



EIC INSIGHT REPORT

DOWNSTREAM

NEW TECHNOLOGIES IN THE DOWNSTREAM SECTOR

This report was initiated before the impact of the coronavirus pandemic on the industry and economic activity in general. Some of the projections will change because of this, especially short term and possibly midterm, however the goal for energy transition long term is expected to continue. Despite the budget cuts that have been announced by some of the major energy companies, there has been reaffirming of their commitment to the net-zero path. An example is BP CEO's announcement in May around the goal to reduce their carbon footprint to zero, embracing the energy transition. Shell's CEO also spoke about the belief energy transition was underway and the possibility of it speeding up in the recovery phase of the crisis which they plan to be well positioned for.

We also experienced the drop in oil price due to the economic disagreement between Russia and Saudi Arabia, following Russia's refusal to cut oil production leading to Brent falling over 60% of its value at the end of 2019. This showed the volatility of the market to varying factors, which is another reason to increase the growth of new technologies.

The scale of new technologies will be vital for the energy transition, and we are already seeing project

developments to achieve this goal. Governments have increased spending on research and development for the use of hydrogen energy and mandates are being used to support this growth. When produced from a renewable source such as wind or solar, it has a significant advantage with the only by-products being heat and water. However, the production of green hydrogen on a large scale is still a challenge as it requires more renewable electricity. Combining with CCS offers an advantage, combining large scale conventional methods with capture technology to deliver hydrogen via a low carbon route.

Biofuels derived from waste biomass are capable of reducing emissions when used in place of fossil fuel as a significant portion derived from plants is carbon neutral. In the aviation industry, the International Air Transport Association (IATA) announced there is a commitment to no further increase in carbon emissions from 2020 onwards, and a 50% reduction in emissions by 2050. E-fuels produced via renewable resources also have a key role to play, and a study by the German Energy Agency (Dena) revealed that e-fuels are needed to meet the EU's climate protection targets in the transport sector. This would also affect oil demand in the future, and a sector we expect to see growth is in chemical production. This is where the Crude Oil to Chemical (COTC) concept can

benefit, as new refineries are configured to maximise chemical production over transportation fuels and has the potential to improve refining margins. The technology also provides an overall lower carbon footprint, as the assets in a facility become more integrated and optimised leading to better efficiency.

The use of digital technology not only in the downstream sector but all sectors of the energy industry will create optimisation, decarbonisation, cost savings, job opportunities and asset management. The benefits of being capable to control equipment remotely are even more of a priority now with the effects of the COVID pandemic, and the pace of digital transformation will improve.

All of these technologies will disrupt the conventional way of working positively, and the downstream players that adapt will remain competitive in the future.

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