



LNG – ENHANCING GLOBAL ENERGY SECURITY

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A global issue

Energy remains the lifeblood of the modern world, and a quick scan of our daily news outlets reminds us of the immense challenges that governments, policymakers, regulators and the energy industry itself have in mapping out an energy plan to a more secure, affordable and environmentally sustainable energy future.

The vital importance of a clean, stable, affordable and secure energy transition becomes even more stark considering the global economic, geopolitical and climatic instability we are currently experiencing. We're seeing unprecedented growth in the global population, as well as the urbanization of that population. The UN Department of Economic and Social Affairs predicts the world population to reach 8.5 billion by 2030, and to hit 9.7 billion by 2050. This will lead to a substantial increase in the consumption of energy to meet the needs of the growing population, the rise of the middle class and the need to provide access to basic energy to those who do not have it today. As countries evolve into more developed economies, they demand more energy to meet the needs of the increasing number of technology-savvy populations and increasing number of industries. By 2040, the developing world is expected to account for 65 percent of the world's energy consumption, according to a report by the United States Energy Information Administration. This is a factor that must be taken into consideration early on in a nation's development if it is to maintain energy security.

Natural Gas and LNG in energy security

The mix of the fuels necessary for energy security is constantly evolving – there is no one ultimate solution and the current energy mix is more diverse than we've seen before. However, whichever scenario you envisage, natural gas must be present as a major contributor. As a cleaner and more efficient fuel that is abundant in supply, it will play an essential role in the future energy mix and will become increasingly popular versus traditional, more polluting fuels. In BP's *latest Energy Outlook (2018)*, most scenarios between now and 2040 point to gas consumption growing at a much faster rate than either oil or coal, "with its share in primary energy overtaking coal and converging on oil by the end of the Outlook".

This increasing popularity is in part due to the cleaner and more economical nature of natural gas, but also partly due to the increase in the availability of liquefied

natural gas (LNG). As the advantages of natural gas in the global energy mix become increasingly apparent to governments, industry and consumers around the world, LNG is becoming an increasingly preferred option. In the past two years, we saw a number of positive supply projects across the globe, such as Australia Pacific LNG starting commercial operation, US LNG coming on stream and the identification of over 879 MTPA of proposed project development concentrated in North America, East Africa and Asia Pacific.

On the demand side, LNG continues to show significant growth as a fuel of choice in new markets enhancing security of supply to existing grids that have limited in-country production, high electricity production costs, or as a need to fuel switch to a cleaner form of energy. This is no surprise given the impressive increases in investment into flexibility of delivery options, such as floating regasification units (FRSUs) to LNG bunkering.

With LNG increasing in both demand and supply, and LNG supplies greatly increasing the availability of gas around the world, there is an obvious role for it to play in significantly enhancing global energy security.

There are three key points that highlight its benefits, and speak to what makes it so perfectly suited to support global energy today and into the future.

Flexibility: Natural gas is an incredibly flexible source of fuel, in terms of supply and storage. It can be delivered via pipelines, via marine transportation, and often via a combination of both – increasing security of supply. As mentioned, we've also seen increased investment in storage capacities for LNG through FRSUs and bunkering, as countries and organisations recognise the benefits and look to shore up their energy supplies. This flexibility in supply proves especially useful during short-term events where demand peaks, and existing energy supply and infrastructure struggle to respond. Continued infrastructure investments combined with the substantial increase in LNG over the next few years will ensure that gas is available at an affordable price where and when it is needed.

Security of Electricity: This flexibility and the security of supply also leads directly into security of electricity supply for consumers and industry. Natural gas plays a particularly prevalent role in responding to and meeting electricity demand during peak periods, both in the winter and summer. Even very recently, we've seen record low temperatures in parts of North America and Europe,



Liquefied Natural Gas continues to show significant growth as a fuel of choice in new markets

where gas has acted as the bedrock in the power fuel supply mix – meeting the demand and ensuring that the lights, heat and industry remain on. This reinforces the tremendous value that flexible, affordable, on-demand natural gas generation can offer.

Partner to Renewables: While many call for the immediate leapfrog to a world in which energy is provided entirely via renewable sources, this is not a viable approach. Renewable energy undeniably continues to make significant inroads into the market share of other fuels but can fall short when issues arise to create havoc in the energy supply (such as significant peaks in demand, combined with adverse weather conditions that impact supply from renewable sources). Natural gas is the perfect fuel to partner with renewable energy, providing the ultimate security of energy and electricity supply in a clean, efficient and cost-effective manner. Furthermore, locally produced renewable gas or biomethane add another dimension to energy security.

The energy transition needs to be carefully thought out. It needs to be rational and consider all factors, including costs to governments and consumers; reliability; security of supply; and environmental sustainability. LNG falls into all these categories and is rapidly becoming widely recognised as a more flexible fuel, available on a global scale and with easier and safer ways to transport it. The BP Energy Outlook scenarios show that LNG supplies will double by 2040. Combined with pipeline supplies, natural gas is perfectly positioned as a bedrock of energy security. Governments and industries must invest in the infrastructure needed to support it, and they must invest now. ■

UN DESA: <http://www.un.org/en/development/desa/news/population/2015-report.html>

US Energy Information Administration: <https://www.eia.gov/todayinenergy/detail.php?id=14011>

BP Energy Outlook 2018: <https://www.bp.com/en/global/corporate/energy-economics/energy-outlook/demand-by-fuel.html>