A few bright prospects for Western Canadian NGL and Petrochemicals

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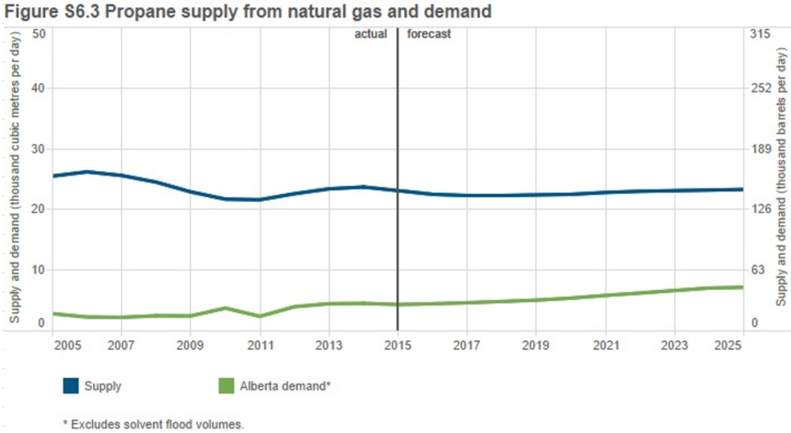
There has been a lot of movement in Western Canada's natural gas midstream industry despite challenging market conditions, including bearish natural gas prices, continued competition from U.S shale production, and a lack of global market reach through LNG/LPG export. Natural gas midstreamers still see long-term opportunity in Western Canada, and it is an opportune time to save on skilled labour costs by proceeding with projects in stronger, but still fragile markets for oil.

Two major deals occurred in Q3 2016: Inter Pipeline purchased William Cos. Inc's Canadian NGL portfolio, and Enbridge merged with Spectra Energy to become North America's largest energy infrastructure company. An Enbridge-Spectra merger would create an entity worth an estimated $165 Billion CDN. The deals represent a continued trend in Western Canada's natural gas industry, as players cope with restructured natural gas flows and growth that is more centered on intra-Alberta industrial demand versus exports.

Likewise, diluent demand remains a strong driver of Montney and Duvernay liquids production in West Central Alberta and Northeast B.C. Veresen Midstream/KKR, Pembina, Keyera and SemCAMs continue to capture this growing demand with new field plant, fractionation, storage and pipeline capacity. Despite the drop in global oil prices, oilsands producers still require an increasing supply of diluents, like pentanes plus, to transport bitumen through pipelines to Western Canada, Ontario and the United States markets. About 850,000 bpd of new bitumen production capacity is coming online between 2015 and 2019. The Alberta Energy Regulator (AER) expects Alberta's demand for diluents to exceed 655,000 b/d by 2019, up from over 550,000 b/d in 2015. About 188,000 b/d of pentanes plus volumes were sourced from Alberta in 2015.

Finally, despite a complete change in economic environment, underlying conditions remain that would benefit a new petrochemical development in Alberta. An abundance of cheap propane feedstock could stay long term, driven, in part, by condensate demand for oilsands diluent, current lack of West Coast export capacity, and the explosion of competing NGL production (including propane) in the United States. The NEB anticipates that Western Canadian field propane volumes will increase by 15 k b/d to 185 k b/d in 2019. As shown by the AER, Alberta will continue to produce a large majority of that supply.

Figure S6.3 Propane supply from natural gas and demand



To date, 16 project proponents have applied for the Alberta Government's $500-million Petrochemical Diversification Program, which seeks to expand methane and propane value chains in the Province. While the Alberta Government continues to assess program applications, Inter Pipeline and a separate joint venture of Pembina and Kuwait-based Petrochemicals Industries Company (PIC) continue to assess viability of propane-based petrochemical projects in Alberta. For Inter Pipeline and Pembina, proceeding with petrochemical development would advance their value chain beyond being just a feedstock transporter. However, a few hard questions remain:

1) Is the Petrochemical Diversification Program enough of an incentive to help offset costs associated with the new carbon tax?
2) What will the market for propylene and polypropylene look like after competing Gulf Coast plants are fully constructed and operational? Will the global market be able to absorb new volumes from Alberta projects in the coming decades?
3) How much LPG export capacity will be constructed on Canada's West Coast?

