

December 10, 2019

Asia's Growing Dependence on US LPG

Stratas Advisors

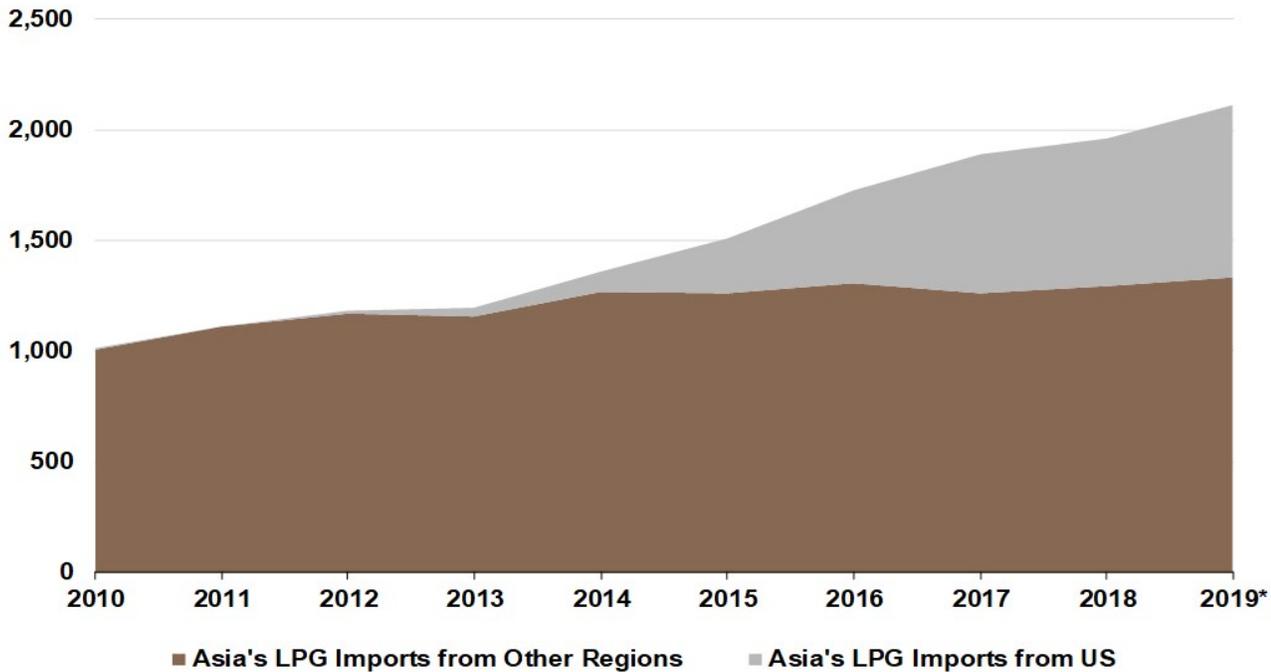
This report and more are available to subscribers of our [Global Refining and Products Service](#). Not a subscriber? [Create an account](#).

Global LPG is currently a supply driven market with abundant supplies stemming from the US. The Asia Pacific region, however, is a key driver behind global demand growth. The Asia Pacific region's LPG demand grew 3.5% in 2018 and is projected to grow 5.3% to 4.05 million bpd in 2019. China, India and Indonesia are responsible for more than 80% of total incremental LPG demand growth in 2018 and 90% in 2019. LPG demand from residential and commercial sectors will continue to be a key component of future demand growth since there is significant latent LPG demand in a majority of countries, where LPG supply capacities and distribution infrastructure remain underdeveloped. New LPG markets, including Propane Dehydrogenation (PDH) plants in China and South Korea, have been generating incremental propane demand. However, demand from PDH plants will be limited mainly to China, and future demand growth rests largely on the pace at which China expands new PDH capacities. Propane demand from PDH plants is expected to slow down in view of China's growing self-sufficiency in domestic production of propylene and its derivatives. Other sources of LPG in the long-term will come from ethylene producers that are incentivized to use low-cost US LPG for chemical production. However, feedstock flexibility in Asia's ethylene production has remained limited.

