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Methane and GHG Emissions Management Issues in LNG

- Policy, markets, and companies - April 2026

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Introduction

The monthly report, in this latest edition, outlines global advancements in methane management and greenhouse gas reduction strategies within the energy sector, notably in the LNG industry, as of April 2026.

Notable advancements in the report include the principled agreement between the Government of Canada and Alberta, which establishes a performance-based system aimed at a 75% reduction in methane emissions by 2035. Concurrently, the industry is witnessing a surge in demand for third-party verified data, exemplified by a significant methane certificate transaction, allowing greater transparency and the selection of lower-emission gas.

The maritime sector continues to demonstrate the efficacy of LNG as a bridge to a lower-carbon future. Recent Life Cycle Assessments (LCAs) reveal that LNG can reduce tank-to-wake GHG emissions by up to 29% compared to traditional marine fuels, largely due to measures in mitigating methane slip. Furthermore, the introduction of bio-LNG and e-methane into existing infrastructure offers a promising, albeit cost-intensive, pathway for further decarbonisation.

However, the transition is not without its hurdles. The hydrogen market is currently navigating a "sobering reality" defined by investment slowdowns and significant funding barriers. Experts increasingly advocate for a coordinated, multi-carrier strategy across electricity, hydrogen, and gas infrastructures to avoid system instability and unnecessary costs.

Japan remains at the forefront through strategic initiatives such as Tokyo Gas' completion of long-term city-gas distribution pipeline replacement projects to eliminate leak risks, the approval of exploratory drilling for Carbon Capture and Storage (CCS), and international collaborations to secure stable, low-emission energy supplies.

The global landscape for methane and greenhouse gas (GHG) emissions management within the energy sector is undergoing a shift from ambitious target-setting to practical, performance-based implementation. This transition is characterised by a dual focus on regulatory frameworks and market-driven transparency mechanisms.

[Global Developments]

The Government of Canada and the Province of Alberta reached on 25 March 2026 principled agreement on methane emissions reductions in the oil and gas sector, under which the province will introduce a performance-based system combining offset credits and investments, with federal regulations to be suspended if equivalent reductions are achieved; the target is a 75% reduction from 2014 levels by 2035, with a final agreement expected within the year and implementation planned for 10 years starting in 2027.

MiQ announced on 25 March 2026 that a 3.5 million-unit methane certificate transaction was completed on Xpansiv CBL market among European energy companies, highlighting growing demand for third-party verified methane intensity data, with such certificates enabling emissions transparency and the selection of lower-emission gas and gaining attention as a tool for compliance with regulations.

Mitsubishi Gas Chemical Company and Kyushu University announced on 3 April 2026 that they had conducted a demonstration test to recover gas from a methane plume on the seabed of the Sea of Japan, confirming the effectiveness of a continuous recovery system; the test, carried out off Sado, Niigata at a depth of about 150 meters, achieved continuous gas recovery and verified that methane is the main component, highlighting the potential to utilize methane plumes as a new energy resource while contributing to reduced environmental impact through emission mitigation, with future efforts focusing on assessing seepage volumes, optimizing system design, and evaluating economic feasibility toward.

EPA (U.S. Environmental Protection Agency) announced on 6 April 2026, a rule extending the allowable duration of emergency flaring in the oil and gas sector from 24 to 72 hours as part of a review of methane regulations.

A group of companies and associations sent a letter on 13 April 2026 to Energy Ministers of EU27 Member States, asking the European Union to consider changes to the EU regulations on methane emissions.

SGMF published on 12 April 2026 its latest Life Cycle Assessment (LCA) on LNG, further demonstrating significant reductions in greenhouse gas (GHG) emissions compared to traditional marine fuels. One of the key findings is evidence of up to 29% tank-to-wake GHG emissions reductions when using LNG compared to MGO 0.1 - an improvement of up to 13% compared to the previous LCA conducted in 2022 - highlighting the effectiveness of measures to reduce methane slip. This progress contributes to overall well-to-wake GHG emissions reductions of up to 25%.

A new study launched on 14 April 2026 by Gas Infrastructure Europe (GIE) finds that Europe cannot deliver a secure, affordable, and climate-neutral system without

coordinated planning across electricity, hydrogen and gas infrastructure. The study highlights the critical role of hydrogen in enabling a cost-efficient and resilient energy transition. Its central finding is clear: a siloed, electricity-only approach risks driving unnecessary costs and system instability. By contrast, a coordinated, multi-carrier strategy significantly improves overall system efficiency and resilience.

