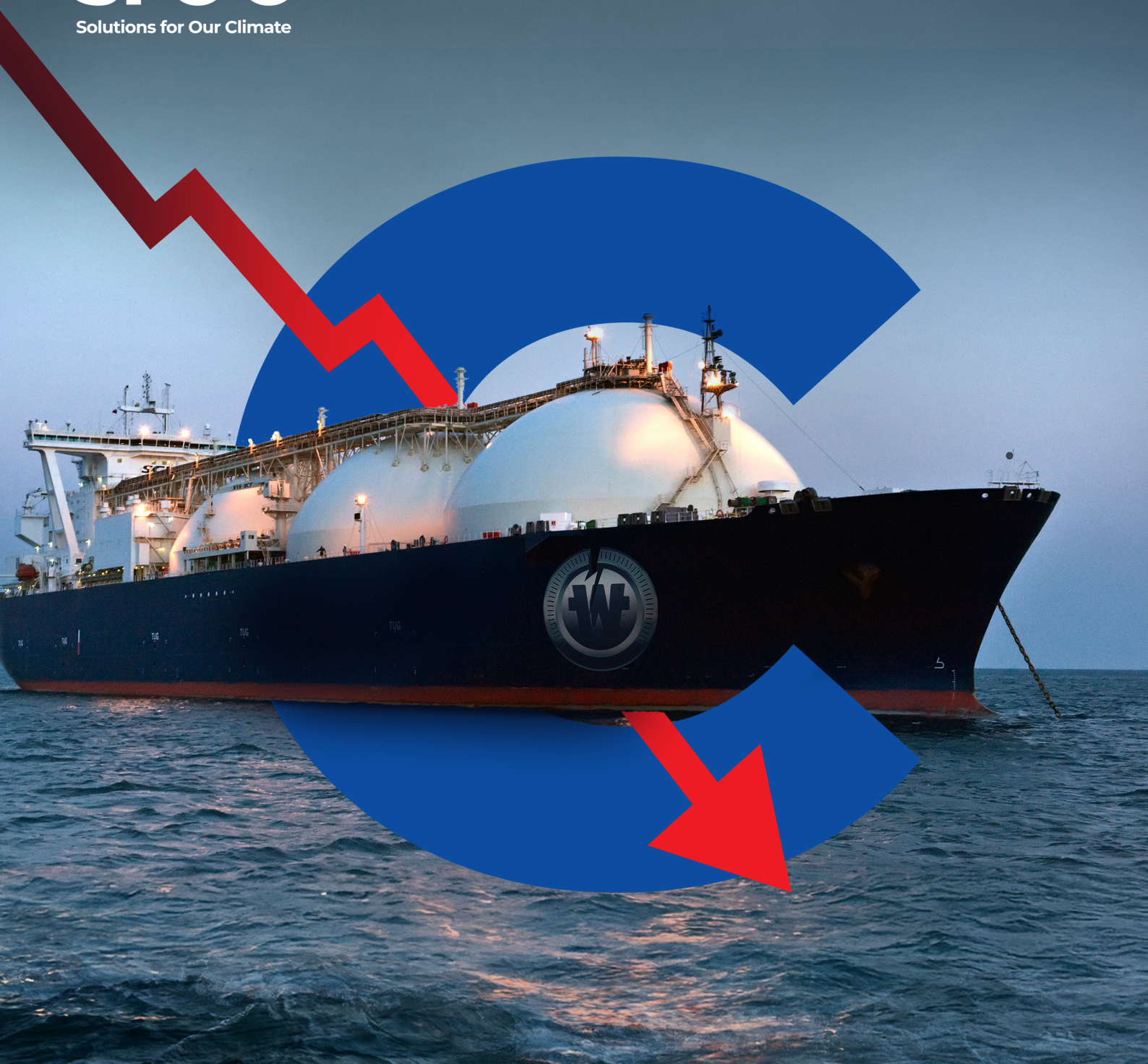




Supplementary Brief:

South Korea's Exposure to Shipping Stranded Asset Risks

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South Korea's Exposure to Shipping Stranded Asset Risks

This brief is based on the analysis of South Korea in the UCL Bartlett Energy Institute (2025) report "Exploring methods to assess financiers' exposure to stranded assets in shipping" and includes further analysis of LNG carrier support from South Korean public finance.

