



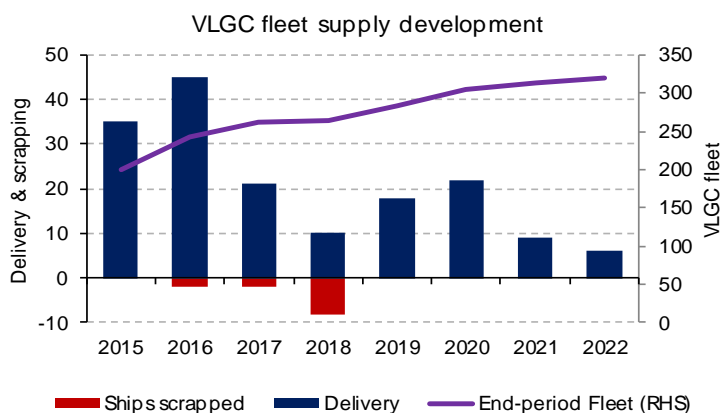
LPG in World Markets

Canada deepens LPG sector investments

Waterborne propane exports from Canada have been steady at around 40,000 b/d (two VLGCs per month) since AltaGas loaded the first VLGC from the Ridley Island Propane Export Terminal in British Columbia in late-May 2019. All the shipments went to Asia with Japan taking more than half of the volume. LPG exports are expected to grow further in 2020 once Pembina commences operations at the 25,000 b/d (735,000 t/y) Prince Rupert terminal in mid-2020; however, exports from the new terminal are expected to be limited to Latin America.

With the stagnant LPG consumption in the retail sector and falling land-exports to the US, Canadian midstream companies have turned their focus on building infrastructure for waterborne exports and PDH plants in recent years. However, recent government policy changes could slow the growth in investments into the petrochemical sector.

Canadian LPG production from gas plants was roughly 10.9 MMt from January to October 2019, 11% higher for the same period in 2018, according to Canada's national statistical office. However, production growth was slower than the 15% increase seen between the 2017-2018 period due to slower growth in natural gas production. Gas plant production is expected to be roughly 13 MMt in 2019 posting 9% year-on-year growth. The production growth is expected to slow further in 2020 to 5% with 13.7 MMt LPG production. Despite growing domestic gas consumption, Canadian gas producers are challenged with falling gas exports to the US which is also slowing NGL output growth. Tight fractionation capacity and a lack of waterborne export terminal have also played a role. The Ridley Island terminal, which came online in May 2019, is the first step in this new strategy finally providing an outlet for Canadian propane to reach the coveted Asian market from a Canadian



terminal. Prior to Ridley Island Canadian LPG was shipped via rail to the Ferndale terminal in the US for waterborne exports, while some volume is shipped via rail to the US Midwest and Northeast.

The reversal of Cochin pipeline from exporting LPG to importing natural gasoline in 2014 closed the only option for pipeline exports to the US. The Alliance pipeline ships wet gas to the US Midwest where the NGLs are removed and used for petrochemical production; however, this is not a dedicated NGL pipeline.

In 2019, exports from Ridley Island were about 710,000 t, according to ship tracking data. Roughly 59% of the exports went to Japan, 29% to China, 10% to South Korea followed by a partial cargo to Indonesia. Japan's Astomos Energy has a term-contract for 50% of the current volume and has indicated that it will lift additional volumes on a spot basis.

With growing demand in Asia, AltaGas has already announced plans to double the capacity of the terminal by the end of 2020. The company in 4Q 2019 said that the capacity of the terminal could be doubled to 80,000 b/d (2.4 MMt/y) with minimal investment.

The plan is to gradually increase capacity in 2020 as the company secures more propane volumes. In addition, they could also introduce butane exports while increasing terminal capacity. Incremental volumes from the terminal should continue head to Northeast Asia considering the short voyage and declining exports from the Middle East.

Canada LPG production