In terms of supply, Asia's LPG production has been lagging far behind demand growth, contributing to increased reliance on imports from other regions. Refineries are mainly responsible for LPG production in the Asia Pacific region although LPG supplies are available from liquefied natural gas (LNG) and natural gas processing plants in countries such as Brunei, Malaysia, Indonesia, Thailand and Australia. LPG supplies and exports from Indonesia and Malaysia have been constrained by growing domestic demand, resulting in lower exports. In 2018, Asia Pacific imported about 1.96 million bpd, and imports may exceed more than 2.12 million bpd in 2019. Combined LPG imports from the top five countries—China, India, Japan, South Korea and Indonesia—represented about 87% of total imports in 2018 and 2019. One of the key trends is that US LPG has been rapidly penetrating Asia LPG markets, thus eroding Middle East exporters' market shares. One of the key reasons is price competitiveness of US LPG compared to the Middle East. Asia Pacific imported about 47% and 49% of the total US LPG exports in 2018 and 2019, respectively.

Asia Pacific's LPG Imports by Source

Unit: Mbpd



Source: Stratas Advisors

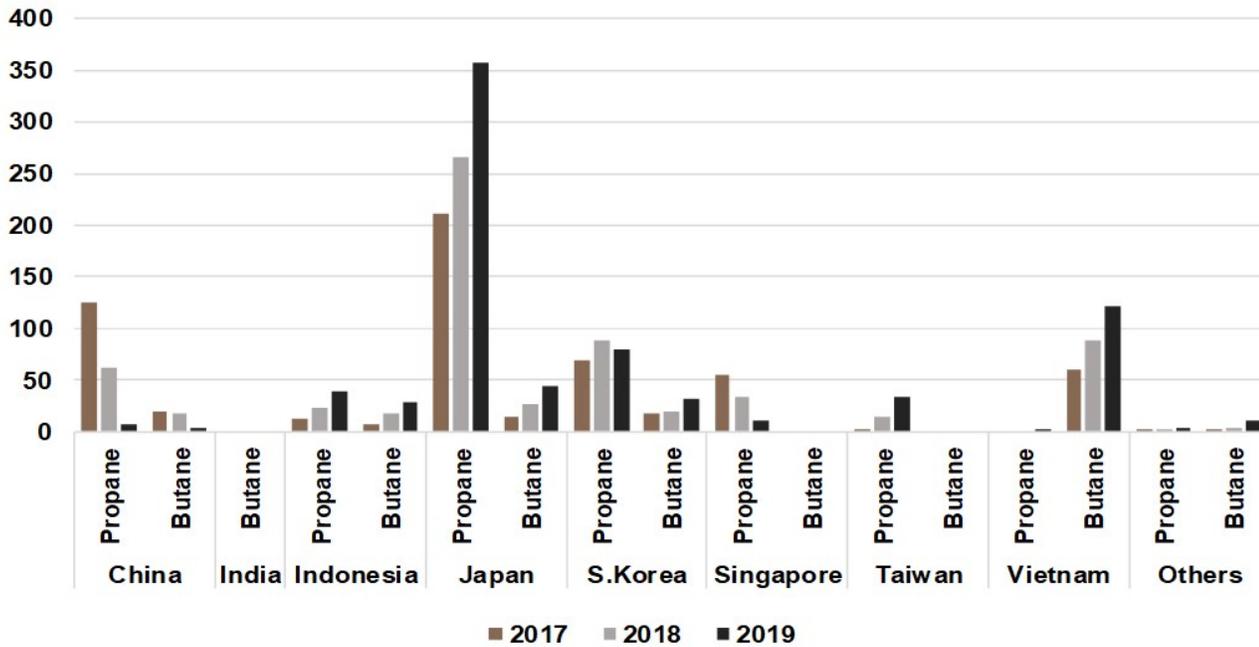
* YTD September 2019

US LPG now accounts for 37% of Asia's total imports of 2.12 million bpd in 2019. Japan, South Korea, Indonesia, Vietnam and China are mainly responsible for a sustained growth in imports from the US. China's LPG imports declined to almost zero until the second half of 2019 as the Chinese government hiked import tariffs from 25% to 30% in December 2018 in retaliation to US tariff policies. Although India historically relied on Middle East for LPG supplies, India ramped up LPG imports from the US in 2019 partly due to supply losses from Iran.

