News Release Archive

Sustainability Shift - Oil's Future in the Energy Transition: S&P Global Platts

Refiners in a Crude-to-Chemicals Shift and Non-Crop Feedstocks Favored in Biofuels & Land-Use Debate
- Aviation Carbon Emissions Growing Faster Than Any Other Transportation Sector -

LONDON, Feb. 23, 2020 /PRNewswire/ -- When it comes to energy markets and climate risks, the debate around energy transition has shifted from when it will happen to what it will look like. This is the focus of a new S&P Global Platts special report, *Sustainability Shift - Oil's Future in the Energy Transition* (spglobal.com/sustainability-shift), issued in association with the Platts London Oil and Energy Forum.

S&P Global
Platts

Among the report's highlights:

- Aviation and shipping have the biggest challenges ahead in the global shift to cleaner fuels
- Investor concerns about stranded assets and environmental, social and governance (ESG) requirements will lead to survival of the fittest among producers and refiners in the mid to long term
- Changes in transportation fuels will shift refining strategy, with some plants closing. Refiners will move focus from a clean gasoline/diesel focus to jet and petrochemicals, with investments needed to secure longer term viability
- Biofuels will move from an attention on volume-based blending goals to stronger rules around origin and questions of land use and life-cycle emissions
- Zero-carbon hydrogen can provide a channel for achieving emissions reductions in otherwise challenging sectors such as industrial heat, refining, ammonia, residential/commercial heating and heavy duty/long haul trucking

Roman Kramarchuk, Head of Energy Scenarios, Policy & Technology Analytics, S&P Global Platts:"While the ambition of the Paris Accord requires reducing greenhouse gas emissions to limit global temperature increases to 2 degrees Celsius or below - current trends in energy consumption still lead us to outcomes of 3 degrees C and higher. With the world demanding ever more energy, policymakers are focusing on efficiently utilized, lower-emissions, lower-carbon fuels that are affordable to end-users and aligned with economic growth. Such transformation creates both risks and opportunities for the existing energy capital stock and the incumbent players."

For your convenience, find a number of notations from S&P Global Platts Analytics below and the S&P Global Platts special report link further below. Chris Midgley is among the speakers presenting at the S&P Global Platts London Oil and Energy Forum in London Monday.

REFINING

Peak oil demand: The public's ambitions around climate policy increasingly affect the world's energy markets, and while the drive away from hydrocarbon fuels might lead to a peak in oil demand over the next couple of decades, oil will surely remain a significant share of total energy demand in the future. S&P Global Platts Analytics expects world oil-demand growth to slow in the years ahead due to efficiency improvements, and technological and regulatory change. However, Platts Analytics still forecasts a global oil demand rise to about 114 million barrels per day (b/d) by 2030, about 1% a year, slowing from a recent high growth rate of 1.9% in 2017. The fastest demand-growth is expected to occur in petrochemical feedstocks, which will lead

to new types of chemical refineries. Furthermore, investors will likely continue to shy away from stranded-asset risks, stemming from low-complexity/low-margin oil refineries, which could trigger a "survival of the fittest" race in the world's refining system.

AVIATION

Among the most challenging sectors to decarbonize will be aviation, where oil does and will continue to play a key role. While emissions from aviation make up a comparatively small share of total global greenhouse gas emissions, they are also growing faster than any other sector in transportation - doubling aviation's share of total CO2 emissions.

Growth will be strongest in the developing world, where the rising middle class demand more travel. This focusing attention on the policies and technologies needed to reduce the sector's emissions. Unlike most with other sectors, emissions in aviation are not covered by the 2015 Paris Agreement. Instead, International Civil Aviation Organization (ICAO) has adopted the CORSIA program - requiring carbon offsets to cover the increases in emissions from 2019-2020 levels. Voluntary compliance will begin in 2021, with mandatory participation not coming until 2027. Despite emissions reductions from Sustainable Aviation Fuels, new technologies, and equipment efficiency, it is not clear that the policy frameworks, financial incentives and commitments are yet in place to move the needle significantly.

CROPS-USE FOR ETHANOL

Platts Analytics expects demand for both ethanol and biodiesel to rise in 2020 as governments seek to meet greenhouse gas (GHG) emissions targets, with biodiesel demand jumping 6.1% and ethanol 1.4%. Still countries, particularly in Europe, are increasingly rethinking the effects of crop-based biofuels and encouraging investment in feedstocks that can sequester carbon without converting land to agricultural use.

On an energy unit basis, **according to the S&P Global Platts special report**, the water footprint of biofuel is higher than fossil-based counterparts. Bioethanol has an average water intensity of 3.3 liters per megajoule, which is 40 times higher than conventional gasoline.

In some specific markets like California, corn-based ethanol is much less desirable than ethanol made from sugar cane or molasses. It is good for volumetric mandates, but not as good for greenhouse gas reduction. In the US overall, expect less growth in demand for biodiesel made from soybeans and canola and more growth for renewable diesel made from used cooking oil, corn oil and tallow, according to Patricia Luismanso, head of biofuel analytics, S&P Global Platts.

BIODIESEL

Growth in demand for hydrocarbon-based diesel, unlike for gasoline, will continue over the course of the next decade, albeit at a slower pace, according to S&P Global Platts Analytics. Biomass-based diesel (BBD) has therefore a larger base of growth when compared with ethanol. BBD has been and will continue to be the most actively used in Western Europe. Other key markets will include the US, Latin America and Southeast Asia.