On a side note, Statistics Canada has reported that Alberta's E.I. recipients have crested, and are below 87,000 in August 2016, from above 100,000 earlier in the summer. Hopefully, the downward trend continues with the addition of new jobs.

Acquisitions:

In September 2016, Enbridge merged with Spectra Energy, making the new entity---Enbridge---one of the largest energy infrastructure providers in North America, worth an estimated $165 Billion CDN. Spectra's Canadian midstream assets are mostly located in Northern British Columbia, and include the 2,818 km, 2.9 bcf/d sweet gas pipeline that converges at Chetwynd and travels to the Lower Mainland, before entering the United States at Huntingdon/Sumas. In addition, the deal includes 1,180 km of raw gas gathering lines and 11 processing plants in Alberta and B.C. Enbridge is moving its natural gas business to Houston, while retaining its crude oil headquarters in Calgary.

In August 2016, Plains Midstream Canada (PMC) acquired all of Spectra Energy's NGL assets in southern Alberta, Saskatchewan, and Manitoba. The deal includes 2.4 bcf/d of NGL extraction capacity, 63,000 bpd of fractionation capacity, 4.7 million barrels of NGL storage, and 933 km of pipeline that ships product from Empress, Alberta to Ft. Wayne, Manitoba.

In August 2016, Keyera acquired from Bellatrix Exploration Ltd. an additional 35% interest in the 120 mmcf/d O'Chiese Nees-Ohpawganu'uk ("Alder Flats") gas plant for $112.5 million CDN. Total Keyera ownership in the plant now resides at 70%. A second 120 mmcf/d phase is expected to be in service in the first half of 2018. Bellatrix will fund 60% of the total cost.

In August 2016, Inter Pipeline purchased Williams Energy's Canadian NGL business for $1.35 Billion CDN. The deal includes the two off-gas NGL extraction plants near Ft. McMurray (40,000 bpd of recovery capacity), the 43,000 bpd Boreal Pipeline that ships NGL from these two plants to the Redwater Olefinic Fractionator (northeast of Edmonton), and the potential for a $1.85 Billion propane dehydrogenation (PDH) project that would consume approximately 22,000 bpd of propane feedstock and produce up to 525,000 tonnes per year of polymer-grade propylene.

New Infrastructure:

Veresen Midstream, a 50/50 joint venture between Veresen and KKR, is constructing three new natural gas processing facilities in Northeast British Columbia.

- Construction of the $715 million, 200 mmcf/d Tower Rich gas plant south of Fort Saint John continues. The plant will consist of inlet separation, shallow-cut propane refrigeration capacity, and sales compression, and is expected to produce up to 20,000 bpd of condensate and other NGLs with delivery to the Industrial Heartland (near Edmonton) via the Pembina low and high vapour pressure systems, respectively. The project also includes 30,000 barrels of storage. In-service is expected in late 2017.
- Construction of the $860 million, 400 mmcf/d Sunrise gas plant is underway near Dawson Creek, B.C. The plant consists of inlet separation, two shallow-cut propane refrigeration trains, and sales compression. Condensate and other NGLs will be shipped to the Industrial Heartland via the Pembina low and high vapour pressure systems, respectively. The plant will operate on a fee-for-service basis, providing processing capacity for new production in the region.
- The $930 million expansion of the Saturn Gas Plant near Groundbirch continues. The expansion will add 400 mmcf/d of gas processing capacity from two shallow-cut propane refrigeration trains. Condensate and other NGLs will be shipped to the Industrial Heartland via Pembina's high and low vapour pressure systems. In June 2016, Encana---as EPC project manager---awarded a $130 million CDN contract to WorleyParsonCord for modularization and onsite construction. In-service is expected by Q2 of 2018.

