FoE Japan

Is Japan and South Korea's Joint 'CLEAN' Initiative on Methane Abatement Truly Clean?

August 23, 2025

— What is the CLEAN Initiative? —

In 2023, JERA and Korea Gas Corporation (KOGAS)—the largest importers of liquefied natural gas (LNG) in Japan and South Korea, respectively—launched **the Coalition for LNG Emission Abatement toward Net-Zero, or the CLEAN project.** The initiative seeks to reduce methane emissions and improve transparency throughout the LNG value chain.

As part of the program, JERA and KOGAS distribute questionnaires to LNG suppliers to assess their efforts in monitoring and mitigating methane leaks. The responses are aggregated and analyzed by the Japan Organization for Metals and Energy Security (JOGMEC), which publishes annual reports showcasing best practices among producers. [1]

The framework also involves major Japanese stakeholders such as trading houses like Mitsubishi Corporation and Mitsui & Co., as well as energy utilities like Tokyo Gas and Kansai Electric Power.[2]These companies are expected to share technologies—such as infrared leak detection systems—with producers, offering support to enhance disclosure and methane control efforts.[3] According to the annual report of CLEAN, "responses were obtained from more than 80% of LNG sellers (16 LNG projects out of 20), and about 35% of all LNG sellers (7 LNG projects out of 20) responded about methane emissions from the LNG value chain and their efforts to reduce emissions."[4]

Through the CLEAN framework, LNG stakeholders in Japan and Korea are beginning to take action to reduce methane emissions. However, this briefing examines whether such efforts are truly sufficient. We begin by reviewing why methane reduction is critical, explore the concrete measures proposed by the International Energy Agency (IEA), and examine regulatory best practices such as the EU's Methane Regulation and the corporate-level OGMP 2.0 framework. We conclude by assessing the gaps and future direction of the CLEAN project in comparison.

— Why Reducing Methane Emissions Matters —

The growing number of international initiatives to reduce methane emissions reflects a shared understanding of their urgent climate significance. Methane is a potent greenhouse gas—more than 80 times as powerful as carbon dioxide over a 20-year timescale.[5]To achieve the 1.5°C target of the Paris Agreement, experts estimate that **anthropogenic methane emissions must be cut by one-third by 2030.**[6]

The Global Methane Pledge, launched at COP26 in 2021 under the leadership of the EU and the United States, aims for a 30% reduction in global methane emissions by 2030.[7] As of today, 159 countries, including Japan, have joined the pledge.

Methane emissions from the energy sector alone account for more than one-third of total anthropogenic emissions.[8] The International Energy Agency (IEA) emphasizes that methane emissions from fossil fuels must be cut by 75% between 2020 and 2030 to stay on track for the 1.5°C goal.[9] Achieving this reduction could alone lower total human-caused methane emissions by 25%. To meet the 30% global reduction target, it is necessary to expand the number of countries committing to methane reduction pledges and to strengthen methane management across other sectors. However, if emissions from fossil fuels can be reduced, it will bring us significantly closer to the goal of cutting methane emissions by about one-third by 2030.[10]

The IEA notes that "[t]hese emissions represent one of the best near-term opportunities for climate action because the pathways for reducing them are known and understood. Further, compared to action on agriculture and waste, a larger proportion of the abatement options come at a low cost."[11] In addition, **70% of methane emissions from oil and gas operations can be reduced using existing technologies, and 45% of those reductions could be achieved at no net cost**.[12]

— What Effective Domestic Policies Does the IEA Recommend? —

Despite growing commitments to reduce methane emissions, the IEA warns that even if all current policies and pledges with detailed implementation plans were fully executed, methane emissions from fossil fuel operations would only decline by about 20% between 2023 and 2030.[13] So, what kinds of initiatives and regulations are necessary to achieve substantial methane emission reductions from gas and oil?

In its 2021 report "Curtailing Methane Emissions from Fossil Fuel Operations: Pathways to a 75% Cut by 2030", the IEA estimates the emission reduction potential of various policy measures. The report highlights three key domestic policies:

1. **Eliminating non-emergency flaring and venting**
   This measure alone could reduce methane emissions by up to 3 million tons per year.

   *Flaring refers to the combustion of excess natural gas generated during oil extraction to prevent accidents caused by pressure buildup and to reduce the costs associated with capturing and utilizing the gas.[14] Venting, on the other hand, denotes the direct release of surplus natural gas into the atmosphere during the extraction or transportation of oil and gas.[15]

2. **Mandatory leak detection and repair (LDAR) programs**
   Requiring companies to detect and repair leaks can achieve a reduction of about 5 million tons, and further reductions of about 3 million tons can be achieved by implementing equipment performance standards and switching to low-emission technologies.