The Global Hydrogen Market 2026 Assessment released on 14 April 2026 by CEDIGAZ highlights a transition from early ambitious visions to a "sobering reality" marked by slowing investment growth, project cancellations, and significant funding hurdles. While green and blue hydrogen are vital for decarbonizing heavy industries, the report notes that high costs and uncertain offtake demand remain primary obstacles to large-scale adoption, according to the report.

DNV released on 14 April 2026 a white paper, "*Methane in Shipping: LNG-fuelled ships and the switch to low-GHG methane*," focusing on the maritime sector. It notes that low-GHG methane (biomethane and e-methane), while chemically identical to LNG, can be produced with a lower environmental footprint and utilized using existing vessels and infrastructure. However, it also highlights that regulatory uncertainty, limited supply, and high fuel costs remain key barriers to widespread adoption.

Chile's energy ministry said on 13 April 2026 that Gas Valpo had launched a pilot project in the Coquimbo and La Serena regions, injecting green hydrogen into natural gas distribution networks supplying around 4,600 households. The project began with a hydrogen blending ratio of 3.5%, later rising to 5% following the installation of an electrolyser. The operator aims to increase the share from 10% now to 15% during 2026, with a longer-term target of reaching a 20% hydrogen mix.

[Developments in Japan]

Tokyo Gas Co., Ltd. and Tokyo Gas Engineering Solutions Co., Ltd. (TGES) announced on 25 March 2026 that they had agreed with Asahi Group Japan Co., Ltd., Sekisui House Co., Ltd., and Hitachi, Ltd. to supply city gas based on from overseas biomethane in FY2026 (ending in March 2027). The biomethane used as a source for city gas is imported from the United States.

Asahi Life Insurance Company, Sanshin Co., Ltd., and Tokyo Gas Engineering Solutions Co., Ltd. (TGES) announced on 26 March 2026 that they will achieve "carbon neutrality of all amounts of heat" at the Shinjuku L Tower owned by Asahi Life and Sanshin. The Shinjuku West Exit District Heating and Cooling Center, operated by TGES, supplies cooling and heat to eight locations, including L Tower, office buildings, and schools.

JOGMEC (Japan Organization for Metals and Energy Security) and Malaysia's PETRONAS signed a memorandum of cooperation (MoC) on 27 March 2026, establishing an updated framework building on their 2023 agreement to further expand collaboration in areas such as securing stable LNG supply, advancing CCS and hydrogen initiatives, and strengthening coordination on greenhouse gas emissions management across the energy supply chain.

Nippon Yusen, NTT Facilities, Eurus Energy Holdings, MUFG Bank, and Yokohama announced on 25 March 2026 that they had launched a demonstration project for a floating offshore data centre, envisioned to operate on 100% renewable energy and potentially become the world's first of its kind, with the demonstration scheduled through March 2027.

Kawasaki Kisen announced on 1 April 2026 that it had signed a long-term procurement agreement for bio-LNG (liquefied biomethane) fuel and begun its continuous use in LNG-fuelled car carriers, with expected annual GHG emissions reductions of 60.8 thousand tonnes; the fuel is produced from organic waste such as livestock manure and food residues and is certified under ISCC-EU.

Metropolitan CCS, LTD., a joint venture between INPEX CORPORATION and Kanto Natural Gas Development Co., Ltd., announced on 15 April 2026 that it had received approval from Japan's Minister of Economy, Trade and Industry to conduct exploratory drilling offshore Kujukuri along the east coast of Chiba Prefecture, Japan, supporting carbon capture and storage (CCS). This approval designates Metropolitan CCS as the operator responsible for conducting drilling operations to identify geological formations suitable for the storage of CO2 within a specified area. The Metropolitan Area CCS Project is a CCS initiative that involves capturing CO2 emitted from multiple industrial sources, including the Kimitsu Area of Nippon Steel Corporation's East Nippon Works and other industries in the Keiyo Industrial Complex, transporting the captured CO2 via pipeline, and storing it offshore Kujukuri. Metropolitan CCS is currently working toward the commencement of CO2 storage by the early 2030s under the "Engineering Design Work for Advanced CCS Projects " commissioned by JOGMEC (Japan Organization for Metals and Energy Security).

Tokyo Gas finalised on 19 February 2026 the replacement of all remaining cast-iron pipes with polyethylene (PE) pipes within its supply area. The project, which spanned 30 years since its inception in 1996, effectively eliminates the risk of gas leaks caused by earthquakes and other external factors across the low-pressure pipeline network.

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