US LPG exports to Asia mainly consist of propane, which accounts for more than 70% of total exports. Butane is mainly imported by Japan, South Korea, Indonesia and Vietnam. Almost 100% of Vietnam's LPG imports from the US are butane.

Asia Pacific's LPG Imports from US

Unit: Mbpd



Source: EIA, Stratas Advisors

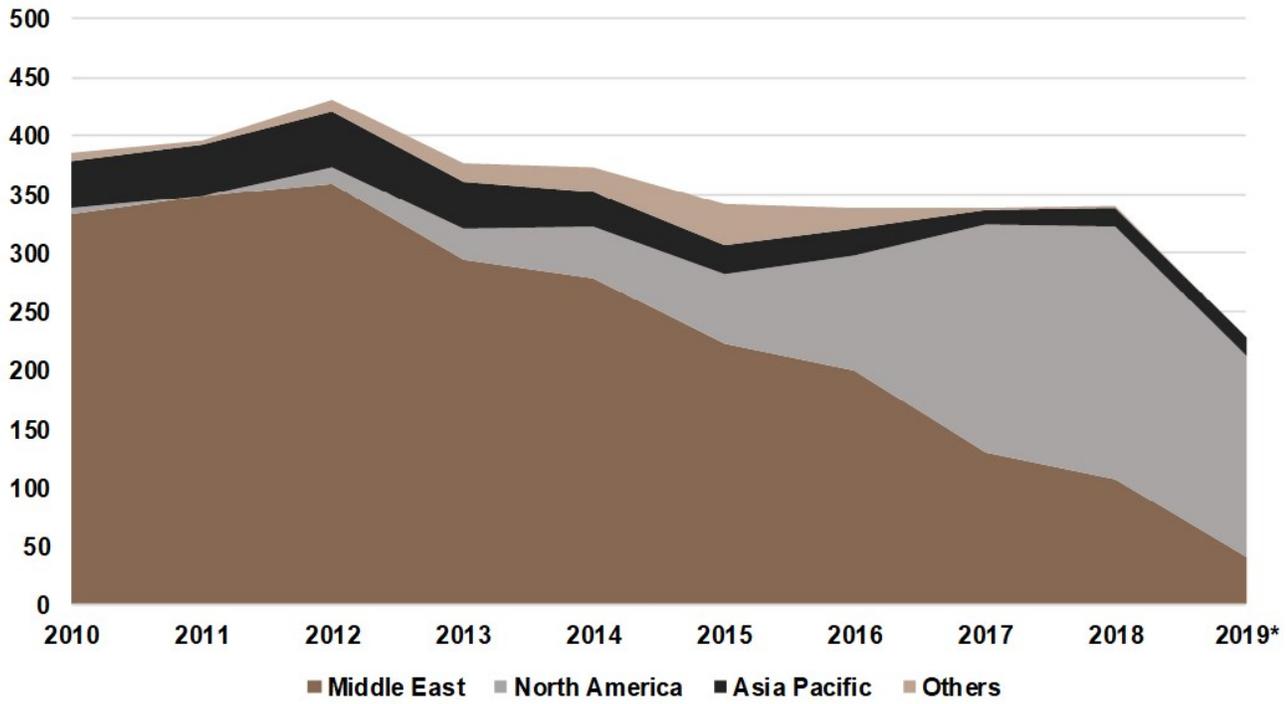
* YTD September 2019

LPG Trade Flows

The growing prominence of US LPG has significantly altered LPG trade flow patterns in recent years, adversely affecting exports from the Middle East. Japan and South Korea have significantly curtailed imports from in favor of US LPG since 2015. Japan's imports from the Middle East declined from 65% (223 Mbpd) in 2015 to 18% (41 Mbpd) of total LPG imports in 2019. South Korea's LPG imports from