Publication Date **October 27th, 2025**

Authors **Rachel Eunbi Shin**
| Researcher, Gas Team, Solutions for Our Climate

Elina Aibek Kyzy
| Researcher, Gas Team, Solutions for Our Climate

Design **Julissa Urena**
| Designer, Solutions for Our Climate

Inquiries **solutions@forourclimate.org**
Solutions for Our Climate | www.forourclimate.org

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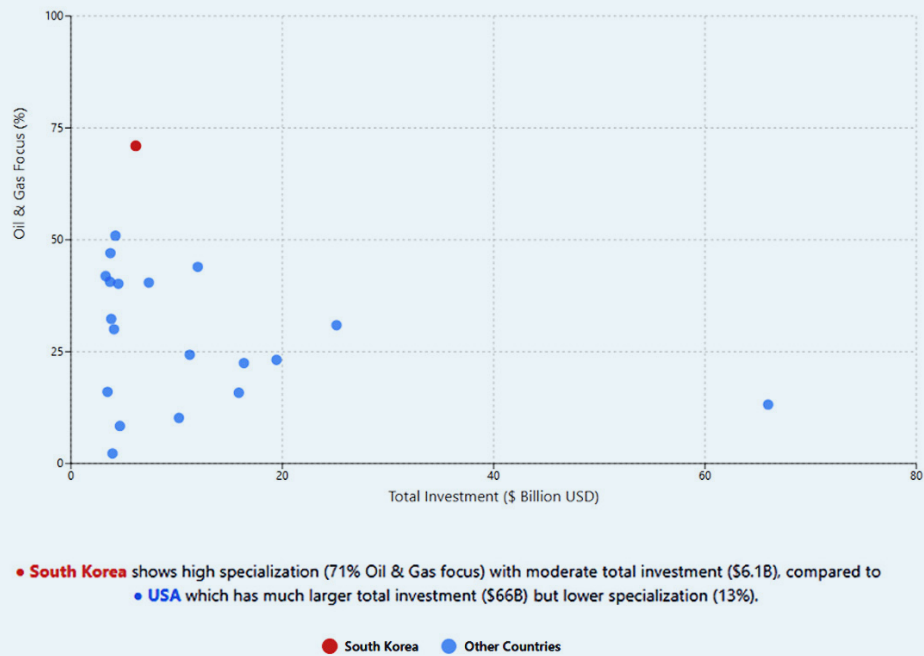
This document may be cited as: SFOC (2025), Supplementary Brief: South Korea's Exposure to Shipping Stranded Asset Risks

Executive Summary

South Korea emerges as the most exposed economy to demand-side stranded asset risks in global shipping finance, according to new research from UCL. With nearly half of its shipping investments directed toward LNG carriers and Korea Eximbank (KEXIM) holding over 50% of its portfolio in fossil fuel carriers, South Korea faces severe financial vulnerabilities. Critically, as an Export Credit Agency (ECA), KEXIM's actual risk exposure is understated in this analysis, as ECAs bear guarantee risks ignored in the research methodology to capture commercial banks' risks. (UCL Report, p.31).

