

U.S. LNG Exports Could Prove a Game Changer in the Global Gas Market

By Mamdouh G. Salameh

The U.S. shale revolution and the rising shale oil production have had a seismic impact on the global oil market contributing in no small measure to the steep decline in crude oil prices since July 2014. Equally U.S. liquefied natural gas (LNG) exports could have a similar impact on the global gas market possibly weakening further current low gas prices. The irony, however, is that without relatively higher gas prices, the potential and prospects of sizeable U.S. LNG exports could be restricted.

In December 2015, the United States Senate lifted the ban on U.S. crude oil exports. The historic decision sent a clear message to the rest of the world that America is ready to fully engage on the global energy stage.

Two months later, the Senate is approaching a final vote on another sweeping piece of legislation that would strengthen the United States' energy future by streamlining the federal approval process of U.S. LNG exports.¹

In a world of low energy prices, the cost of shipping LNG from the United States to Europe or Asia is prohibitively expensive. Countries such as Qatar, Algeria and Norway can export LNG to Europe at a much-reduced cost, pricing the United States out of the market. In Asia, Australia, Malaysia, Brunai and Indonesia export LNG at prices the United States can't match, at least for spot exports and short-term contracts.

The plunge in oil prices since the summer of 2014 has dragged down the value of LNG, which is often sold on oil-linked contracts and dampened the excitement over U.S. exports. The economics of shipping gas from the U.S. was compelling two years ago, but is now marginal. Deteriorating market conditions have put the brake on any new investments in U.S. LNG.

The growth of LNG production in the United States is a charged political topic because of the standoff between Russia and the West over the Ukraine. Russian energy giant Gazprom recently shrugged off the potential for U.S. LNG exports in European markets noting that Russia can beat the United States on price. But given the number of natural gas projects under construction in North America, it is only a matter of time before the United States becomes influential in global gas markets.

Though export costs make it difficult for the United States to enter European and Asian markets, should oil prices begin to rise, the linkage between LNG and oil prices in Asia will make the United States more competitive, and subsequently influential.

MAJOR HURDLES TO U.S. LNG EXPORTS

Future U.S. LNG exports will face stiff competition from leading exporters of LNG in the world, namely Qatar, Russia and Australia.

Qatar has the distinction of being the world's largest LNG exporter, accounting for 32% of global LNG exports, the third largest proven reserves of natural gas in the world amounting to 24.5 trillion cubic metres and the lowest production costs of LNG in the globe.² Qatar's LNG accounts for 80% of all LNG exports to Asia. Japan, South Korea, India and China are the main importers of Qatar's LNG.³

Qatar has exceptionally low LNG supply costs, very large scale plants, ships and marketing operations. Additionally, the plants are already constructed so there is no exposure to rising costs or overruns.

However, Qatar faces formidable challenges: First, a changing landscape in the global LNG market with more competitors entering the market and the emergence of new LNG-exporting hubs. Second, the increase in supply will lead to lower prices. Third, the availability of alternative supplies in Asia will allow buyers to negotiate hard over long-term supply contracts.

In Asia, Qatar faces challenges from Australia and eventually the United States. Australia is the biggest rival in the Asian market and will likely continue to be so. In 2014, Qatar exported 77.4 million tons of LNG while Australia exported 20.8 million tons.⁴

However, Qatar's main advantages are its geographical location between main markets in Asia and Europe and its reputation for reliability. There are also disadvantages like its long distance from East Asian buyers relative to Australia.

As the world's lowest-cost producer of LNG, Qatar may be more able to withstand lower prices than

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See footnotes at end of text.

many of the new supply points coming online, a new report by Standard Chartered Bank has shown. The key for Qatar in the long run is to ensure it maintained market share by adapting rapidly to changing market dynamics.

Qatar does not have any plans to extend capacity soon so it cannot deter new entrants into the LNG business. However, Qatar's response has been buying up the competition.

Still, Qatar faces diminished market share and the possibility of lower prices just as the country embarks on \$200 billion of infrastructure spending before hosting the 2022 soccer World Cup.

When it comes to attempting to undermine Russia's pipeline exports to Europe, the United States is at a disadvantage. Natural gas transportation by pipeline is significantly cheaper in most cases than building and employing expensive LNG port infrastructure. In terms of natural gas production and distribution, Russia's operating costs are low and their export infrastructure is already built. Some of Russia's most important markets, including those in Central Europe, already have spot prices around \$6.60 per one million British thermal units (mmBtu). Even now Russia's natural gas prices have not bottomed out and prices at LNG hubs remain just as low.

