Liquefied Natural Gas Outlook Brief

SEPTEMBER 2021

LNG Market Outlook Brief and Key Take-Aways in a Fast-Changing Environment

As the global energy sector recovers from the immediate impacts of Covid-19 in the areas of demand and prices for its products, the industry is also facing increased pressure from policymakers, shareholders and activists to accelerate the transition towards carbon neutrality.

While certain economies that have actively implemented energy transition policy over the past decade may be ready to transition from fossil fuels to renewable energy sources within the next decade, many economies will have to rely on transition fuels for the time being, while sufficient renewable energy capacity is developed, and power grids are adapted.

Transition fuels are low-carbon fuels that can temporarily substitute high-carbon energy sources such as coal and crude oil.

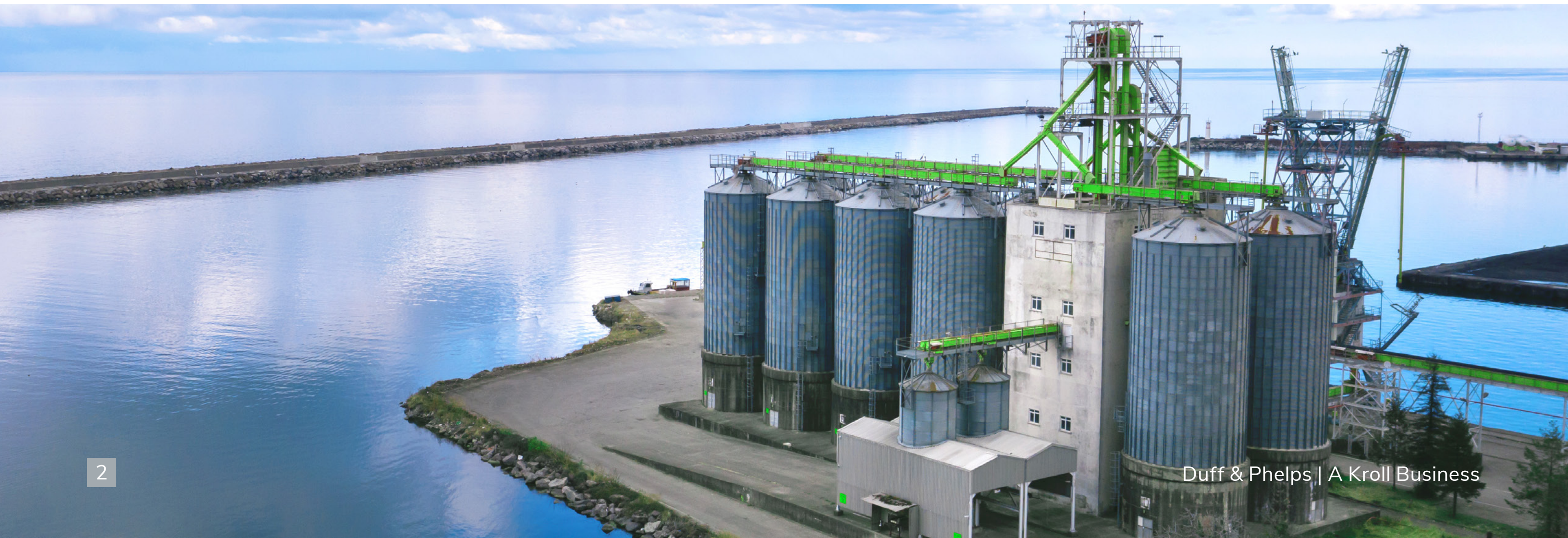
Natural gas is predestined to be such a transition fuel and similarly, the long-term outlook for liquefied natural gas (LNG) looks bright, despite the oversupply situation observed over the past years. As high-carbon power generation projects such as coal plants are phased out, while energy demand increases, natural gas-powered plants are relatively low in complexity and are a readily available solution to bridge demand gaps.

Non-producing, high demand countries, mainly in Western Europe and East-Asia will especially rely on natural gas imports during the time of transition. An increasingly relevant part of the natural gas supply chain has shifted towards LNG as many factors including sustained low natural gas prices in the U.S. and technology-advancements have contributed to the globalization and therefore commoditization of natural gas via LNG.