3. **Regulations mandating low-emission alternatives**
   Introducing technical standards to require the use of alternative equipment that does not emit methane can reduce emissions by an additional 300,000 tons.

All of these policy tools have already been implemented in some countries and are considered relatively feasible.

Furthermore, market-based mechanisms—such as incentives for companies that implement emission reduction measures or taxes on emissions—as well as performance standards based on emission intensity (i.e., methane emissions per unit of gas produced), are estimated to enable an additional reduction of roughly 5 million tons of methane. When combined with the previously mentioned measures, these additional policies could potentially reduce methane emissions from oil and gas operations by around 70% in total. However, the success of these policies hinges on the accurate measurement of methane emissions. Regulators must be able to evaluate the effectiveness of mitigation efforts, and operators need to be confident that reducing emissions will yield economic returns.

— How Can LNG Importing Countries Reduce Methane Emissions From Imported Gas? —

The same IEA report also evaluates policy options for reducing methane emissions from overseas LNG companies. Because methane leaks occur throughout the LNG supply chain, countries that import LNG must go beyond domestic policies and influence other countries through diplomacy, economic incentives, technical and institutional support, and trade policies.

The analysis compares the mitigation impact of four distinct measures.

The first is the introduction of methane emissions certificates, which quantify methane emissions associated with a defined volume of oil or gas. In addition to improving transparency around abatement opportunities, accurately identifying methane emissions from specific oil and gas flows enables producers to pinpoint the most cost-effective mitigation strategies. According to estimates, if exporters were to implement nearly all zero-cost mitigation options identified through this process, it could result in emissions reductions of approximately 7 million tonnes.

The second measure involves introducing a premium pricing mechanism, whereby exporters can command higher prices for their products if they can demonstrate that their methane emissions fall below a specified benchmark. This creates a strong financial incentive for producers to curb emissions. While there is a concern that such schemes may lead to fuel switching—favoring already lower-emitting gas rather than driving actual emission reductions—the IEA notes that, over the medium to long term, this approach could catalyze greater investment in methane abatement technologies.

The third measure involves providing direct financial support for methane mitigation efforts and enabling companies that invest in such reductions to earn tradable credits. These mechanisms are considered particularly effective in addressing emissions from closed or abandoned wells, where the recovered gas cannot be commercially sold.

The fourth measure is the introduction of methane intensity standards, which would effectively exclude oil and gas from producers or regions that fail to meet specified emissions thresholds (measured per unit of production) from access to the market. According to estimates, if moderately stringent methane intensity standards were applied to all imports by countries committed to methane abatement, global emissions could be reduced by approximately 15 million tonnes.

The report also notes that voluntary corporate initiatives play a critical role—particularly in regions with limited regulatory oversight—in advancing methane abatement efforts beyond government requirements.

However, as with domestic policies, the effectiveness of these international measures depends on accurate emissions data, underscoring the urgent need to establish robust methane measurement systems moving forward.

— EU Methane Emissions Regulation (MER) —

In alignment with the IEA's recommendations, the European Union enacted **the Methane Emissions Regulation (MER)** in 2024, introducing a comprehensive set of requirements for both domestic and foreign companies operating within the EU gas and oil supply chains.[16]

For example, the regulation requires oil and gas operators within the EU to conduct third-party monitoring, reporting, and verification (MRV) of methane emissions in accordance with international standards. It also incorporates a range of measures shown to be effective in IEA analyses, including bans on non-emergency flaring and venting, as well as mandatory leak detection and repair (LDAR) programs.

In addition, as recommended in the IEA report, the regulation extends to exporters of oil and gas to the EU, requiring them to implement third-party monitoring, reporting, and verification (MRV) systems equivalent to EU standards by 2027, and to comply with binding methane intensity thresholds by 2030.[17]

At the same time, the MER has several challenges, including the absence of clearly defined methane intensity thresholds to date, and the delayed implementation of binding intensity standards, which are not scheduled to take effect until 2030.

— What is OGMP 2.0 (Oil & Gas Methane Partnership 2.0)? —

In the realm of methane abatement, while the European Union serves as a leading model at the policy level, **the Oil and Gas Methane Partnership 2.0 (OGMP 2.0)** stands out as the benchmark for corporate action. The initiative is led by the United Nations Environment Programme (UNEP) and the Climate and Clean Air Coalition (CCAC)![18]

Like CLEAN, OGMP 2.0 is a voluntary initiative for companies; however, it enforces rigorous standards for monitoring, reporting, and verification. Companies with the highest standard are awarded the "Gold Standard" designation.

