

Weber Refinery Report



January 2021



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 Product export trade in the doldrums as refiners turn to renewables - Jan 2021 - US Product exports are estimated to have contracted by almost 10% Yoy in 2020, to levels last seen in 2014 during the early part of the shale revolution. Only a handful of US export trades registered positive growth in 2020 e.g. Chile +8.1% Yoy and Panama 12.5% Yoy. US imports fared even worse, down 18% Yoy in 2020.

While 2020 was an exceptionally bad year all round, it should be noted that US product exports were already under pressure, down 2.5% Yoy in 2019, and that refineries in the US have been focused for some time on adapting to more stringent environmental regulations by switching in part to renewables.

With refining margins plummeting to below-breakeven levels across most regions in 2020, refiners have had to tighten their capital spending, which has intensified their investment in renewables to ensure the long-term longevity of their key assets

For example, Valero reports that 40% of its 2021 growth capital budget will be spent on renewables. Both Marathon Petroleum and Phillips 66 have focused on converting one or more existing refineries to renewable diesel plants, while HollyFrontier and PBF Energy are also looking to build renewable diesel facilities at existing refineries.



Fujairah to get fourth refinery in 2021 - Dec 2020 - Fujairah's fourth refinery should come online in 2021, with Brooge Energy expecting its 25Kbd refinery producing low-sulphur fuel oil to be launched in 2H21.

The port's third refinery was started in April 2020, a 15Kbd (0.75Mnta) plant owned by Ecomar Energy Solutions. Its capacity has since been expanded to 20Kbd (1Mnta), with plans to hit 60Kbd (3Mnta) by 2023.



Construction work for a \$50Bn Koko modular refinery to begin 1Q21 - Jan 2021 - It is anticipated that construction work for Deeds Refinery's \$50Bn Modular Refinery, LNG and Petrochemical plants' project situated at Koko, headquarters of Warri North Local Government Area, Delta State, Nigeria, will commence in 1Q21.

Latest

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1 **New deep processing complex planned for Moscow refinery** - Jan 2021 - Gazprom Neft plans to build a deep processing complex at its Moscow refinery. As part of the project, it will construct a 40kbd (2Mnta) hydrocracker, to be launched around 2025. The first unit, for sulphur production, will commence operations in 2023. The refinery also plans to construct a 48kbd (2.4Mnta) delayed coker, also due to come on line in 2025.

Modernisation of the refinery will be completed by 2025, when it will halt the production of fuel oil.

2 **Bakersfield renewable fuels refinery project is progressing** - Jan 2021 - When the Bakersfield refinery project is completed, scheduled for a January 2022 start-up, it will be the largest renewable fuels facility in western US, the second largest in the US and one of the top five in the world.

The project remains on schedule. Work is proceeding with regards to planning, preparation, detailed engineering and construction, and orders have been placed for all the major equipment, which is a critical path to construction completion.

1 **Axion starts up CDU Dec 2020** - Jan 2021 - Axion Energy continues with the Campana refinery expansion project, with a new 50kbd (2.5Mnta) delayed coker unit started up in early December, raising capacity to 120kbd (6Mnta). Other units became operational in 2020 - a 43kbd (2.15Mnta) gasoil hydrofiner in June and a fuel gas treatment complex in July.

There are still pending revamp works to be considered in 2021 on an 11kbd (0.55Mnta) Powerformer, an 85kbd (4.25Mnta) Crude (Pipestill) Unit and a 26kbd (1.3Mnta) FCCU unit.

1 **Mina al-Ahmadi refinery ships first ULSD to Pakistan** - Dec 2020 - KPC's Mina al-Ahmadi refinery has made its first shipment of ultra-low sulphur diesel (ULSD) to Pakistan, following the signing of a deal with Pakistan State Oil (PSO), as the nation will require such imports following its switch to Euro-5 emission standards for road vehicles as of 1 January.

Pakistan is a strategic market for KPC as Kuwait is considered the largest supplier of diesel to Pakistan, which remains one of the few Asia-Pacific countries that still uses high-sulphur gasoil and imports 40% of its domestic needs.

2 **PDVSA stopped gasoline output at El Palito refinery** - Dec 2020 - PDVSA has stopped gasoline output at its 146kbd (7.3Mnta) El Palito refinery in Venezuela due to an issue with a valve that caused a fire, and left the 310kbd (15.5Mnta) Cardon refinery as the nation's sole plant producing gasoline.

