



INTERNATIONAL GROUP OF LIQUEFIED NATURAL GAS IMPORTERS
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Fukuoka (Japan), November 12, 2018

FUKUOKA DECLARATION

LNG: A CLEAN AND FLEXIBLE SOLUTION FOR A RESPONSIBLE ENERGY FUTURE

The Members of **GIIGNL** - an international association of 83 companies contributing to import more than 90% of the LNG flows worldwide - met in Fukuoka, Japan and discussed the role of LNG in the energy transition.

LNG is Liquefied Natural Gas, natural gas cooled down into a liquid form to make it easier to store and ship.

We concluded that LNG, by facilitating the increased international trade and use of natural gas, can play a prominent role in the success of global policies promoting a responsible and cleaner economic and social development.

In summary:

- LNG is the cleanest burning hydrocarbon and one of the few energy sources that can be used across all energy sectors
- Natural gas reserves are abundant and accessible, making LNG a reliable energy source
- LNG infrastructure is flexible and reduces the barriers to entry for exporters and importers
- LNG offers a cleaner and energy-efficient alternative to coal for electricity generation
- LNG supports the integration of intermittent renewable electricity generation into energy systems
- LNG fuels clean growth in industry
- LNG improves air quality and reduces emissions from commercial and residential buildings
- LNG enables clean mobility
- LNG facilitates the international trade and use of natural gas
- LNG can improve energy security and mitigate the volatility of energy demand, including for the power generation mix.

“LNG is a clean, affordable and flexible solution which is uniquely placed to meet the energy challenge while enhancing competitiveness and national energy security.”



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The access of all to reliable and affordable energy while reducing the impact on climate change and improving air quality is one of the greatest challenges of our times: over 900 million people currently live without access to secure electricity and 2.7 billion lack access to clean cooking according to the International Energy Agency (IEA).

Even assuming ambitious energy efficiency progress, global energy demand is forecasted to grow by 30% by 2040. In the Asia-Pacific region energy demand is expected to grow by more than 40% over the same period and natural gas demand in the region may double.

As today's global energy consumption is responsible for two thirds of greenhouse gas emissions and significantly impacts air quality, especially in densely populated areas, the members of GIIGNL are committed to contribute to the necessary energy transition and to help reduce anthropogenic emissions across all sectors: power generation, industry, housing and transportation.

The role of natural gas and LNG in transforming the energy system has been endorsed by international frameworks such as the G20 and has resulted in various regional, national and local policy actions. Natural gas is expected to represent 40% of total energy demand growth over the next two decades, not only powering electricity generation but also in sectors which are more difficult to electrify. It is the only fossil fuel that the IEA forecasts will grow under all of its main scenarios.

LNG CAN MEET THE ENERGY CHALLENGES AND BRING BENEFITS TO THE SOCIETY BECAUSE:

- **The cleanest burning hydrocarbon, LNG is one of the few energy sources that can be used across all energy usages:** to generate electricity, to provide heat and feedstock for industrial processes, to heat homes and to fuel the transport of people and goods.
- Natural gas reserves are abundant and accessible, making LNG **a reliable energy source** exported from 20 different countries to 42 importing countries today. Today, global proven gas resources stand at 769 trillion cubic meters, enough to supply global gas demand for 219 years at current levels of demand.
- By the development of floating technologies such as floating LNG plants (FLNG) and floating storage and regasification units (FSRU), **the flexibility of LNG infrastructure** helps to reduce the investment risks and lowers the barriers to entry for new exporting



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and importing countries. **The portability of LNG** also opens access to new sources of energy to populations and territories which are not connected to diversified and/or modern energy sources.

