the world's largest commercial shipping fleets and has advanced maritime manufacturing. Both countries have the industrial capacity for a structural transition — the question is whether public finance will set the direction.

6. The 74% Paradox

— Shipbuilding and Shipping at a Crossroads

Korea's dominant global market share in LNG carrier construction and Japan's role as a major ship operator and maritime manufacturer represent enormous industrial capacity. But high market share in a structurally declining sector does not equal long-term competitiveness.

Stranded Asset Risk

The UCL Bartlett Energy Institute has identified Korea as the country most exposed to stranded asset risk in shipping finance. KEXIM's portfolio is over 50% concentrated in fossil fuel carriers, with Korea's public export finance disproportionately directed toward midstream LNG shipping — this is why the shipbuilding sector is central to Korea's fossil fuel finance story. The gap between LNG carrier orders and actual long-term demand is widening. If market conditions deteriorate, Korea's shipbuilding industry and the public finance supporting it face simultaneous systemic risk.

Japan faces parallel exposure through its shipping fleet (NYK, MOL, K Line), trading houses deeply invested in LNG carrier operations, and long-term charter contracts tied to fossil fuel logistics.

The Transition Opportunity

LNG carriers depend heavily on foreign core technology (notably GTT cargo containment systems), meaning that even as Korean yards build more ships, the domestic industrial ecosystem does not capture proportional value. Korean shipyards are already commercializing high-value vessel types with proprietary design and engineering: offshore wind installation vessels (WTIVs), heavy-lift vessels (HLVs), and ammonia-fueled ships. Japanese yards (Kawasaki Heavy Industries, Mitsui E&S) are developing hydrogen carriers and alternative fuel systems.

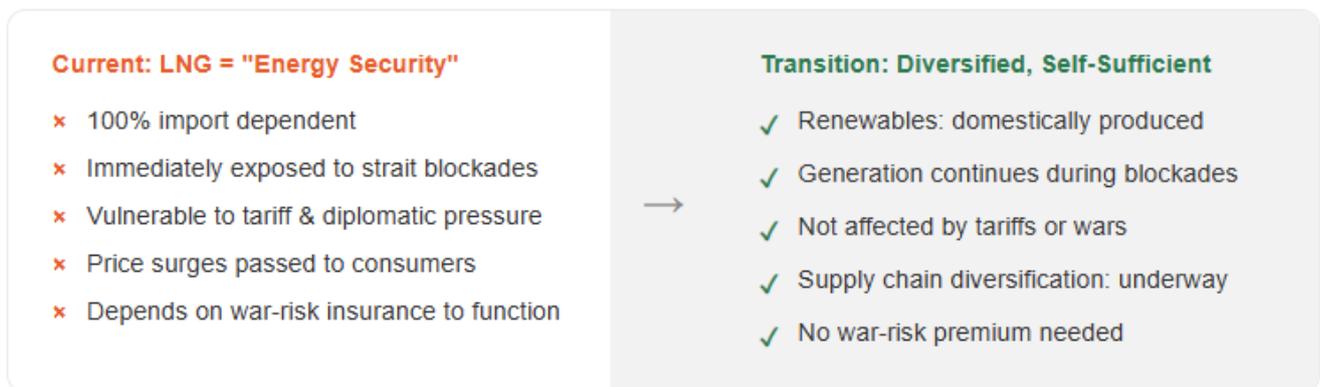
The global offshore wind market requires immediate investment of \$21-26 billion (₩29-36 trillion) in specialized vessels alone to meet the 2030 target of 500 GW (from 75 GW in 2023). Including ports, grid connections, and maintenance infrastructure, the

total market potential is far larger. With the right policy finance signals, both Korea and Japan can accelerate their transition and lead in next-generation maritime markets.

Source: Kuehne Climate Center

7. Energy Security = Energy Mix

True energy security means building an energy system that does not depend on imported fuels transiting conflict zones, insured by volatile war-risk markets. Renewable energy technologies operate fundamentally differently from fossil fuel supply chains: once installed, solar and wind infrastructure can generate electricity domestically for decades — no tankers, no chokepoints, no insurance crises.



"The idea that you can cost-effectively decarbonise your economies by relying on a commodity that, in the space of 5 years, is subject to two illegal wars that send prices stratospheric just doesn't make any sense." — Seb Kennedy, Energy Flux (Eco-Business, March 2026)

8. Policy Recommendations

Both Korea and Japan must fundamentally reorient their public finance institutions away from fossil fuel infrastructure and toward renewable energy and clean maritime industries.

1. Mandatory Energy Portfolio Risk Assessment and Disclosure.

Public export finance institutions (KEXIM, K-SURE for Korea; JBIC, NEXI for Japan) should conduct systematic risk assessments of energy-related finance portfolios — including geopolitical supply route risks, insurance volatility, and stranded asset exposure — with mandatory reporting to national legislatures.

2. Review of Public Finance for New LNG Infrastructure.

Reassess the economic rationale and stranded asset risks of continued public financing for LNG carriers, terminals, and upstream investments. Apply stress tests reflecting scenarios such as the current Hormuz crisis.

3. Expand Public Finance for Renewables and Clean Maritime Vessels.

Redirect public finance portfolios toward offshore wind installation vessels, alternative fuel carriers, and renewable energy infrastructure. Both countries' shipbuilding and maritime industries have the capacity to lead this transition — with the right finance signals.

4. Energy Independence Roadmap.

Move beyond import diversification to structural energy mix transformation — prioritizing domestic renewable energy deployment to reduce fundamental dependence on imported fossil fuels.



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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.