Investment Amount vs Oil & Gas Focus

Country comparison: Total investment size vs specialization in Oil & Gas Tankers



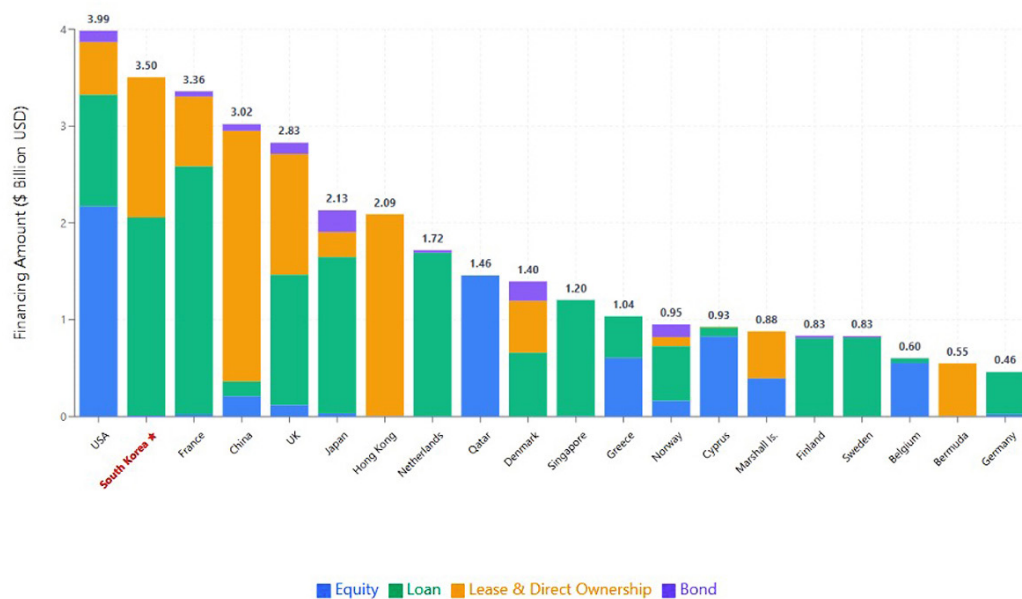
Key Findings from the Report: South Korea's Risk Profile

National Level

- **Highest exposure globally:** "Most exposed to demand-side stranded asset risks" (p.3)
- **Portfolio concentration:** ~71% in fossil fuel carrying ships vs. global average ~24%, where South Korea is 2.9x the global average (p.30, Figure 16)
- **Systemic impact:** "Where these risks are more concentrated, for example South Korean investments, there could be **more severe impacts, both on the state and the private finance sector,** should the risks materialise" (p.5)

Liquefied Gas Tanker - Top 20 Financiers' Headquarters

Distribution across Equity, Loans, Leases, and Bonds



Supplementary Brief:

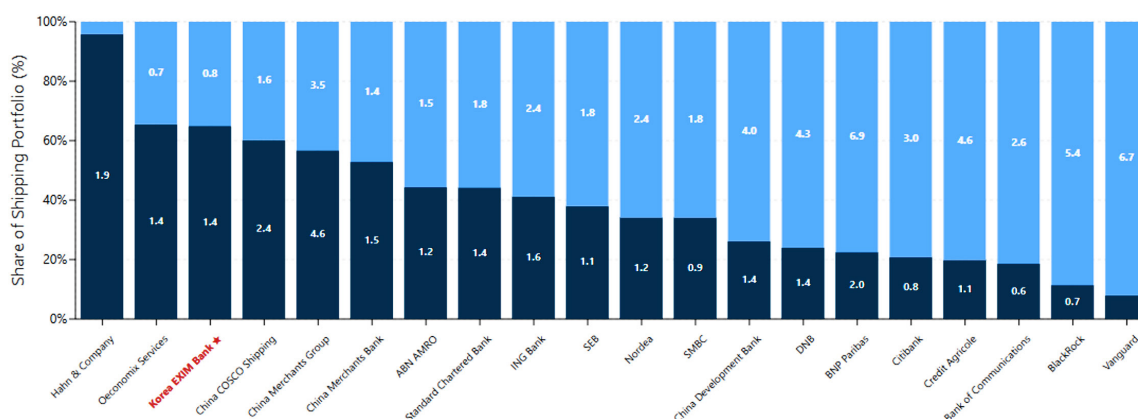
South Korea's Exposure to Shipping Stranded Asset Risks

Institutional Level KEXIM

- **Over 50% concentration** in fossil fuel carriers (p.3, p.22, Figure 8)
- Among only **"a couple of financiers"** with portfolios **"dominated by fossil fuel carrying ships"** (p.30)
- **True risk understated:** "The approach has **ignored the role of Export Credit Agencies in guaranteeing loan transactions**. For those transactions, most of the **loan risk would be borne by the Export Credit Agency**, not the lender" (p.31)
- **Implication:** Reported 50%+ represents **conservative floor**; actual sovereign exposure is higher.