3 **Shell Convent refinery to complete shutdown by mid-Dec** - Dec 2020 - Shell to complete the shutdown of its Convent oil refinery by mid-December and will remove inventories of oil, chemicals and other materials by the end of 2021.

1 **Consortiums sign MoU for plan to convert Geelong refinery into LNG terminal and energy hub** - Dec 2020 - Up to now the future of Viva Energy's Corio refinery in Geelong has been looking uncertain due to unsustainable losses in 1H20. However, a memorandum of understanding (MoU) has been signed with three major energy companies — ENGIE Australia and New Zealand, Vitol and VTTI, and Mitsui.

The consortiums plans to develop an LNG gas terminal at the site, as well as look at long-term plans to create an energy hub, which could include solar, gas, hydrogen manufacturing and other renewable and lower carbon energy sources.

It is hoped a final investment decision could be made by mid-2022, with the facility operational by 2024.

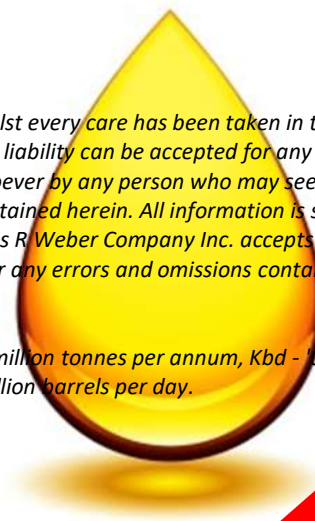
1 **Neste is first refiner in Finland to introduce renewable fuel oil** - Dec 2020 - Neste is the first refiner in Finland to introduce fuel oil produced from 100% renewable raw materials, with deliveries beginning on January 2021 from its Porvoo terminal. Neste MY Non Road Diesel™ is suitable for construction, forestry and agricultural machinery, and will enable companies to reduce their own greenhouse gas emissions by up to 90% over the product life cycle compared to fossil fuel oil.

4 **Enerkem proposes to develop advanced biorefinery in Quebec** - Dec 2020 - Enerkem, Shell, Suncor, Proman and Hydro-Quebec have announced plans to develop a biorefinery in Quebec that can produce 125MnL of advanced biofuels. Commissioning of Phase 1 of the development is scheduled for 2023.

The proposed facility, once fully operational, is expected to take in more than 0.2Mnta of non-recyclable residual materials and wood waste, including solid waste, mixed plastic waste and residual forest biomass, as feedstocks. Enerkem has also developed the 38MnL advanced Enerkem Alberta biofuels refinery in Edmonton.

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***Notes:** Mnta = million tonnes per annum, Kbd = 1000 barrels per day, Mnbd = million barrels per day.*



