

SUPPLY/DEMAND

Despite Short-Term Obstacles, Long-Term Fundamentals Said Strong for U.S. LNG



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Faced with political headwinds and an increasingly competitive global market, U.S. liquefied natural gas (LNG) developers remain undeterred as they look to opportunities on the horizon with the world sailing into a lower-carbon future.

That's the outlook shared by U.S. LNG executives during a panel at last week's North American Gas Forum.

Trade tensions between the United States and China have created obstacles for developers looking to ink deals with one of the most important buyers in the global market, and the rhetoric coming from the U.S. presidential debates has raised the prospect of **future regulatory risks**.

Still, Cheniere Energy Inc.'s Senior Vice President Christopher Smith, who heads policy, government and public affairs for the Houston-based LNG developer, described a company vision focused on the bigger picture. The business cycle generally lasts longer than the political cycle, he said.

"The demand and supply fundamentals are going to remain intact," Smith said. "We see a value proposition between the U.S. and markets in Asia, including China. Those opportunities will continue to unfold."

But opportunities for U.S. LNG developers in China have been limited by the trade conflict between Washington, DC, and Beijing, at least for projects like Magnolia LNG that are looking to finalize offtake agreements and reach a final investment decision (FID).

That's according to Greg Vesey, CEO of LNG Ltd., which is developing the Magnolia project near Lake Charles, LA.

"From a developer's standpoint, the market is still very tough," Vesey said. "In our case, we made a big push into China ...cont' pg. 2

INFRASTRUCTURE

'We Might Think These Were the Good Times' as Political Fortunes Dip for Fossil Fuel Projects

Building natural gas infrastructure has become increasingly challenging in recent years, forcing developers to adapt, but the already fraught political and regulatory environment in the United States could become even more inhospitable for fossil fuel projects moving forward.

That's according to ClearView Energy Partners LLC's Kevin Book, managing director, who spoke during a panel Tuesday at the 2019 North American Gas Forum in Washington, DC. Book didn't shy away from outlining some of the potential policy shifts on the horizon given climate change risks and public sentiment that appears to have turned against fossil fuels.

"If you go back to the 2008 presidential election, you heard a lot of 'drill, baby, drill,' and now you have 11 of 12 [Democratic challengers] in the last debate saying they want to end production on federal lands," Book said, adding that some candidates want to ban hydraulic fracturing altogether. "Nevermind that there ...cont' pg. 3

INTERNATIONAL

Constraining Natural Gas in Developing Nations Said to Raise Ethical Questions

Climate change is driving debate in developed countries over the role of natural gas and other fossil fuels in the future energy mix, but in the context of global energy access, a strictly anti-hydrocarbon policy might be not only impractical but unethical.

That's according to Energy For Growth Hub Executive Director Todd Moss, who spoke about the challenges to reducing energy poverty around the world during a panel at last week's North American Gas Forum in Washington, DC.

In Africa, countries such as **Mozambique** are attracting upstream investment in their natural gas resources even as it's become "harder and harder to attract downstream investment in the power sector," Moss said.

In a world where "the gaps of energy equality" between developed ...cont' pg. 2

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...INTERNATIONAL – Constraining Natural Gas in Developing Nations Said to Raise Ethical Questions, pg., 1

and developing nations “are mind-bogglingly large,” for the United States or Europe to exert pressure on energy-poor countries to swear off fossil fuels is both hypocritical and counterproductive, he said.

“Gas is going to be very relevant for a lot of countries, especially those that are going to be producing it themselves...and those countries that are intending to have very high levels of intermittent renewables, wind and solar. Gas pairs very well with them,” Moss said.

“...Trying to constrain natural gas in Africa, obviously there are local environmental issues that matter, but as a global climate issue, we need to think about it slightly differently. Constraining gas in Africa cannot work. It would be ineffective as a mitigation strategy, and that is because Africa is just way, way too small.”

Speaking on the same panel, The World Bank Group’s Christopher Sheldon, practice manager for energy and extractives, said questions of equity and social justice are “critically important” when discussing energy access around the globe.