In October 2016, SemCAMS announced construction of the $300 to $350 million, 200 mmcf/d Wapiti gas plant. Producer NuVista has backed the project south of Grande Prairie with a 120 mmcf/d, 15-year take-or-pay agreement. SemCAMS is negotiating with other producers in the region to subscribe the remaining 80 mmcf/d. In-service is expected by Q2 of 2019.

Since the start of 2016, several new Pembina assets have come online, with others announced and still under construction:

- In April 2016, the 73,000 b/d ethane-plus RFS II fractionator (northeast of Edmonton), was placed into service, helping to separate ethane-plus volumes from Pembina's NGL system. Additional 55,000 b/d of propane-plus fractionation capacity ("RFS III") is being constructed for in-service in 2017, which would increase Pembina's Redwater fractionation capacity to over 200,000 bpd of NGL products.
- In April 2016, Pembina placed the $105 million, 100 mmcf/d Musreau III gas plant into service, located next to its Musreau II plant in the Cutbank Complex region.
- In April 2016, Pembina placed the 200 mmcf/d enhanced liquids extraction facility at Resthaven into service. 13,000 bpd of NGL will be shipped to Edmonton via the Pembina system.
- Pembina is proceeding with the $235 million, 160 km expansion of the Northeast B.C. pipeline infrastructure, which carries NGLs to Edmonton via the Pembina system. The line will parallel Pembina's Blueberry pipeline, which is northwest of Taylor. In-service is expected in late 2017.
- Pembina is proceeding with the $125 million, 100 mmcf/d shallow-cut Duvernay 1 gas plant, located near Pembina's Fox Creek Terminal. In-service is expected in Q2 2017.
- The 28,000 bpd Vantage Pipeline expansion will increase pipeline shipping capacity to 68,000 bpd, and is expected to be in service by late 2016.
- Pembina continues construction on its Canadian Diluent Hub near Edmonton. The site will provide 500,000 barrels of aboveground storage, and numerous inbound and outbound pipeline connections. Take-away capacity is expected to be more than 400,000 b/d via delivery to third-party lines (IPL Polaris, Access, IPL Cold Lake, and Keyera FSPL).
- Pembina is continuing its Phase III expansion of high and low pressure systems, although the core of the expansion—from Fox Creek to Namao—has not yet received regulatory approval.

When Phase III is completed, Pembina will have over 1 million barrels per day of shipping capacity, comprised of segregated lines for ethane-plus, propane-plus, condensate, and crude oil.

During Q2 2016, Keyera completed its 35,000 b/d expansion of its Fort Saskatchewan fractionator. Work also continues on additional underground and aboveground storage in the area.

Downstream Opportunities:
In April 2016, Pembina Pipeline Corporation ("Pembina") and Petrochemical Industry Company ("PIC") announced a joint feasibility study for the evaluation of a combined propane dehydrogenation ("PDH") and polypropylene project in Alberta. The 35,000 b/d project could produce up to 800,000 metric tonnes per year of polypropylene, which would be transported across North America and overseas. The pre-Front End Engineering (FEED) study is expected to be complete by the end of 2016, with a decision to proceed with a comprehensive FEED study expected to occur in early 2017.

Despite sales of Williams Energy's Canadian Operations to Inter Pipeline, work continues in assessing the viability of a $1.85 billion, 525,000 tonne per year propylene plant near Edmonton. David Chappell, former President of Williams Energy Canada, is now a Senior Vice-President of Inter Pipeline, heading a newly formed petrochemical division. A final investment decision is expected by the end of 2016.

Tolling:
In September 2016, TransCanada launched an open season for binding commitments on a new, long-term, fixed toll from the Empress receipt point to Southern Ontario's Dawn Hub. The contract term of service is 10 years, with tolls ranging from $0.75/GJ to $0.82/GJ, depending on the shippers' contract volume commitment and the total subscription of 1.5 PJ/day.