- LNG offers **a cleaner and energy-efficient alternative to coal for electricity generation**. LNG helps reduce emissions as it produces 45 to 55% less greenhouse gas emissions than coal in power generation according to the IEA. The use of LNG rather than coal significantly reduces localized pollution. Gas emits less than one-tenth of the sulphur oxides (a major cause of acid rain), particulates (which have an adverse impact on human health), nitrogen oxides (which causes smog) and heavy metals emitted by coal. While water scarcity already affects 4 out of every 10 people, natural gas-fired power plants use around 50% less water than coal-fired ones along the life-cycle of electricity generation. Today, around 40% of coal-fired plants are in areas with high level of water stress and the world's coal plants annually consume enough water to meet the needs of more than 1 billion people.
- LNG also **supports the integration of intermittent renewable power generation**. A combination of LNG and renewables offers countries a predictable, reliable, flexible and cost-effective pathway to lower emissions. Natural gas-fired power plants can reach full output in minutes providing competitive and flexible back-up to variable renewables.
- LNG **fuels clean growth in industry**. According to the IEA, global industrial gas demand may increase by more than 60% between 2016 and 2040. In the Asia Pacific region, industrial gas demand is forecasted to almost triple. In heavy industry, gas can replace other more polluting fuels while reliably delivering the high temperatures or chemical reactions needed for industrial processes, for instance in ammonia production or petrochemical plants. In light industry, displacing coal and diesel boilers with gas boilers can **lower greenhouse gas emissions, improve air quality and deliver cost reductions**. As it can be liquefied, transported, stored and regasified in small volumes in decentralized facilities, LNG **boosts economic development by providing energy access** to customers who do not have access to gas grids, in developing but also in developed countries.
- LNG **improves air quality and reduces emissions from commercial and residential buildings**. Heating, cooling, cooking and lighting represent 30% of the energy used globally. Including the electricity they use, buildings account for more than one quarter of global energy-related CO₂ emissions. By substituting polluting coal boilers and traditional biomass employed in many developing countries, and by underpinning gas-



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fired district heating and cooling, integrated smart energy networks, efficient Combined Heat and Power (CHP) systems as well as residential fuel cells, LNG helps clean the air in the major cities of the world. LNG is widely used to meet demand during cold snaps. In 2018 the UK experienced a period of cold weather. LNG terminals responded to meet demand, increasing supply fivefold and meeting around 60% of the additional demand.

- LNG **enables clean mobility**. Increasingly employed for marine transportation, LNG-fueled ships are fully compliant with the IMO 2020 regulation. They provide **cost and operational efficiency savings**, 17% CO₂ emissions savings compared with oil on the full life-cycle, a reduction of 80% in sulphur emissions and significant local air quality improvements in ports and surrounding areas. More than 200 LNG-fueled ships are operating or under construction in the world. In the road transportation sector, heavy duty vehicles are a major source of pollution, of poor air quality and noise. While only 4% of vehicles on the road are trucks, they account for 17% of global pollution. LNG used as a fuel for trucks reduces CO₂ emissions by 15% compared with diesel (28% when bioLNG is used), nitrogen oxides emissions by 50% and particulate emissions by up to 90%.
- LNG is flexible in volumes as well as in destination and it **facilitates the international trade and use of natural gas**. It can **improve energy security and mitigate the volatility of energy demand**, including for the power generation mix. As contractual conditions become more flexible and market liquidity increases, even more opportunities will arise.

GIIGNL members actively promote and contribute to liquefied natural gas playing a growing role in supplying the world with cleaner and more secure energy across all sectors.

Based on its 50 year experience of establishing and maintaining safety guidelines, manuals, statistical data as well as advocating the achievements and the potential of LNG, the association is committed to cooperate with all parties involved to continue to promote a secure, efficient and sustainable access to LNG imports in the future for the benefit of all.

To this purpose, GIIGNL will work constructively with policymakers to actively support the role of LNG in energy systems by providing a stable, adequate and supportive framework for the development of LNG usages, trade and investments.



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We will work closely with all other institutions or companies involved in activities contributing to the LNG production, transport or usages to combine efforts in order to further improve a safe, reliable, flexible and competitive access to LNG.

GIIGNL is the "International Group of LNG Importers". With 83 member companies headquartered in 26 countries, GIIGNL members handle more than 90% of LNG imports worldwide. Over the last 50 years, the association has been playing a unique role in the development of the LNG industry, constituting a forum for exchange of information and experience among its members. In accordance with the GIIGNL Strategic Roadmap, it will continuously review and confirm this aim in order to enhance the safety, reliability and efficiency of LNG imports activities and the operation of LNG imports terminals in particular.



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Chubu Electric Power Co., Inc.
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CPC Corporation, Taiwan
DEPA
Dominion Cove Point LNG
Dubai Supply Authority
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