MIDSTREAM Monitor

OCTOBER 5, 2018 | VOLUME 36 | ISSUE 40

FEATURES

High Hopes For LNG Canada

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The $40 billion LNG Canada two-train project and the $6.2 billion Coastal Gaslink pipeline to northeast British Columbia both received positive financial investment decisions (FID) Oct. 1, raising hope in Canada's beleaguered energy sector that better days are ahead.

Just as important as the economic benefits of the project is the way both projects partnered with indigenous communities on the West Coast and along the pipeline route, earning political support that should help avoid the ferocious opposition that has plagued crude oil pipeline projects in both western and eastern Canada.

The market for Canadian LNG is Asia, especially China, where a combination of natural gas and renewable energy is now the preferred option to generate electricity for the country's rapidly growing economy. The Canadian Association of Petroleum Producers (CAPP) estimates that by 2040 global gas consumption is expected to increase 4% to 199 billion cubic feet per day (Bcf/d). That demand explains why project lead Royal Dutch Shell is partnering with Malaysia's

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Petronas, PetroChina Co. Ltd., Korea Gas Corp., and Japan's Mitsubishi Corp.

"The project's "competitiveness, low carbon emissions and relatively short shipping distance to China mean LNG Canada can help supply the increasing demand for gas in China," said PetroChina CFO Wei Gao, in statement.

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The decision was welcomed by the Canadian government, the target of industry anger for recent legislation that would remove pipeline environmental assessments from the National Energy Board (LNG Canada was approved in 2014 under existing rules).

The announcement "represents the single largest private sector investment project in Canadian history. It is a vote of confidence in a country that recognizes the need to develop our energy in way that takes the environment into account, and that works in meaningful partnership with Indigenous communities," Prime Minister Justin Trudeau said in a statement.

"The final investment decision taken by our joint venture participants shows that British Columbia and Canada, working with First Nations and local communities, can deliver competitive energy projects," said Andy Calitz, CEO of LNG Canada, which will build two processing units or "trains," with first LNG expected by 2025.

Shell: Energy Future That Relies On Renewables

HOUSTON—A Royal Dutch Shell Plc (NYSE: **RDS.A**) executive mapped out an efficiency-driven world's road to a net-zero emissions future on Oct. 2 at Rice University.

Achieving the goals of the 2015 Paris Agreement on climate change won't be easy, either from technological or political perspectives, Wim Thomas, Shell's chief energy adviser and head of the company's energy analysis practice, said during a presentation at the Baker Institute for Public Policy.

However, Shell's **Sky Scenario** is both doable and affordable, he said. Following the plan modeled by Shell's team, the world could achieve the Paris Agreement goal of an average global temperature of less than 2 degrees Centigrade above pre-industrial levels.

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"Sky relies on a few things to happen, and they aren't there yet but they are getting there," Thomas said.

The scenario describes much more reliance on electricity in transportation and a much greater reliance on renewable fuels instead of fossil fuels for power generation. That would require significant cost reductions for wind and solar power, but Thomas sees that trend moving forward quickly.

"In the North Sea, the next auctions are basically subsidy-free and pretty soon they will have to bid—pay governments—to get a license for an offshore wind farm," he said. "So, it's getting to be a completely normal business there."

By the mid-2020s, he said, renewables will be the cheapest way to generate electricity. Around that time, Shell's analysts believe that oil consumption could peak. **—JOSEPH MARKMAN | HART ENERGY**

FRAC SPREAD

Don't Panic Over Gas Storage … Yet

JOSEPH MARKMAN | HART ENERGY

Now is not the time to panic.

The preceding sentence may not be the most reassuring method of beginning this weekly feature but it does acknowledge that those who track natural gas storage in the U.S. might be inclined to, well, panic. That's because the approaching winter coincides with a severe storage deficit relative to recent years.