Top 20 Financiers

Share of Shipping Portfolio (%) - Oil & Gas Tankers vs Other



★ **Korea EXIM Bank** shows strong focus on Oil & Gas Tankers at **64.9%** of its shipping portfolio, ranking among the top financiers. Korea EXIM Bank has invested **\$1.40B** in Oil & Gas Tankers compared to **\$0.76B** in other vessel types.

■ Oil and Gas Tankers ■ Other

LNG Market Context

- **Highest stranded asset risk** due to inability to repurpose, young fleet, newbuild concentration (p.5)
- **Depressed market entry:** "These vessels that will start operating in the next couple of years, will be entering an **already depressed market...** and will have their values written down even before they've begun operation" (p.5)

Global LNG Financing

- **Identified:** USD 36 billion (p.2)
- **Actual estimate:** USD 108-144 billion (3-4x higher per authors' previous research) (p.2)
- **Instruments:** Loans 50% (USD 17B), Direct ownership/leases (USD 11B), Equity (USD 7B) (p.2-3, Figure A)

South Korea's Exposure

- **Research sample:** USD 3-4 billion identified (p.27, Figure 13)
- **Estimated actual:** USD 10-16 billion (applying 3-4x multiplier + coverage adjustments)
- **Korean won equivalent:** Approximately 15-20 trillion won
- **Plus unquantified ECA guarantee risk** (excluded from UCL methodology to highlight commercial banks' loan exposure)

Why KEXIM's Risk is Uniquely Severe

Factor	Typical Bank	KEXIM as ECA2030
Asset mix	New + used vessels	Predominantly newbuilds
Delivery timing	Diversified	Concentrated 2025-2027
Risk bearing	Can transfer/syndicate	Sovereign guarantee retained
Regulatory oversight	Financial sector rules	Limited oversight by banking regulations

Key Quotes from the Report

"South Korea is seen as most exposed to the **demand side stranded asset risks**, as it continues to finance the fossil fuel carrying fleet, with nearly half of its shipping investments directed toward LNG carriers." (p.3)

"China Merchants Group, **Korea Eximbank (KEXIM)**, and the Standard Chartered Bank have almost **half of their shipping portfolio tied to fossil fuel carriers.**" (p.3)

"These vessels that will start operating in the next couple of years, **will be entering an already depressed market**, characterised by an oversupply of vessels and slow-down in demand and so **will have their values written down even before they've begun operation.**" (p.5)

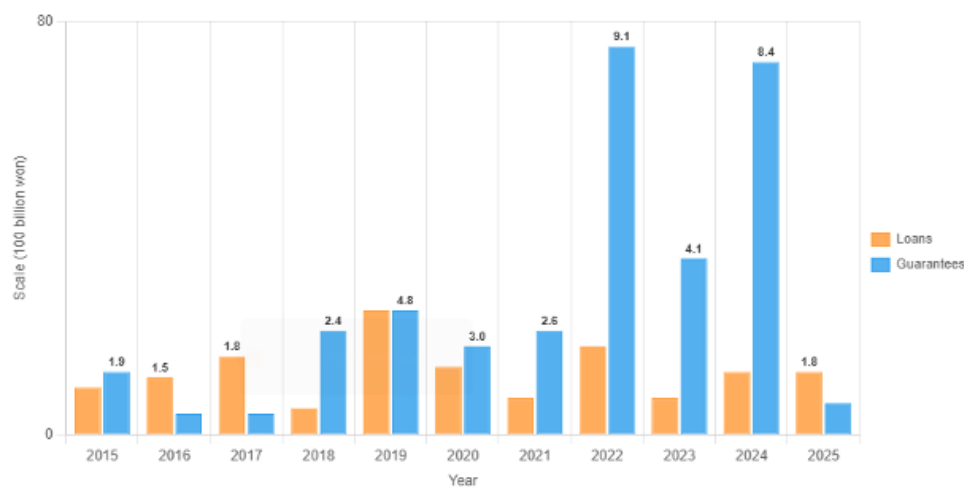
"Finally, **the approach has ignored the role of Export Credit Agencies in guaranteeing loan transactions.** For those transactions, most of the loan risk would be borne by the **Export Credit Agency**, not the lender." (p.31)