To qualify for the Gold Standard under OGMP 2.0, companies must present a clear and credible pathway for achieving, within a defined timeframe, reporting at Level 4 and Level 5 across the majority of their assets. Level 4 requires emissions estimates based on source-specific emission factors for individual equipment and processes, while Level 5 involves direct, site-level measurements.[19] In contrast, Levels 1 through 3 rely on generic or default emission factors rather than detailed measurement or asset-specific data, resulting in less precise estimations of methane emissions.

OGMP 2.0 emphasizes not only rigorous measurement, but also thorough verification. Emissions data submitted by companies are reviewed by the International Methane Emissions Observatory (IMEO) through a four-tiered evaluation process.[20] Using statistical models, IMEO compares the methane intensity of each asset against similar facilities, flags outliers or sudden fluctuations, and requests explanations from the reporting company. Submitted data are also cross-checked against satellite observations and scientific studies. When necessary, IMEO may dispatch research institutions to conduct on-site measurements using drones or ground-based instruments. If inconsistencies are identified through this verification process, companies are required to revise and resubmit their data.

Companies that achieve the Gold Standard under OGMP 2.0 are eligible to obtain higher-tier low-methane certifications from entities such as MiQ. Fossil gas certified as Responsibly Sourced Gas (RSG) through these schemes is typically traded at a premium of several cents per MMBtu compared to uncertified gas. [21]

In this way, OGMP 2.0 serves as a leading example of effective methane abatement, not only by implementing a rigorous MRV framework, but also by linking emissions reductions to economic incentives through its Gold Standard designation—an approach strongly endorsed by the IEA.

— Challenges of the CLEAN Project —

What can be said about the CLEAN project when compared with the specific methane abatement measures recommended by the IEA, the regulatory frameworks adopted by the EU, and corporate initiatives such as OGMP 2.0? CLEAN can be recognized as a meaningful first step in methane mitigation, particularly for its structure in which JOGMEC and major LNG importing companies in Japan engage upstream suppliers in the process. Another notable feature is its role in encouraging corporate action by publicly disclosing methane emissions data collected from suppliers. Considering that INPEX is the only Japanese company currently participating in OGMP 2.0, and that no other Japanese firms had previously taken part in any formal methane reduction frameworks, CLEAN has played a significant role in broadening the base of engagement and awareness among Japanese companies.

Conversely, it could also be interpreted that CLEAN emerged as a more lenient alternative for companies reluctant to participate in OGMP 2.0 due to its stringency. **Compared to OGMP 2.0, CLEAN still falls short in several key areas necessary to ensure the effective and sustained implementation of meaningful methane abatement measures.**

First, the CLEAN framework is limited to a system in which major LNG buyers send questionnaires to LNG suppliers and receive responses. Unlike OGMP 2.0, it lacks third-party verification, raising concerns about the accuracy and credibility of the reported methane emissions data. Self-reported figures may understate actual emissions. Indeed, a study conducted by Stanford University researchers found that methane emissions from the oil and gas industry in the United States were three times higher than what companies had reported through self-declared inventories[22]Moreover, CLEAN currently focuses only on sharing best practices for methane abatement and does not incorporate methane intensity standards or economic incentives to drive emissions reductions.

— How the CLEAN Initiative Can Become More Effective —

Rapid reductions in methane emissions are essential to achieving the 1.5°C climate target. Scientific evidence clearly shows that the development of new fossil fuel projects—including fossil gas—is incompatible with the 1.5°C pathway. To align with this goal, it is critical to halt the approval of new fossil fuel developments and begin phasing down production from existing projects.

The CLEAN Initiative may represent a first step toward reducing methane emissions from LNG, but as a framework for delivering effective mitigation, it remains significantly lacking. Without accurate and credible emissions data, it is impossible to design meaningful policies or regulatory measures. To evolve into a robust and impactful mechanism, **CLEAN must go beyond voluntary disclosure and adopt rigorous and detailed measurement and verification protocols.** It must also establish concrete, quantifiable emissions reduction targets—along with incentives that compel companies to meet and exceed them.

The CLEAN initiative is still in its early stages. However, as long as it remains reliant solely on voluntary corporate actions, there is a risk that it will be perceived as mere signaling to investors rather than a genuine commitment to methane abatement. Going forward, the initiative must evolve to deliver more effective and verifiable outcomes.

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