While Qatar will continue to be one of the world's largest producers and exporters of LNG well into the future, Australia could overtake Qatar to become the world's largest exporter of LNG by 2020. Against Qatar's 77 million tonnes of LNG production capacity, Australia will have 85 million tonnes by the end of this decade, and by the mid-2020s the U.S. may have built a production capacity of 50 million tonnes or more.⁵

However, Australia is a much higher-cost producer than Qatar and doesn't act strategically since its LNG industry is split between many different companies. Qatari LNG will continue to be very profitable, but prices will decline and it won't be able to be the swing producer or strategic player anymore.

Plunging global oil prices may turn hopes for cheap LNG supplies from the United States into a costly disappointment for Asian buyers. The steep slide in crude oil prices since June 2014 has exposed cracks in the assumption by Japan and other Asian buyers that cheap U.S. LNG would muscle into high-value Asian energy markets from 2016. The oil price drop has raised the possibility that some U.S. Gulf Coast LNG export plants may be mothballed before they ever get a chance to supply world markets.

When Brent crude was selling at \$100/barrel, oil-linked natural gas contracts typically would translate to around \$14 per mmBtu, giving U.S. LNG a big price advantage. This advantage has disappeared with the recent decline in crude oil prices. With crude at \$38/barrel, LNG indexes to \$5.32 per mmBtu. U.S. LNG producers have been targeting prices of \$11 or \$12 per mmBtu to be profitable.⁶

Global LNG balances are easing fast, shifting the market's concerns from how demand can be met to how supplies can be absorbed, the International Energy Agency (IEA) said in its latest medium-term gas report. The shift, it said, "will shape LNG markets over the next few years."

A total of 164 billion cubic meters (bcm) of additional LNG export capacity will be operational globally by 2020, adding 40% to current levels, the IEA forecasts. Australia will add 44% of the new supply, becoming the world's largest LNG exporter by the end of the decade. The U.S. will be the second-largest contributor, adding 35% of the new capacity, ranking third as an exporter behind Australia and Qatar. As the gas gushes, Asia's LNG market is being transformed.

Today, buyers have a choice. They can buy LNG at an oil-linked price or at a Henry Hub-linked price or on a European gas-based price. Prices at the Henry Hub, a storage and delivery point in Louisiana, are considered the benchmark for all U.S. natural-gas pricing.

As things stand, Australia is on track to dethrone Qatar as the world's top LNG producer and exporter by 2020 provided there is no slackening in Australia's huge investments in its LNG industry as a result of the glut in the market and the continuing decline in gas prices.

Existing contracts coming out of the United States are based on Henry Hub spot prices index, with a fixed fee added for liquefaction and transportation costs. U.S. energy company, Cheniere, has signed several 20-year contracts for its Sabine Pass LNG facility, located in Louisiana, on the border with Texas. The contract terms typically run about 115% of the price of U.S. natural gas (currently \$2.81 per mmBtu with an additional \$3.00 for liquefaction fees). After other charges for shipping, insurance and regasification are factored in, the total cost of U.S. natural gas at LNG terminals in Europe is anywhere from \$7 to \$8 per mmBtu. In short, the United States is only marginally competitive at current LNG prices and can't beat Russia's low potential operating costs.⁷

The same disadvantages the United States faces in Europe also apply to Asia. LNG prices in South Korea, China and Japan are about the same as they are in Europe, only the cost of shipping is more because of the longer distances involved. With new LNG export capacity coming online in Australia, the

United States has to compete with projects that are as capital intensive but closer to their export markets.

U.S. SCALE OF INFLUENCE

Whilst the United States does not threaten Russia's market share in Europe or Qatar's or Australia's in Asia, the potential for U.S. LNG exports does improve Europe's leverage against Russia by providing an alternative source to draw from. Moreover, it helps create an LNG price ceiling when negotiating with Russia or other suppliers of natural gas. In time, the growth of North American LNG will force traditional import partners to undercut the price of new sources of natural gas.

The exact scale of U.S. LNG exports is unclear and largely dependent on price. Most likely exports will be in the order of 50 bcm, a sizeable addition to the global LNG supply. In addition, between now and 2020, the United States and Australia alone could increase the global LNG supply by as much as 150 bcm; the market in 2013 was just 325 bcm.⁸ The Sabine Pass LNG facility will ramp up production later this year, but other facilities still under construction will not see first production until 2017 or 2018 at the earliest. Russia and other competitors still have a few years to secure markets and undermine potential U.S. LNG contracts by offering lower prices.

The global growth of LNG markets will help European markets move away from contracts indexed to oil prices, as an alternative to creating natural gas pricing hubs. This will eventually enable natural gas and oil prices to decouple, as is the case in the United States. Even Russia has begun transitioning in some cases, the most notable example being Gazprom's May 2014 deal with Italy's ENI basing it on spot prices instead of Gazprom's preferred oil-indexed contracts.

