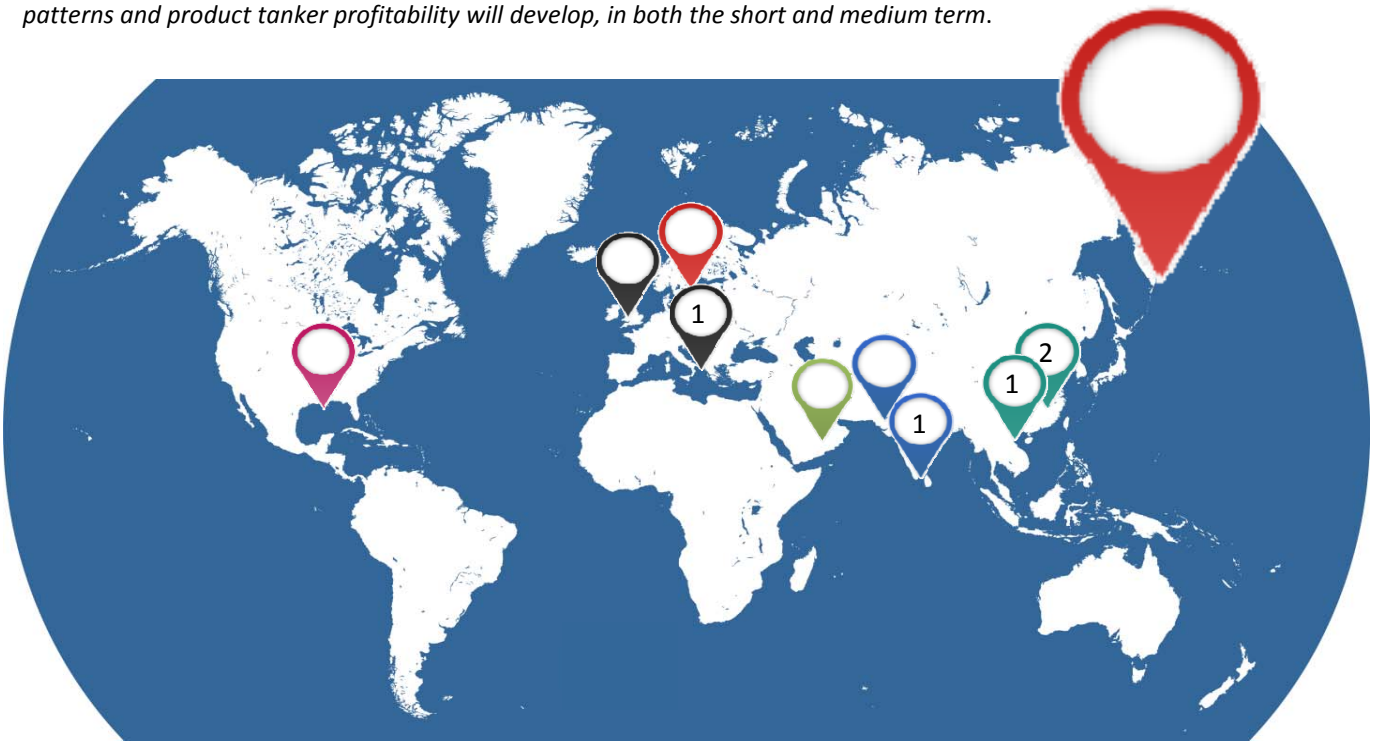
Weber Refinery Report

September 2017

In this month's Charles R. Weber refinery report, we provide readers with the latest developments in the refinery sector as they relate to the seaborne refined product trade and refined product tanker shipping. The report mixes up to date news with detailed information about global refinery capacity and seaborne trade in order to understand how seaborne trade patterns and product tanker profitability will develop, in both the short and medium term.