“We know that having access to electricity is essential” for reducing poverty, Sheldon said. “At the same time, we have this climate challenge where we want to bring the best of technology to those countries so that maybe they can leapfrog ahead of some of the development markers that some of the Western nations had.”

Both the economic and environmental issues need to be addressed “simultaneously, and that is very, very challenging.”

The World Bank has said it intends to **end financing** for upstream oil and gas projects after 2019. Sheldon said his organization views natural gas as a transition fuel, although he said doesn’t have an answer for how long that transition should last.

“There are some places where it might not make any sense at all to be doing natural gas and other places where it makes a lot of sense,” Sheldon said. “So I think it’s very difficult to have these black and white conversations” on fossil fuels. “But if the direction is one of improving energy access, particularly for the poor, that’s reducing emissions in that country, that’s combined with a lot of other positive efforts that bring in cleaner energy, that’s a fairly positive story that we can tell. That’s the kind of conversations I’m seeing happening higher up on the board.”

Pointing to other technologies such as battery storage, he said, “We have to work all those pieces together. I feel like that’s the solution. It’s very difficult for me when I hear a poor African country almost apologetic that they will have power” derived from fossil fuels “knowing that the percentage of carbon that they’re emitting in their country is so small and yet the energy needs of their country are so great...that just doesn’t seem right to me.”

Considering the consumption -- much of it enabled by fossil fuels -- in the energy-wealthy United States, Moss said there is “a lot of hypocrisy, I think, in some of the U.S. policy stances” related to energy and the environment.

“California I think of as the epicenter for U.S. environmental policy. In California, playing video games consumes more electricity” than entire nations in Africa. “Just playing video games,” he claimed. “Californians consume more electricity for their swimming pools and hot tubs than the entire country of Senegal.”

Policy makers should start with the assumption that developing nations will make every effort to provide their citizens with modern

lifestyles and well-paying jobs, then ask what kind of energy that will require, according to Moss.

“I think we should take as a given that what countries want to do is what they’re going to do and that they’re also going to exploit their own endowments,” Moss said. “For the countries that have gas, or where gas should be part of the mix, I think we have to stand up for that” and not allow anti-fossil fuel arguments to get in the way.

The world’s poorest are least responsible for climate change and are expected to be most vulnerable to its impacts, he noted. “But the idea that that means they have to live a low-energy lifestyle isn’t better.

“That’s actually compounding the issue, because energy’s part of the climate problem, but energy’s crucial to adaptation solutions. That’s good for companies that are trying to build new markets. New markets are going to be in Asia and Africa,” Moss said.

“It’s also good for global poverty and for people living in those countries. I think we have to just push back against facile arguments that take two steps there but miss it on the last step.” ■

...SUPPLY/DEMAND – Despite Short-Term Obstacles, Long-Term Fundamentals, pg., 1

last year. With the advent of the trade wars, we’ve struggled to get through. The good news is we’re always looking around the rest of the world at the same time, and that the rest of the world is continuing to understand that.

“I think one of the things you’re seeing is a wave of momentum across the rest of the world. They don’t want to experience what China is experiencing. They want to get along with the U.S. and focus on the trade imbalance. That led to more successes this year.”

Earlier this year, Magnolia reached a **proposed agreement** to sell a quarter of its capacity to Singapore’s Delta Offshore Energy Pte Ltd. If finalized and a positive FID is made, about 2 million metric tons/year would be supplied to Delta on a free-on-board basis for at least 20 years to fuel a power plant in Vietnam.

China remains “very engaged at a business level” even as “they can’t execute” under the current regulatory environment, Vesey said. China is “a huge buyer, so it’s very important to stay engaged with them as well.”

A huge buyer indeed.

Smith said he expects China to remain a major source of LNG demand growth going forward.

“The growth wedge is going to continue to be in Asia... the ways that demand has diverged from previous forecasts has largely been China, so we think China’s going to continue to be important as an incremental source of demand,” he said.

As for the impact of potential policies to address climate change, Smith said long-term projections on global energy trends show the ratio of natural gas in the energy mix remaining stable.