Through commoditization, the LNG market is becoming more independent, flexible and liquid (as compared to the regional and seasonal aspects of natural gas) with its own price finding mechanisms, according to global supply and demand (as compared to oil indexation) and new contractual schemes.

We expect these evolutions of the LNG market to foster significant growth of LNG volumes traded globally over the next decade, coupled with a significant increase in liquefaction capacity that will be required to sustain such growth.

Kroll's Oil and Gas team has identified various factors that will determine (i) the expected dynamics of market growth, and (ii) how buyers' and sellers' strategies and profitability might be affected in the process.



Emergence of new LNG sale and purchase agreement (SPA) models

At the center of the boom in large LNG infrastructure project sanctions stood long-term offtake agreements that transfer volume risk to buyers through take-or-pay clauses. Such contractual commitments would guarantee continued cashflow to service project debt and generate attractive returns, characterizing a seller's market. As a result of the past months' market imbalances, LNG producers are currently facing substantial buyer power, leading to spot and short-term contracts that are bringing more flexibility to the supply chain and accelerating the globalization of the market through a greater price convergence between regions. The current trend is to move from take-or pay clauses, towards contracts where the risk volume relies on the seller, reflecting a balancing of risk allocation between buyers and sellers.

Future LNG projects will require new financing schemes

The change in commercial agreements and shifting of risks from buyers to sellers mentioned above, has made traditional project financing more challenging. While lenders, export credit agencies (ECA) and development finance institutions (DFI) have traditionally provided project sponsors with low-interest loans for greenfield development, new financing mechanisms may see a rise over this coming decade:

- As an increasing number of liquefaction projects are being developed by large, integrated oil and gas companies, balance sheet financing may become a viable option.
- Projects backed by smaller independent companies may turn to other large players along the value chain such as commodity traders and utilities.
- Institutional investors, including private equities, infrastructure funds and even special purpose acquisition companies (SPACs) (seeking to allocate capital into carbon-neutral projects with steady returns),

may be attracted by LNG projects that include components such as carbon capture and storage (CCS). The proliferation of tolling contracts (capex-for-opex-swaps), where liquefaction and/or regasification are carried out as a service by third parties, provides for a new kind of long-term contracts that completely isolates direct price-risk for project owners, providing for increased bankability.

Further flexibility in liquefaction and regasification facilities through the development of new technologies

Globally, liquefaction plants developed in the early 2010s required about twice the investment as today's projects (aprox. US $2,000/ton vs. aprox. US $1,000/ton). Such technology-driven cost advantages have led to the development of off-grid floating LNG infrastructure such as floating liquefaction, storage and regasification units that are facilitating the exploitation of otherwise commercially challenging natural gas resources and making the import of LNG less costly. In an additional evolutionary step enabled by decreasing unit costs, small-scale LNG (ssLNG) has evolved into a viable option for remote natural gas assets and remote end users alike. As carbon efficiency goals become increasingly a center point of energy policy, we expect ssLNG projects to become a vital pillar of the energy mix in certain regions that lack the scale and infrastructure for regular LNG projects.

Strength of LNG exports from the United States

The U.S. already is the third-largest LNG exporter behind Qatar and Australia, as it has seen its exports increase more than 15-fold in the three years before the COVID-19 pandemic. Going forward, the U.S. is expected to be the single largest contributor to the global supply growth of LNG, although global pressure to reduce emissions may impose some limitations. Particularly, limitations on the highly competitive shale gas supply, on construction permits for additional liquefaction trains and an increase in emission costs could threaten the U.S.' competitive market position.

Growing importance of the Asian market and its interrelationship with the European market

While the U.S. is driving the supply-side of the equation, Asia is the single largest demand market for LNG globally at aproximately 69%, and is expected to grow to 77% according to the International Energy Agency (IEA). The Asian market is characterized by (yet) mostly oil-price linked LNG-pricing agreements and poor import pipeline infrastructure, except for certain interconnections amongst China and Russia and the Caspian Sea. Meanwhile, the European LNG market is characterized by mostly gas-linked pricing mechanisms, broad natural gas import pipeline infrastructure and significant storage capacity. These differences amongst the Asian and European markets have led to a growing interrelationship, as Europe has become a buffer-market. In periods of excess supply from the U.S. to Asia, European stockpiles grow and absorb oversupply, while in periods of lacking supply, Europe suffers a withdrawal of cargoes destined for Asian markets.