Should oil prices rise, Asian LNG prices would see the biggest change, dominated as they are by oil-indexed long-term contracts. Because the Asian market is roughly five times the size of Europe's, most of the contracts signed by U.S. LNG exporters have been with the region. South Korea, China and Japan are also three top importers, offering more potential and greater opportunity.

The United States is also in a position to exploit local markets in need of natural gas such as Brazil, Argentina and Mexico, countries far away from LNG suppliers.

With all these factors in mind, the five U.S. LNG projects that are already under construction will eventually come online, much like those under construction in Australia. But many U.S. projects without final investment decisions may not be built at all.

Ultimately, the United States will not be able to compete with Russia in Europe and Qatar and Australia in Asia directly. Even so, U.S. LNG exports are likely to have a significant impact holding down energy costs for consumers in Europe, Latin America and Asia. They will also provide tough competition for anyone hoping to build rival LNG plants such as the proposed projects in East Africa, the West of Canada or Russia.⁹ By the end of the decade, the U.S. is likely to be the world's third-largest exporter of LNG after Qatar and Australia (see Figure 1).

Combined with the new supplies from Chevron's huge Gorgon and Wheatstone projects in Australia, which are scheduled to come on stream this year, exports from the U.S. are making it a buyers' market for LNG.

A decade ago, this prospect seemed wildly unlikely. U.S. gas production was in decline and by the 2010s the country was expected to be a large importer of LNG, not an exporter. The shale revolution, the result of advances in production techniques that made it possible to extract gas at commercially viable rates from previously unyielding rocks, meant that U.S. production started rising again in 2006, and since 2011 it has been breaking new records every year.

The U.S. Department of Energy has received applications to export LNG from 54 projects. If they all went ahead, they would have the capacity to liquefy about 60% of the entire gas production of the U.S.¹⁰

So far, however, just five plants have started construction: Cheniere's Sabine Pass and its Corpus Christi project in Texas; Freeport LNG, also in Texas; Cameron LNG in Louisiana; and Cove Point LNG, on the east coast in Maryland.

Those projects have been able to make progress because they were fast enough at signing up customers on long-term contracts that guarantee their revenues. Since the end of 2014 those customers,

LNG Production

Estimated output (m tonnes)

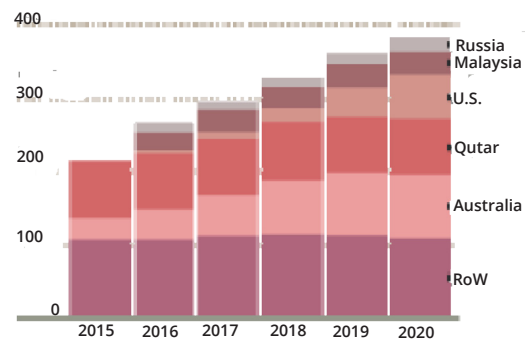


Figure 1

Source: Courtesy of Wood Mackenzie

mostly utilities in Europe and Asia, have been reluctant to make any further commitments.

CONCLUSIONS

The shale revolution has made the United States the world's third biggest crude oil producer after Russia and Saudi Arabia and it is projected to make the United States, within 2-3 years, the world's third biggest LNG producer and exporter after Qatar and Australia.

Whilst the United States does not threaten Russia's market share in Europe or eventually Qatar's or Australia's in Asia, future U.S. LNG exports will have a positive impact on the U.S. economy and will significantly help hold down energy costs for consumers in Europe, Latin America and Asia. They will also improve Europe's economic and geopolitical leverage when negotiating new deals with Russia.

Moreover, U.S. LNG exports will help create an LNG price ceiling and will also provide tough competition for anyone hoping to build rival LNG plants such as the proposed projects in East Africa, the West of Canada or Russia.

Footnotes

¹ Brigham A. McCown, *U.S. Energy Exports: First Comes Crude, Then Comes LNG*, accessed on 16 March 2016 on: <http://www.ft.com/cms/s/0/f1773832-b5ee-11e5-b147-e5e5bba42e51.html#ixzz434mCujfX>.

² BP Statistical Review of World Energy, June 2015, p. 20.

³ Ibid., p. 28.

⁴ Mamdouh G Salameh, *Australia Chases Qatar's Gas Crown*" (an article published by the Crawford School & the Asia & the Pacific Policy Forum of the Australian National University on 25 September, 2015).

⁵ Ibid.,

⁶ Ibid.,

⁷ *How U.S. LNG Production Will Ultimately Exploit Global Markets* accessed on 16 March 2016 at: www.stratfor.com.

⁸ Ibid.,

⁹ Ibid.,

¹⁰ Ed Crooks, *Cheniere Energy's shipment turns US into gas exporter*, Oil & Gas Journal, January 10, 2016.

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