US refining almost back to pre-Harvey operations - *Sep 2017* - In the aftermath of Hurricane Harvey port facilities and crude oil production bounced back relatively quickly, but flooding caused more protracted problems for US Gulf refineries. Nevertheless, refining throughputs are now getting back to pre-Harvey operations.

Hurricane Harvey knocked out 27% of total US refining capacity at its peak. By 3 September, nine refineries still remained shut down, accounting for 24% of US refining capacity. By 12 September, most of these refineries were beginning the process of restarting - a dangerous time with a heightened risk of fires and explosions. Plants typically shut only a few units for overhaul in spring and fall, with most refinery units remaining in operation for 4-6 years between full maintenance shutdowns.

More protracted problems remain for some refineries. For example, Total's Port Arthur refinery could be closed for weeks after Harvey caused crude oil to plug a key pipeline.

Motiva's 603Kbd Port Arthur plant in Texas is the largest US refinery and one that began restarting operations. It aimed to return to 40% of capacity by the end of last week.

China strives to reduce capacity of 'teapot' oil refineries - *Aug 2017* - Beijing's push to use crude import quotas and licences as a tool to spur consolidation within China's independent refining sector is working to correct an industry that has grown "out of control".

A new report from Columbia University's Center on Global Energy Policy argues the number of privately owned "teapot" refineries will shrink over the next decade as larger, more sophisticated plants thrive at the expense of smaller rivals.

Consolidation comes as the industry faces pressures from overcapacity, a battle for market share between independent and state-owned companies, and slower demand for refined products. Large plants with higher utilisation rates and greater access to imported crude have already begun acquiring smaller plants with less rights.

Latest

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PetroChina completes Qinzhou refining complex revamp - *Aug 2017* - PetroChina has completed a project to retrofit an existing pressure-swing adsorption (PSA) unit at subsidiary CNPC Guangxi Petrochemical's 200Kbd (10Mta) Qinzhou integrated refining complex in Gaungxi province.

The revamped unit now supplies hydrogen at 99.9% purity and with increased hydrogen recovery for the complex's hydrotreating units.

CNOOC Huizhou refinery receives first crude oil from Saudi Aramco - *Aug 2017* - China National Offshore Oil's (CNOOC) newly expanded Huizhou refinery in Guangdong Province has received its first cargo of Arabian crude oil. Capacity has been increased from 240Kbd to 440Kbd.

The expanded refinery, a 50-50 joint venture with Shell, has been configured for the processing of sour Arab Gulf grades. The Arab Medium crude oil from Saudi Aramco is a preferred choice for the refinery's baseload. Previously the plant primarily processed domestic oil procured from its own offshore fields.

Sohar refinery almost operational - *Aug 2017* - The Sohar refinery is in the final stages of commissioning its expansion project, which will raise crude processing capacity by 82Kbd to 198Kbd, and is expected to start operations within a few months. A consequence of this will be the reduction in exports of Oman Crude.

Falcon Oil awards contract for Pakistani refinery - *Aug 2017* - Falcon Oil has awarded a contract to Guangdong Electrical Design Institute (GEDI) to build a grassroots deep-conversion refinery in Dera Ismail Khan, Khyber Pakhtunkhawa (KPK), Pakistan.

GEDI will provide engineering, procurement and construction services for the refinery, which will have a nameplate crude processing capacity of 100Kbd. Work is expected to be completed within 30 months from commencement, though no definitive date for start-up was disclosed.

Preem advances Lysekil refinery expansion project - *Aug 2017* - Preem is progressing with its previously announced plan to expand vacuum distillation capacity at its 11.4Mta Lysekil refinery in Sweden, with delivery of the 37m long tower in mid-August and the VDU's furnace, the project's final piece of major equipment, in October. Completion of the project is on schedule for 2018.

Kochi Refinery project in final stages - *Aug 2017* - The commissioning of the Integrated Refinery Expansion Project (IREP) of BPCL's Kochi refinery, aimed at producing petrol and diesel conforming to Bharat Stage IV standards, and enhancing refinery capacity by 120Kbd (6Mta), are nearing completion.