**Latest
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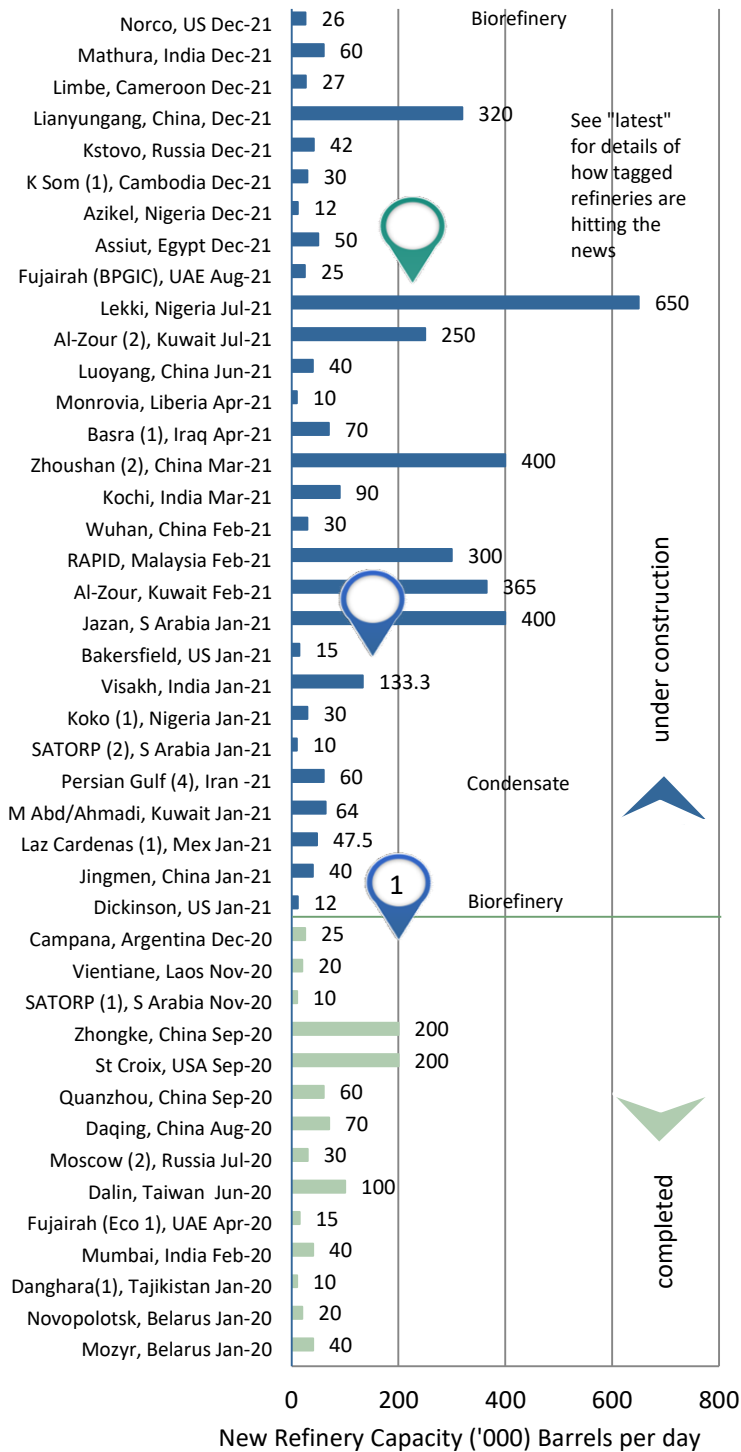
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Timeline

Recent and Planned Refinery Additions



We estimate that net global refinery capacity additions amounted to 0.87Mnbd in 2020, while closures (either permanent or temporary) since March 2020 and the onset of the Covid-19 crisis have totalled 3.8Mnbd. There is 3.7Mnbd of new capacity scheduled for completion in 2021, but we expect commissioning of a sizeable amount of this capacity to be delayed.

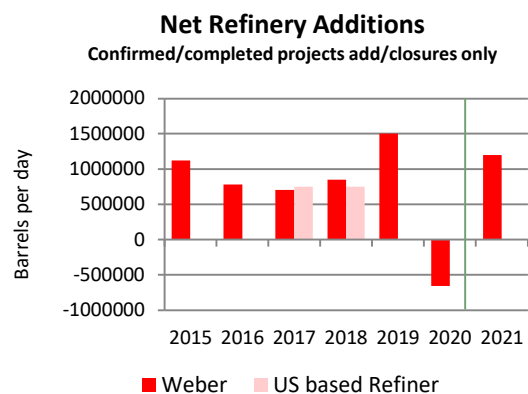
Net refinery additions of 1.5Mnbd were recorded in 2019. This built on increases of 0.8Mnbd in 2018, 0.7Mnbd in 2017, 0.8Mnbd in 2016, 1.1Mnbd in 2015, 0.9Mnbd in 2014, 1.3Mnbd in 2013 and 1.1Mnbd in 2012 (the latter two numbers are based on BP data).

Of the projects slated for completion in 2021, China leads the way with 0.8Mnbd, followed by Nigeria 0.7Mnbd, Saudi Arabia 0.4Mnbd and India 0.3Mnbd. There are a further 14 countries having >10Kbd under construction.

16 new refinery additions (each adding >=10Kbd) in 2014, 24 in 2015, 20 in 2016, 15 in 2017, 17 in 2018 and 10 in 2019.

In 2014-15, closures accounted for more than 1Mnbd of capacity. The rate of closures declined to 0.5Mnbd in 2016, 0.9Mnbd in 2017 and 0.2Mnbd in 2018/19 combined. We saw around 1.4Mnbd of planned or completed capacity closure or conversion in North America alone from late 2019 to end 2020.

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 additions 2015-2020 with that provided by a large US based refiner. This comparative forecast factors in project delays beyond those reported by the refiners themselves.



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