CAR-SULFUR & PETROCHEMICAL AROMATICS

One conundrum facing refiners: Sulfur cuts to gasoline also reduce the octane level, at a time when car manufacturers are making cars with higher-performance engines that require more octane. S&P Global Platts Analytics sees increased focus on hydro-treating catalysts that minimize octane loss. Expect a boost in demand for petrochemical aromatics, used as an octane booster in the blended gasoline pool. This will result in greater competition between gasoline and petrochemicals.

Platts Analytics expects the world to need the equivalent of 63 world-scale ethylene crackers of 1.5 million-metric-tons-per-year capacity between 2020 and 2035. This, in order to satisfy growing demand for petrochemical products, which in turn is going to raise the petrochemical feedstock demand from 13.7 million barrels per day (b/d) 2020 to 20.7 million b/d in 2035, at a compound annual growth rate of 2.8% per year. The demand projection includes propane dehydrogenation processes. Without propane dehydrogenation (PDH), petrochemicals demand will rise to 17.8 million b/d in 2035 from 11.7 million b/d in 2020.

SHIPPING

The bunker industry, a 300-million-metric-ton-per-year market, expects to have adjusted to the International Marine Organization's 2020 low-sulfur shipping fuel mandate over the course of the year. The transition is going mostly as expected with low-sulfur fuels (both residual and distillate based) pricing much higher than high-sulfur ones. This is increasing the drive for ships to install scrubbers to allow them to use the cheaper high-sulfur fuel. Scrubbers do not help with CO2 and they can have wastewater management issues of their own. Longer term, the battle then becomes which alternative fuel becomes dominant for the shipping industry as it seeks to wipe out its greenhouse gas emissions over subsequent years/decades. The size of the demand requirement makes the use of bio-based fuels a challenge. Liquefied natural gas (LNG) only accounts for 5% of current bunker fuel use (mostly in LNG tankers) and has potential to increase more widely but its greenhouse gas savings versus oil is relatively small and there are concerns over methane emissions across the supply chain. Ultimately, it will likely involve a variety of fuels - including ones not used today - along with other energy-saving technologies to reduce substantially the shipping industry's greenhouse gas impact.

HYDROGEN

Addressing emissions from the industrial sector, long haul trucking, shipping, residential and commercial uses, along with the need for storage to achieve clean power goals, will prove particularly challenging - but is critical to meet global carbon-reduction targets. Platts Analytics estimates that a shift to zero-carbon hydrogen in existing applications - refining, ammonia, industrial - along with modest penetration in gas pipelines and trucks, can reduce global energy combustion CO2 emissions by more than 7%. Nearly all hydrogen is currently produced from fossil fuels, with over two-thirds produced using the steam methane reforming process (with the possibility of sequestering the emitted CO2). In addition, it can be produced by electrolysis, a carbon-free process that uses electricity to separate hydrogen from water. This process is energy-intensive; however, when paired with electricity from renewables, electrolysis could also help address the problem of intermittency of wind and solar generation: curtailment/energy storage.

CONCLUSION

Energy producers and energy consumers across all sectors are under intense pressure to find lower carbon solutions as the world looks to move closer to net-zero carbon emissions. The world needs more energy and less carbon emissions. However, renewables simply cannot keep up with the growth in energy demand, and switching to lower-carbon fuels such as coal to gas makes limited progress to achieving the net-zero target. As such, S&P Global Platts Analytics maintains that better ways must be found to include fossil fuels in the world's future energy mix while minimising their impact on greenhouse gases.

Chris Midgley, head of analytics, S&P Global Platts:"We need to maximise of the integration of renewables into global energy systems, reduce carbon intensity of the fossil fuels we do consume, improved efficiency of all things which consume energy, and incentivise the investment into capture and sequestration or re-use of much of the carbon the world produces."

To download the full report, *Sustainability Shift - Oil's Future in the Energy Transition,*please click here:
spglobal.com/sustainability-shift

*the prevalent view that global warming must be limited to 2 degrees Celsius to avoid an onslaught of climate risks and repercussions.

Media Contacts:
Americas: Kathleen Tanzy, + 1 917-331-4607, kathleen.tanzy@spglobal.com

About S&P Global Platts
At S&P Global Platts, we provide the insights; you make better-informed trading and business decisions with confidence. We're the leading independent provider of information and benchmark prices for the commodities and energy markets. Customers in over 150 countries look to our expertise in news, pricing and analytics to deliver greater transparency and efficiency to markets. S&P Global Platts coverage includes oil and gas, power, petrochemicals, metals, agriculture and shipping.

S&P Global Platts is a division of S&P Global (NYSE: SPGI), which provides essential intelligence for companies, governments and individuals to make decisions with confidence. For more information, visit http://spglobal.com/platts

SOURCE S&P Global Platts

For further information: CONTACT (Additional): Americas: Elizabeth Loftus, +1 929-302-5793, elizabeth.loftus@spglobal.com; Asia: Melissa Tan, + 65-6597-6241, Melissa.tan@spglobal.com; EMEA: Alex Brog +44 207 176 7645, alex.brog@spglobal.com

---

https://press.spglobal.com/2020-02-23-Sustainability-Shift-Oils-Future-in-the-Energy-Transition-S-P-Global-Platts