

GIIGNL
GENERAL ASSEMBLY



HIROSHIMA | JAPAN
October 6 - 8, 2024



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Hiroshima Declaration

LNG: solution fuel for a more sustainable future

LNG plays a critical role in maintaining a well-supplied, stable, and lower carbon energy system. LNG is likely to be required to do so for the coming decades, providing a firm platform for an orderly and more affordable energy transition.

This will be to the benefit of natural gas importing markets worldwide, particularly the currently highly coal-dependent markets. The sustainability of LNG can be, and is being, improved. In the near-term via the detection and reduction of GHG emissions along the supply chain, and potentially in the longer-term by the sequestration of CO₂, as well as the future production of bio-LNG and synthetic LNG (e-LNG).

Introduction

In November 2018 GIIGNL released its 'Fukuoka declaration' on "LNG as clean and flexible solution for a responsible energy future". Since then, the world has been through significant geopolitical upheaval.

That upheaval has highlighted the important role of gas and LNG in the world energy system, reinforcing the key messages of the 2018 declaration.

At the same time economic growth remains strongly linked to energy consumption. Hence, global welfare needs energy to fuel economic growth. The reduction in GHG emissions observed in 2020 (-5.2%) came with a decrease in the world primary energy consumption (-3.6%) as the world GDP decreased by 3.1% because of the COVID pandemic. The challenge in future is to increase the availability of affordable energy, while at the same time reducing GHG emissions.

Among the main outcomes of the COP26 in Glasgow in 2021, the need to phase-down from coal was explicitly agreed while recognizing the complexity of economic and social situations in some countries. Another major outcome of this COP was the Global Methane Pledge that saw over 100 countries committed to cut methane emissions by 30% by 2030 compared to 2020 levels.



In the aftermath of the Russian invasion of Ukraine in February 2022, Europe evolved from a ‘balancing market’ into a ‘structural LNG demand center’. As a result, LNG’s contribution to global energy security has reached its highest level since the Fukushima nuclear accident that was triggered by the Great East Japan Earthquake in 2011. LNG was able to respond to the crisis by a reconfiguration of trade flows. However, the resulting overall market tightness highlighted the need to keep energy supply and demand in balance through adequate investment in fuel production and energy infrastructure.

1. LNG is an important component of energy security.

Natural gas is an abundant resource with a Reserves to Production ratio close to 50 years. It accounts for 23% of the global primary consumption.

Gas plays an important role in energy security for both developed and developing, or emerging countries.

- Alongside various measures related to energy efficiency, acceleration of renewable energy development and postponement of nuclear power plants decommissioning, LNG imports have allowed the European Union to cope with a 110 Bcm reduction in pipe imports from Russia between 2021 and 2023. EU27 LNG imports have jumped by 140% from 2021 to reach 130 Bcm in 2023.
- In Asia, LNG has played a growing role in terms of security of supply. In Thailand for example, LNG imports grew by 77% between 2021 and 2023, filling the supply gap created by decreasing local gas production.
- Globally, LNG is key for efficiently satisfying growing energy needs in emerging markets such as South and Southeast Asia.

To maximize its contribution to global energy security the LNG industry needs to continue strengthening its intrinsic qualities of availability, accessibility and above all flexibility. This requires regular investments, liquid marketplaces and contractual suppleness.

On average over the lifetime of an end-use gas facility such as a power plant or a boiler, LNG is affordable, especially if its CO₂ advantage is factored in the comparison with an alternate fossil fuels like coal or oil products.

2. Switching from coal to gas in industrial processes and in power generation is an efficient way to decrease GHG emissions.

It is widely recognized that gas emits at least 50% less GHG than coal in combustion



processes. Thus, switching from coal to gas in power generation or in industry can achieve an immediate emission reduction. For example, if 50% of the power generated by coal in 2022 had been produced using gas, close to 3 GtCO₂e of emissions could have been saved. Between 2000 and 2010, energy related GHG emissions grew faster than primary energy consumption as coal significantly increased its share, growing from 25% to 30% whereas gas remained constant at 22%. Between 2010 and 2022, the opposite happened, as coal share decreased while gas maintained its share and renewables reached 7%, resulting in GHG emissions growing more slowly than energy consumption. In addition, natural gas combustion produces fewer pollutants such as sulfur dioxide, nitrogen oxides, and particulate matter compared to coal.