A number of units have been commissioned – crude distillation, vacuum distillation, diesel hydro treating, vacuum gas oil hydro treating, sulphur recovery and delayed coker. The remaining units are due to be completed by the end of September.

Stanlow refinery due capacity and production expansions - *Aug 2017* - Essar Oil (UK) (which is not included in the recent sale of EssarOil to Rosneft, Trafigura and UCP) will invest USD250Mn during fiscal-year 2018 to further boost operational efficiency and improve production performance at its 180Kbd (9Mta) Stanlow refining complex near Ellesmere Port, Cheshire in the UK to 204Kbd (10.2Mta).

Kuwait awards contract for Al-Zour refinery pipeline system - *Aug 2017* - Kuwait Petroleum (KPC) has awarded a contract to Saipem SPA to deliver engineering, procurement, construction and commissioning of a 450km onshore pipeline system to connect Kuwait National Petroleum (KNPC) 615Kbd Al-Zour refinery complex currently under construction in southern Kuwait.

The long-planned refinery, part of KNPC's Clean Fuels Project, is scheduled to be commissioned sometime in 2018-19. It also includes the upgrade, expansion and transformation of the 270Kbd Mina Abdullah and 466Kbd Mina Al Ahmadi refineries into an integrated 800Kbd merchant refining complex and permanently shut down the 200Kbd Shuaiba refinery (officially shuttered 1 April 2017).

Sisak refinery future in question - *Aug 2017* - Workers are concerned that one of Croatia's only two refineries could soon close, amid news that oil in the reservoirs at Sisak will not be processed at the refinery, but instead transported to Rijeka for processing.

According to media, there is a proposal for the Sisak refinery to be gradually closed and converted to a logisitics and biorefinery, over the next five years, whilst the Rijeka refinery will be modernised.

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Notes: *Mta = million tonnes per annum*

Latest continued...

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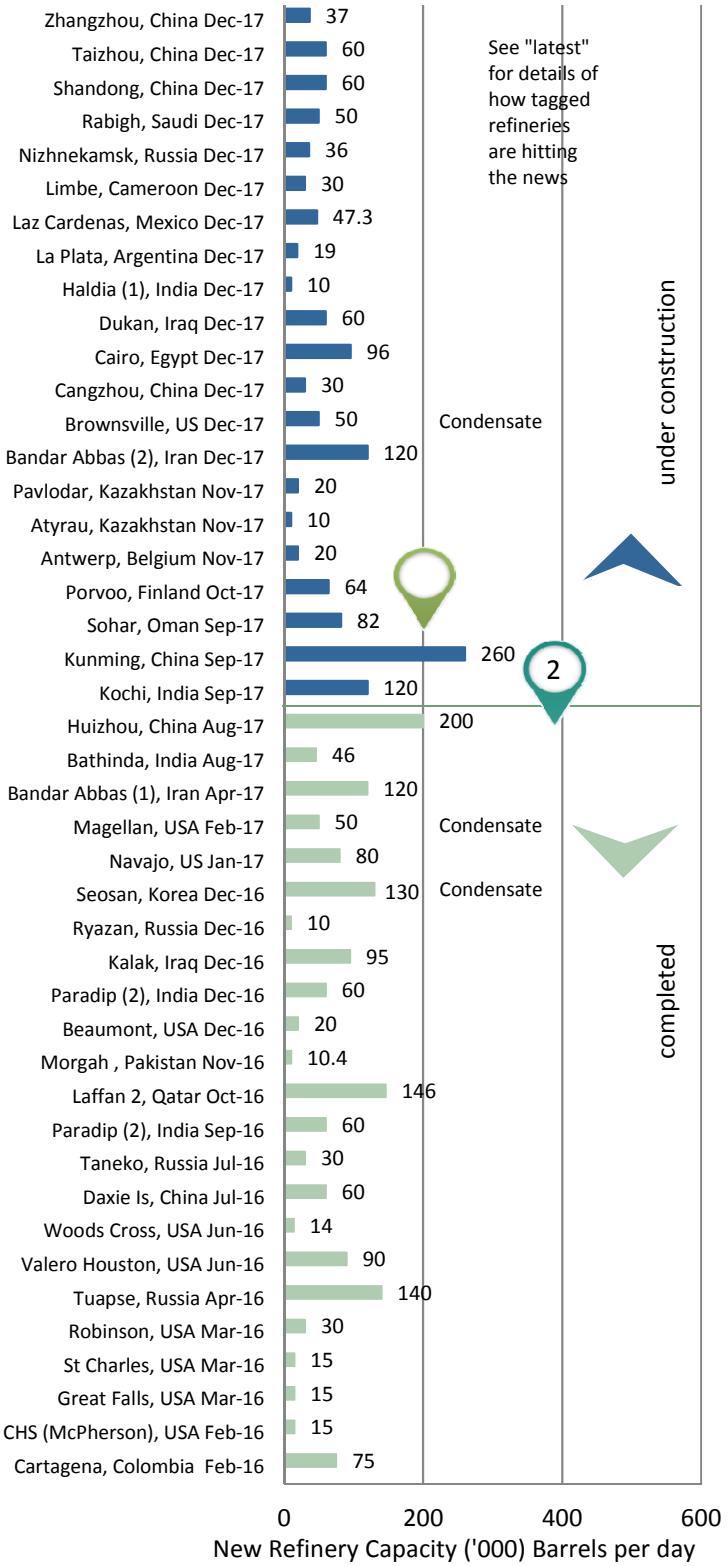
Timeline