CURRENT FRAC SPREAD (CENTS/GAL)

OCTOBER 5, 2018	Conway	Change from Start of Week	Mont Belvieu	Last Week
Ethane	13.58		49.95	
Shrink	19.01		20.35	
Margin	-5.43	-33.06%	29.60	9.36%
Propane	78.80		107.61	
Shrink	26.27		28.11	
Margin	52.53	1.64%	79.50	1.61%
Normal Butane	103.38		127.43	
Shrink	29.74		31.83	
Margin	73.64	14.28%	95.60	6.07%
Isobutane	127.90		130.85	
Shrink	28.57		30.57	
Margin	99.33	2.93%	100.28	1.36%
Pentane+	144.50		161.70	
Shrink	31.81		34.04	
Margin	112.69	11.98%	127.66	3.40%
NGL $/Bbl	30.26	7.07%	41.65	3.70%
Shrink	10.48		11.21	
Margin	19.78	10.74%	30.44	3.92%
Gas ($/mmBtu)	2.87	0.77%	3.07	3.12%
Gross Bbl Margin (in cents/gal)	45.24	10.18%	71.27	3.82%
NGL Value in $/mmBtu (Basket Value)				
Ethane	0.75	26.33%	2.75	6.73%
Propane	2.74	1.35%	3.74	2.00%
Normal Butane	1.12	10.04%	1.38	5.31%
Isobutane	0.80	2.44%	0.81	1.77%
Pentane+	1.86	9.30%	2.09	3.34%
Total Barrel Value in $/mmbtu	7.26	6.95%	10.76	3.84%
Margin	4.39	11.41%	7.69	4.13%

Price, Shrink of 42-gal NGL barrel based on following: Ethane, 36.5%; Propane, 31.8%; Normal Butane, 11.2%; Isobutane, 6.2%; Pentane+, 14.3%, Fuel, frac, transport costs not included. Conway gas based on Midwest region, Mont Belvieu based on Houston region. Shrink is defined as Btus that are removed from natural gas through the gathering and processing operation.

"Production continues to expand and infrastructure continues to be added to improve the exploitation and distribution of the growing production," **EnVantage Inc.** said in a recent report. Speak those words aloud in a calm, soothing voice, seated below your wind chimes with a cup of chamomile tea within reach.

Feel better? Good. Here's more from the report:

"With all of that being said, and recognizing the growing production levels, the low storage levels [both in the U.S. and Canada] and growing demand [from domestic and exports] could place interesting challenges on supplies as the coming winter progresses."

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Nothing kills a "Kumbayah" moment like the phrase, "*interesting* challenges."

In the week ended Sept. 28, storage of natural gas in the Lower 48 experienced an increase of 98 billion cubic feet (Bcf), the U.S. Energy Information Administration **reported**. The figure, compared to the Bloomberg survey's consensus average of 88 Bcf, resulted in a total of 2.866 Tcf. That is 18.2% below the 3.502 Tcf figure at the same time in 2017 and 17.5% below the five-year average of 3.473 Tcf.

Of concern to EnVantage is that U.S. natural gas storage could enter winter as much as 300 Bcf below the five-year average minimum level. The impact on prices will depend on the weather. Mont Belvieu, Texas, propane hit another high for the year by registering its sixth straight week above $1 per gallon (gal). While the price is at a 51-month high, propane is still a relative bargain.

OPEC: IMO 2020 To Spur One-Off Oil Demand

A sulfur cap on global shipping will go into effect in January 2020, an effort by the International Maritime Organization (IMO) to reduce emissions in the marine sector. While that target will directly disrupt shippers and refineries, the implementation of IMO 2020 will provide a one-off spur for oil demand while harming heavy crude producers in the process, OPEC said in its "World Oil Outlook 2040" report released on Sept. 23.

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The rule limits the sulfur content in all bunker fuels from 3.5% to 0.5% in January 2020. While the regulation will hit the refining industry, OPEC said that it expects the rule to "likely affect overall demand levels, especially in the one to two years following its implementation."

"In order to produce sufficient volumes of middle distillates, the global refining system is expected to increase runs by around 0.4 million barrels per day (MMbbl/d) in 2020 [additional to the case if no IMO regulations were adopted]," OPEC said in the report. **—MARY HOLCOMB | HART ENERGY**

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