the Middle East declined from 59% (96 Mbpd) in 2018 to 5% (7 Mbpd) of total imports in 2019. China and India continue to rely heavily on the Middle East for LPG imports despite occasional imports from the US. The ongoing US-China trade dispute may slow down a potential increase in US LPG exports to China, but China could eventually be replaced by India and Indonesia in light of growing imports from both countries. Vietnam's LPG imports are expected to decline over the long term once the state-owned PV Gas completed its grassroots gas-processing plant in 2020.

Japan's LPG Imports by Region

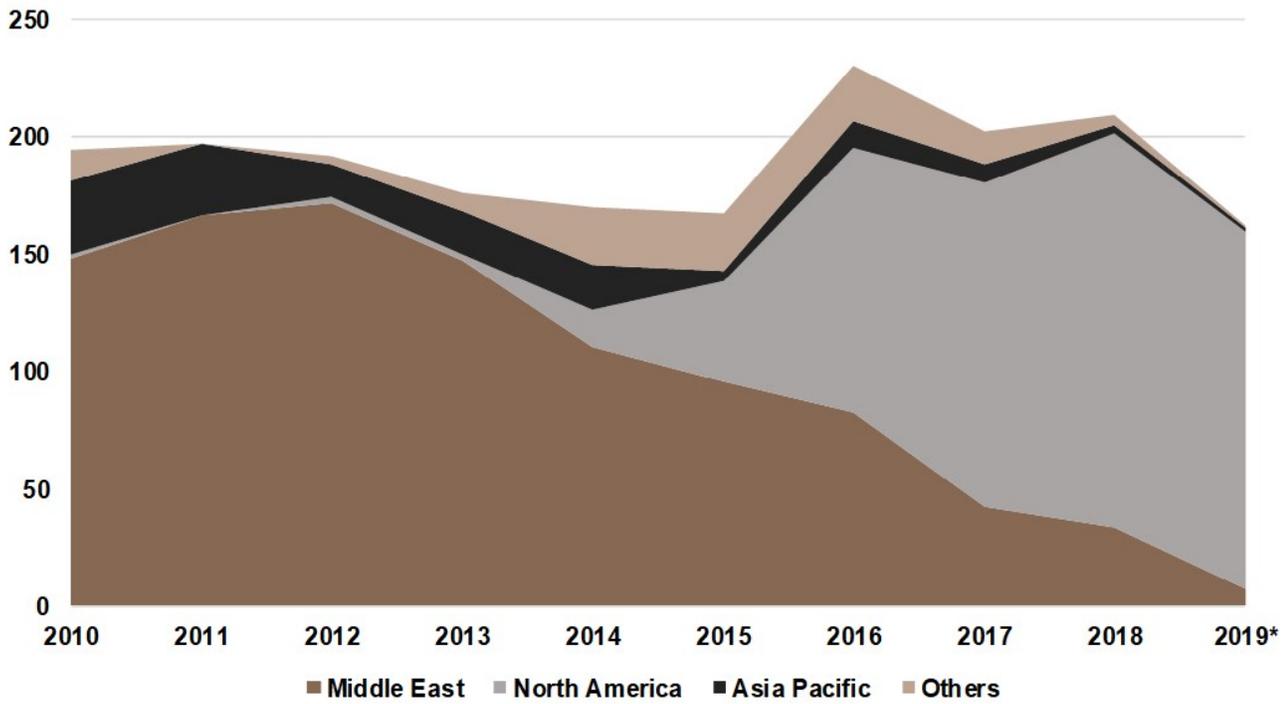
Unit: Mbpd



Source: Stratas Advisors
 * YTD August 2019

South Korea's LPG Imports by Region

Unit: Mbpd



Source: Stratas Advisors
 * YTD August 2019