Recent and Planned Refinery Additions



We estimate that net global refinery capacity increased by 0.8Mnbd in 2016. This built on increases of 1.1Mnbd in 2015, 0.9Mnbd in 2014, 1.4Mnbd in 2013 and 1.1Mnbd in 2012 (the latter two numbers are based on BP data).

In 2017, we anticipate net refinery capacity additions of just under 1Mnbd. After 16 new refinery additions (each adding >=10Kbd) in 2014, 22 in 2015, and 18 in 2016, we expect approx 27 (often small) projects to complete in 2017. However, it should be noted that a number of projects were pushed back in 2016, in part due to weak oil prices, and the project completion rate this year will be similarly dependent on oil prices continuing to at least sustaining plus USD50Bbl.

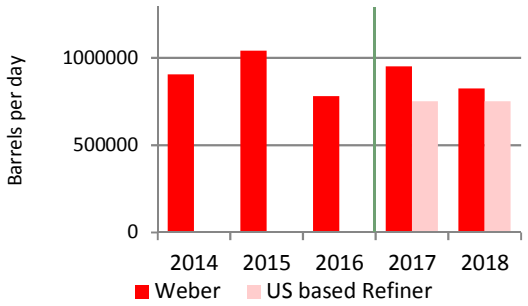
In 2014-15, closures accounted for more than 1Mnbd of capacity. The rate of closures declined to 0.7Mnbd in 2016, and we expect a similar rate this year with closures scheduled in the Middle East and Asia.

New Chinese refinery additions coupled with the internationalisation of the independent "teapot" refinery sector helped to galvanise Chinese exports in 2016, which are estimated to have expanded by 26% last year - underpinned by gasoil/diesel exports.

The refinery timeline chart (left) is derived from Weber's own detailed tracking of new refinery projects. The chart below compares our summary forecast for refinery additons 2015-2018 with that provided by a large US based refiner. This comparative forecaster factors in project delays beyond those reported by the refiners themselves. The US refiner has an interest, of course, in taking a conservative view of new projects coming online and has pushed some projects out beyond 2017.

Net Refinery Additions

Confirmed/completed projects add/closures only



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