3. As a clean fuel in the transportation sector, LNG use is expected to expand.

LNG burns more cleanly than conventional marine fuels like heavy fuel oil. The lower overall carbon footprint of LNG has positioned the super-chilled fuel as a viable short to medium-term option for reducing the maritime industry's environmental impact as the sector explores possible long-term solutions like hydrogen and ammonia.

The LNG industry has been a pioneer in the use of LNG as fuel. LNG carriers have utilized boil-off gas to reduce marine fuel consumption and minimize environmental impact since the advent of steam turbine engines. Efficiency in LNG carrier propulsion has been further improved with modern engines that continue to use boil-off gas.

4. Gas and LNG infrastructures enable the development of renewable energy sources.

While the expansion of renewable energy sources is essential for sustainable development and reducing carbon emissions, the continued presence of flexible and reliable gas assets in the electricity system is necessary to ensure grid reliability and stability.

Renewable sources like solar and wind are inherently intermittent, with power output fluctuating based on weather conditions. Gas power plants provide critical backup capacity due to their ability to quickly adjust output levels and generate power on demand. This backup is efficient, as the relatively low capital cost of gas power plants allows for competitive intermittent usage. This capability is crucial for maintaining consistent electricity supply and preventing grid instability during periods when renewable generation is low.

Additionally, gas-fired power plants contribute to the grid's inertia, helping to regulate



frequency and support voltage levels.

5. The LNG industry is actively working to reduce greenhouse gas and methane emissions in the value chain.

For natural gas to remain a major resource, a cleaner value chain must be created. This includes participating in voluntary disclosure initiatives and adhering to stricter reporting standards, which help stakeholders assess the environmental impact of companies. Among these initiatives, GIIGNL has released in 2021 an MRV (Measurement, Reporting, Verification) framework which aims to help organizations operating across all stages of the LNG value chain to report within an accredited framework the GHG footprint associated with a delivered cargo or an individual stage and to make declarations relating to emission reductions, offsetting or GHG neutrality.

Both importing and supplying companies are adopting technologies and practices to detect and reduce methane leaks from equipment and pipelines. This includes the use of drones and satellites to detect leaks, as well as replacing older equipment prone to leaks with newer, more efficient technologies.

All along the value chain, companies are improving energy efficiency. More efficient processes help reduce the amount of energy used and hence the emissions per unit of LNG delivered.

To reduce the carbon footprint of their operations, some LNG producing companies are integrating hydroelectricity, solar and wind into their operations.

The LNG industry is investing in Carbon Capture and Storage technologies at gas processing sites and power plants.

Carbon Capture and Storage technologies also lay the foundation for gas to be converted to low carbon hydrogen.

In shipping, the industry is making inroads into the issue of methane slip through the adoption of new engine technologies. In 2023, over 75% of new orders for LNG-fuelled ships comprise vessels with low methane slip engines (2 stroke engines).

6. LNG infrastructures can pave the way for carbon-free fuels like bio-LNG and e-LNG, efficient solutions to mitigate climate change.

Using existing infrastructure makes biogas and e-natural gas more cost-effective compared to alternatives that would necessitate substantial investments in new facilities and

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networks.

We are committed to advocating for the adoption of biogas and e-NG as practical components of the energy transition and beyond. E-NG can serve as a key element in the decarbonization of the thermal sector and gaseous energy, leveraging existing infrastructure to minimize extra societal costs.

Continued investment in LNG facilities is also critical. Reduced investment will impact both access to affordable and reliable energy and economic growth for producers and consumers.

Where LNG is replaced by bio-LNG and e-LNG, LNG infrastructures can become low or zero greenhouse gas emissions facilities. These facilities can continue to play an important role in a decarbonized society by contributing to the expansion of renewable energy.

There are diverse paths toward the common goal of addressing climate change, and it is important to promote realistic initiatives tailored to each country and region.

GIIGNL was founded 50 years ago to establish and maintain safety guidelines and industry best-practice, collect and analyze statistical data as well as to advocate for the benefits and potential of LNG. Like the LNG industry, the group has grown in terms of number of players and in geographic diversity since its foundation and has extended its scope to include sustainability issues. Through this declaration, GIIGNL wishes to highlight the key features of LNG that enable it to contribute to a well-supplied, stable, and lower-carbon energy system. GIIGNL seeks the understanding and cooperation of governments, related institutions, companies, and organizations to achieve this contribution.

