Asia-Pacific: Key Findings in Refining

The following excerpt is from Stratas Advisors’ Global Refining & Products service. The full report includes several accompanying charts.

Asia-Pacific’s crude oil resources are limited when compared to the large demand in the region. Domestic crude oil fills about 30% of demand, while the rest is imported.

In 2014, crude oil, condensate and NGL production in Asia-Pacific was 7.8 million b/d. Crude oil production will reach 8.15 million b/d through 2020 and then continue to increase to 9.64 million b/d by 2035.

China is the largest crude oil producer in the region as it is responsible for about 54% of the region’s total liquids production.

The average gravity of crude oil processed in the region is projected to decrease from 35.9 °API to 35.4 °API in 2035, and sulfur content will increase from 1.02 wt% to 1.40 wt% in 2035.

Demand growth in the Asia-Pacific region is projected to be strong, though the industrialized countries in the region will experience stunted growth.

Total product demand reached 30.49 million b/d in 2014 and is expected to grow to 45.50 million b/d by 2035.

Overall demand in the region will increase by an average of 1.9% per year between 2014 and 2035.

Gasoline is projected to grow on average by 1.6%, and middle distillate by 2.5% annually from 2014 to 2035.

Significant refining investments have been made in the region; however, there is strong regional differentiation in terms of refining infrastructure. The refining expansions are expected to continue to be aimed at meeting the growing demand and fuel quality improvement.

Crude oil refinery throughput in 2014 was 24.07 million b/d, a capacity utilization of 79%.

Crude oil requirements in Asia-Pacific will increase by 35% between 2014 and 2035. With only limited increase in indigenous production, crude oil imports will increase by 6.25 million b/d.

Expansion of refinery conversion capacity will be the primary driver through 2035 as crude oil throughput is increased. Conversion capacity requirements will increase by 26% of current capacity by 2035.

Domestic production is not projected to keep pace with growing refined product demand, and Asia-Pacific will...
become more dependent on fuels imports as a result of oversupply in other regions.

The region produced surplus jet fuel with net exports of 0.73 million b/d, and residual fuel with a surplus of 0.21 million b/d in 2014. By 2015, Asia-Pacific has been projected to become a net importer of residual fuel, and by 2020 of jet fuel.

In 2014, the Asia-Pacific region imported 0.35 million b/d of gasoline, 1.67 million b/d of naphtha and 0.25 million b/d of middle distillate. Gasoline imports will increase by 0.68 million b/d, or almost triple, by 2035. Naphtha imports will increase by 1.47 million b/d, or almost double, between 2014 and 2035.

The most dramatic will an increase in middle distillate, which is projected to grow to 1.15 million b/d, or almost five-fold, by 2035.

Naphtha imports will provide feedstock for the expanding Asia-Pacific petrochemical market. The increase in naphtha will also provide an outlet for expanding naphtha surplus in the Middle East and North America.

**Existing refineries are anticipated to face more pronounced challenges** with existing infrastructures during refining expansion/upgrade projects.

Additional retrofitting to integrate new conversions and desulfurization units is expected to be substantial. Thus, it is expected that most upgrades of existing refineries would take an extended period to address the issues associated with the integration of new and existing units.

Incremental hydrogen requirements, sulfur recovery, rundown pipe-lining, tankage and power supply will be associated issues to address.

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