“There are other things that happen in terms of increased amounts of renewables, wind and solar, less coal,” Smith said. “But the place for natural gas and LNG, most models that we see show there’s going to be an opportunity in the future for this industry.”

Efforts to decarbonize the global economy could be a key for driving demand of LNG, according to Vesey.

“I think the biggest opportunity is coal replacement,” he said. “When you look across Asia, they’ve looked at what ...cont’ pg. 3

2019YTD* U.S. Export Cargoes of Domestically Produced LNG

Destination Country	Source Terminal				Total
	Sabine Pass	Cove Point	Corpus Christi	Cameron	
South Korea	40	0	3	0	43
Mexico	28	3	2	0	33
Japan	7	20	0	4	31
Spain	17	4	5	0	26
Chile	16	2	1	1	20
Brazil	11	5	3	0	19
Argentina	7	3	8	0	18
India	12	3	2	0	17
France	11	1	3	1	16
Netherlands	4	2	9	0	15
Italy	9	0	5	0	14
Portugal	8	0	4	0	12
Jordan	7	0	1	0	8
Singapore	7	1	0	0	8
Poland	6	1	0	0	7
Turkey	6	0	0	0	6
U.K.	4	1	1	0	6
Taiwan	3	0	0	2	5
UAE	5	0	0	0	5
Jamaica	3	0	1	0	4
China	2	0	1	0	3
Colombia	3	0	0	0	3
Kuwait	3	0	0	0	3
Pakistan	2	0	1	0	3
Panama	0	3	0	0	3
Dominican Republic	2	0	0	0	2
Greece	0	1	1	0	2
Belgium	0	1	0	0	1
Malta	1	0	0	0	1
Thailand	0	1	0	0	1
TOTAL CARGOES	224	52	51	8	335

*Data through August 31.

Source: U.S. Department of Energy, NGI calculations

we've done here in the U.S., and while it's not a perfect answer, it's a really good start from an emissions standpoint. So you're looking at a desire for replacing a lot of coal."

There will also be opportunities for LNG to supply energy for countries looking to generate more electricity to lift their citizens out of poverty, Vesey said.

On the supply side, the growth in production coming out of the U.S. onshore has opened up new ways of looking at the value chain for Cheniere, according to Smith.

"We see a new supplier push that is changing the way we're thinking about LNG and moving natural gas, some of these integrated producer push models, where we're able to go to a producer and give that producer access or exposure to international LNG prices," the executive said.

This arrangement has the potential to benefit both the producers and the LNG industry, he said.

As for the risks to natural gas posed by anti-fossil fuel policy stances among the 2020 U.S. presidential candidates, Smith said LNG is a "decadal business," and companies operating in the space will need to remain focused on the long-term trends likely to endure beyond any political cycle.

"We could argue one way or the other what happens" if a particular candidate wins the U.S. presidency, "but over the long run, the fundamental drivers remain the same. The fundamental pressures remain the same," Smith said. "...We have to think about how we fit into the lower-carbon economy of the future. We have to think about how we emphasize and capture opportunities."

Smith also emphasized the need for the industry to communicate its role in that lower-carbon future.

"The arrow's going in one direction in terms of the need to reduce the carbon intensity of the populace. There are, I think, concerns in the current environment about what negative things that might portend," Smith said. "...It's important for us to communicate that in a way that's effective. We've got a great story to tell...there will be some challenges domestically, but overall, I think there's an opportunity for natural gas to ensure it plays a role" in reducing carbon emissions. ■

...INFRASTRUCTURE – 'We Might Think These Were the Good Times', pg. 1

are some laws to pass before that's a feasible thing.

"...The permitting challenges of the present, the headwinds on the horizon, it's not to say that these are necessarily for everyone all the time good times," he said. However, looking at today versus the industry in 2008, "we might think these were the good times for infrastructure in the U.S."

During the same panel, LawIQ CEO Chip Moldenhauer said developments in recent years the stepped up legal sophistication and resources for environmental opposition groups and state governments have become "far more active" litigiously and have made the "incredibly complicated" process of building infrastructure even moreso. This has forced companies to become more proactive.