2025 Update: KEXIM and Korean Public Financiers' Financing Support for LNG Carriers (Not part of the original report)

Data sources: 2015-2022 data from Korea National Assembly records (obtained 2023) and 2023-2025 data from Korea National Assembly member Cha Gyu-geun (obtained 2025)

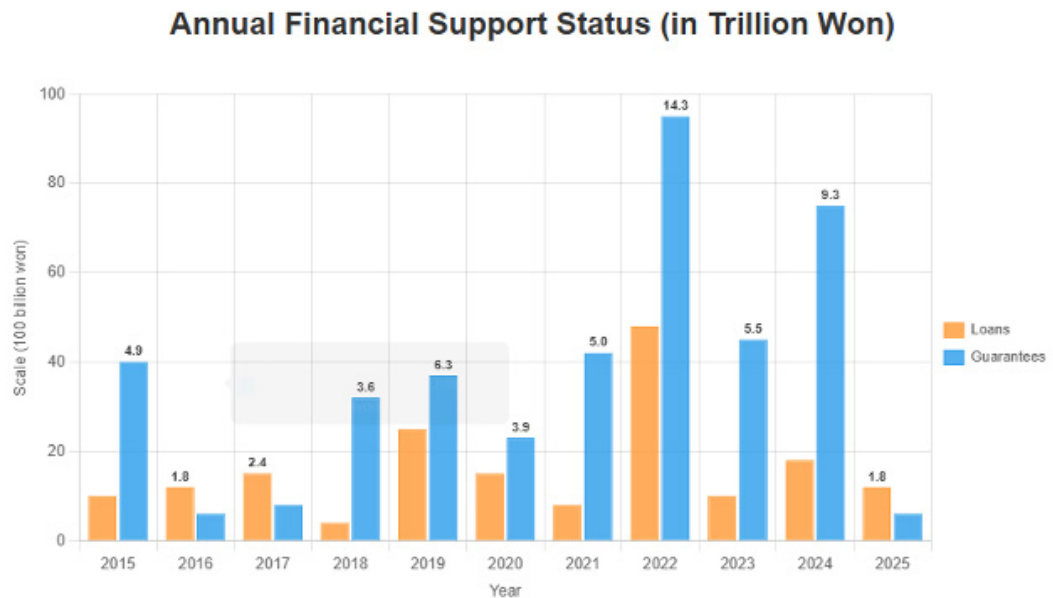
Korea Eximbank (KEXIM) Financing Overview (2015-2025)

Export-Import Bank Annual Financial Support Status (In Trillion Won)



- Including loans and guarantees, **over KRW 41 trillion** in financial support provided for **LNG carriers over the past decade**
- Among **35 shipping finance cases**, **6 were without charter contracts**, indicating direct exposure to market risks
- Summary of totals (2015–2025): **Loans KRW 12.99 trillion**, **Guarantees KRW 28.34 trillion**, **Total KRW 41.3 trillion**

Aggregate Financial Support Across Five Public Institutions



- During the 2021–2022 LNG carrier order boom, public financial institutions significantly expanded their guarantees.
- As the vessels financed during this period are delivered in 2024–2025, loan disbursements are expected to surge.
- **Total combined exposure: KRW 58.8 trillion**
(KEXIM 41.3T, KDB 11.8T, K-Sure 4.8T, KOBC 0.7T, KAMCO 0.2T)

Policy Recommendations by SFOC

- **Mandate charter contracts** (block speculative orders like 17% of current cases)
- **Emergency portfolio review** of 48 trillion won exposure, prioritizing:
 - 2025-2027 delivery newbuilds
 - Full ECA guarantee exposure (beyond direct lending)
- **Early warning system** for market oversupply signals
 - Apply stranded asset risks when evaluating financing cases
- **Phase-out roadmap:** Join 41 countries ending fossil fuel public finance
 - 2025: 50% reduction in LNG newbuild approvals
 - 2026: 75% reduction
 - 2027: Complete phase-out