Development of green LNG

Increased social and public policy pressure to set aggressive emission reduction targets will undoubtedly impact the LNG value chain. CO2-reducing projects such as large CCS projects to offset liquefaction plant's emissions have been discussed for the past years, particularly in Australia, where unitary CO2 emissions from LNG have increased by 41% since 2014, according to the Institute for Energy Economics and Financial Analysis (IEEFA). However, the release of methane, a main component of natural gas and 84 times stronger than CO2 as a greenhouse gas, is opening a new discussion amongst regulators, particularly in Europe. The resolution of emission pricing and trading and decreasing LNG's greenhouse gas footprint will determine the decarbonization potential of the industry.

LNG's new applications:

The potential for expanding global LNG trade will also depend on the evolution of emerging applications. If properly stimulated by supportive public policies, some of these applications may translate into a market expansion in the medium term:

- Bunkering, particularly as a result of the new IMO2020 standards. A decisive factor is going to be the cost of retrofitting of the existing vessel fleet.
- The expansion of the ssLNG value chain into retail-mobility with the introduction of truck loading and fueling facilities, currently seeing little development in Europe, but increasing popularity in the public transport sector in China.

The bottom line

The emergence of new business models and an increasingly complex market are clearly peeking ahead. In a relatively new and fast-evolving market that has set high expectations for (partial) decarbonization of the current global energy mix, regulatory and policy certainty is a fundamental requirement, that will allow sponsors, operators, fund managers and lenders as well as suppliers and buyers to meaningfully engage to deliver superior risk-adjusted returns to their respective shareholders, while contributing to global emission-reduction targets.

How Can Kroll Help Our Clients?

How Can Kroll Help

Kroll has a dedicated industry group with more than 100 full-time professionals, combining two essential key success factors in oil and gas transactions: (i) deep operational knowledge and market and legal understanding of the industry and (ii) corporate finance and accounting expertise.

We work with oil and gas organizations around the world to rationalize portfolios, raise private debt and capital, find cost reduction opportunities and successfully navigate regulatory and tax law changes.

The team has advised most major international oil companies, commodity trading houses, infrastructure and private equity funds on a variety of LNG-related transactions and strategic issues, ranging from M&A mandates, to full due diligence, valuation advisory, corporate reorganizations and capital raising.

Our team structure provides a flexible approach, and senior management is present throughout every phase of a transaction.

Buy-Side Advisory

From decision support to deal closing and beyond, Kroll supports its clients throughout the deal cycle. Combining market data with fundamental financial competencies, we support critical decision-making with essential advice a nd information.

We provide our clients with the information they need to make informed business decisions for buy-side transaction projects.

From strategy to execution, Kroll enables oil and gas companies to transact, grow and realize value with greater conviction and speed and the appropriate industry insights.

Sell-Side Advisory

Sellers may face tremendous pressure to drive maximum value by bringing
to market assets that are operationally optimized and transaction ready.

Whether the seller is looking to spin-off, carve-out an asset or sell an entire company or business unit, oil and gas companies should focus on selling assets in the same rigorous way they focus on acquisitions.

Kroll's team can help companies optimize their portfolio and improve divestment strategy and execution through the following vendor assistance actions:

- Assessing the strategy and portfolio management
- Drafting equity story development and delivery
- Executing complete due diligence as a one-stop-shop (financial, commercial, risk and compliance)
- Supporting the negotiation and closing

Private Debt and Capital

Kroll has long-standing relationships with the leading providers of private debt and equity capital and supports our clients in achieving an array of strategic objectives, including:

- Capital structure, capital raising and capital alternatives (recapitalization)
- Financial structuring
- Strategic planning
- Independent view on investment bank and equity research analyst selection, pricing, valuation and equity raising process

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