"In the days of old, three, five, 10 years ago, the majority of these companies used legal and regulatory more as a shield," Moldenhauer said. "What we've found is that legal and regulatory departments are trying to play more what-if scenarios to ensure that permitting is really locked down as far ahead of time as possible."

Companies are looking at what legal or regulatory obstacles could arise, such as those associated with the Endangered Species Act, according to Moldenhauer.

...cont' pg. 4



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In the current environment, building infrastructure doesn't just require skilled labor or technical expertise, it requires "another great big room full of lawyers," according to Book. "I think it's the new normal, and it's reasonable to expect it to continue under almost any environment. Knowledge doesn't get unlearned."

Antero Corp.'s Steve Woodward, senior vice president of business development, said it falls to the industry to be more proactive in communicating with the public to dispel misconceptions about energy and fossil fuels.

"I look at it as an obligation we all have in the industry every day to make sure the communication is out there," Woodward said. "...In the energy pageant of the world, the winner this year and many years recently has been misinformation. It's up to us to make sure that doesn't perpetuate."

As debates arise over how best to address climate change, "I think we all have to come to an honest conclusion as to what the priorities of the different energy sources are and what has the lowest impact and trust the data and work together to communicate that," he said.

Opposition Expands

Book framed the current political debate in the United States over the future of fossil fuels, where some Democratic presidential candidates have staked out positions against oil and gas development, as a sign that the country has "prospered significantly in energy."

"We're starting to see opposition show up in places where it hasn't been, and that's partially because the country is richer and energy is a smaller part of our wallet share," Book said. "There are new ways to think about energy as a given. Maybe we shouldn't be so comfortable with it, but we are. It's produced opposition that wouldn't necessarily have been there where there was more economic risk."

Of course, the debate over the role of natural gas in a lower carbon future does not end at the U.S. border.

"It's not just what's happening inside the country that matters, it's also what's going on in the world," Book said. "...Gas as a solution is an equal part, if not a large part, of the climate risk story for a lot of countries that are going to be buyers" of liquefied natural gas from countries like the United States. "But building the infrastructure to convey the gas to those markets" may only continue to increase in difficulty.

When the proverbial political pendulum swings back in the other direction, "it's going to look less like a pendulum and maybe a little more like a catapult," but even without a "political polarity shift" the prospect of carbon pricing in the United States carries "non-zero odds" depending on what overseas trading partners do, according to Book.

"Is it impossible that the U.S. might find itself in a place pricing carbon in the next five or 10 years...because our trade partners have put one on?" he said.

A proposal to ban fracturing in the United States might grab more headlines, but Moldenhauer said the greater political risk for the natural gas industry could come from political polarization at the Federal Energy Regulatory Commission. Under a hypothetical Democratic administration, the industry could find itself "looking at three very anti-fossil fuel commissioners" by the summer of 2020.

For companies that have already built infrastructure, "maybe that puts you in a very good position," Moldenhauer said. "If you're other companies looking to build infrastructure, it might put you in a very negative position."

As for the commonly used claim that fossil fuel infrastructure shouldn't be built because it locks in decades of future consumption, Book said it may be "a really well-founded argument" but it could ignore the broader context of the global energy system.

"Stuff's built to last, and if you're putting it in place, maybe you're going to be moving hydrocarbons for the next 40-50 years," Book said. "The answer is yes, and that's not a bad thing. What you have to do is contextualize it against the vastness of energy demand globally and ask, where are the right resources, and where do they have to go to get to the right markets?"

There are no "serious, legitimate forecasts" about global energy demand concluding that the world won't need any more Btus moving forward, Book said.

"We're going to need a ton more," he said. "So yes, there is a necessary understanding. We're not done with hydrocarbons by any means. And actually, some of the infrastructure we may end up building may end up conveying supercritical" carbon dioxide back into the ground to a "stable rockbed well below the surface. People who take stuff out of the pores might be part of putting it back in later in the future. It's a good skill set to have." ■



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