Voluntary carbon markets take off
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Editor’s Note

After the tumult of 2020, the energy world is looking to vaccine rollouts, stimulus packages and new green deals to bring some positive influence, whether in terms of demand or investment levels.

But while there are broad signs of recovery, political uncertainty and commodity price surges at the start of 2021 are a reminder that we are still living in a moment of historic volatility and change.

The global energy transition continues to accelerate. China has set out a net-zero emissions goal for 2060; the US, under new President Joe Biden, has rejoined the Paris Agreement; and national governments are racing to put out plans and strategies for green growth and technologies such as hydrogen and CCS.

Carbon markets look set for a period of rapid evolution in the coming year. The overhaul of the European Trading System will start to play out, while China is pushing ahead with an ambitious nationwide emissions trading scheme. In the US, too, there have been growing calls for a comprehensive carbon price going beyond the current fragmented regional initiatives – and some optimism that the Biden administration could introduce such a system.

Meanwhile, activity in the voluntary carbon markets is ramping up, and with it the need for consistent standards and greater transparency, as Jonty Rushforth writes in our cover story (page 8).

Energy transition is in evidence across all asset classes, affecting everything from fuel choices in the shipping sector to production processes for lithium (page 60). In the oil and gas sector, scrutiny of emissions spans the entire supply chain, and upstream carbon intensity is a measure that is set to have increasing currency in the market, potentially creating new demand and pricing patterns (page 21).

This edition of Insight also highlights the constant evolution of commodity markets. We delve into the recycled plastics sector and look at how trade in these products is becoming globalized and more liquid, as demand rises and quality becomes more uniform (page 30).

We also look at the emergence of a new LNG trading hub encompassing India and the Middle East (page 40), and assess how the fuel oil market responded to last year’s introduction of a global sulfur cap combined with dramatic demand destruction from the coronavirus pandemic (page 48).

Finally, for some perspective on whether we are really entering a new supercycle, turn to page 14, where Paul Hickin assesses commodity market indicators in the context of the global economy.

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Scaling up

Voluntary carbon markets have a significant role to play in global decarbonization, but need rigorous standards and greater transparency to build trust, write Jonty Rushforth and Paula Vanlaningham.
Nearly five years after the signing of the Paris Agreement, the urgency of the global climate crisis is more apparent than ever before, and with that urgency has come a stronger move towards collective action to mitigate the worst impacts of climate change.

Not only are national governments instituting policies to meet the climate objectives set out by the Paris Agreement, shareholders and consumers are also driving new action within the private sector. Corporations large and small are now setting ambitious carbon neutrality goals, with many aiming to go “net-zero” within the next twenty years.

In the private sector, the focus has turned increasingly towards voluntary carbon credits, which businesses can purchase to reduce their carbon debts. Voluntary Carbon Credits are generated by specific projects that avoid, reduce or remove greenhouse gas emissions from the atmosphere, and are verified and validated according to a set of independent standards created by coalitions of NGOs and carbon market participants throughout the last few decades.

The voluntary markets are, crucially, different to regional compliance markets like the European Union’s Emissions Trading System or North America’s Regional Greenhouse Gas Initiative, which have so far dominated the discussion around global emissions reductions. Instead, the voluntary markets are a product of the private sector initiatives that fall outside of the compliance jurisdictions defined by the United Nations Framework on Climate Change. Some of these initiatives are semi-regulatory, such as the International Civil Aviation Organization’s Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), whereby airlines can reduce their carbon debts through the use of either credits or sustainable aviation fuel, while others are entirely voluntary.

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New carbon “Standards”

Markets for these carbon credits have arisen without government definitions and structures, and have instead been created by partnerships between NGOs and corporations. These organizations, or Standards, as they are known, have created their own methodologies and systems to define and certify projects across the world that work to either limit, completely avoid, or remove greenhouse gas emissions from the atmosphere. Project developers draw on those Standards to turn ideas into projects and those projects into carbon credits. And the credits are

The volume of trade in voluntary carbon credits is becoming significant, and the market is set to grow exponentially over the next several years.

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verified, validated and held in the registries of those same Standards for trade in the open market. A technology company might want to look for credits from a project that uses new tech, whereas a food company might want to invest in those that use soil management techniques. Hence the description voluntary carbon markets – because they have resulted from the free choices of a myriad of companies to engage with the environmental challenges ahead without the compulsion of regulation.

The Standards help to mitigate a problem that nearly sank the voluntary carbon market in the early 2000s: a lack of faith that a carbon credit was really doing what it said it was doing. While the development of stronger standards to verify project outcomes has helped rebuild faith in the voluntary markets, the scale of growth expected in the next few years is likely to throw up additional roadblocks in the development of a functioning market.

At this year’s World Economic Forum – a mostly-virtual Davos, given the restrictions on international travel prompted by COVID – the Taskforce on Scaling Up the voluntary carbon markets released its final report, calling for greater transparency in what has hitherto been an opaque, over-the-counter market. The Taskforce also identified six key areas where greater efforts are required to achieve a large, transparent, verifiable and robust carbon market: establishing core carbon principles, core carbon reference contracts, infrastructure, offset legitimacy, market integrity and demand signalling.

In order for the voluntary carbon markets to scale up to the degree that will ultimately be necessary to meet the challenges of the climate crisis, something needs to change.

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Transparency is undoubtedly one of the greatest challenges facing the voluntary carbon markets. A complex web of project developers, standards, project financers, and brokers are involved in selling carbon credits, and there is a wide variety of projects on offer – all of which can trade at different prices per metric ton of CO2e, depending on project type, location, standard certification, vintage and location. This combination of variables means most activity is still over-the-counter, with credits bundled together into larger portfolios for buyers.

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The effort by the airline industry to introduce some standardization to this complex market is one of the more lauded approaches. The CORSIA program allows airlines to reduce their carbon debts through the use of credits from the voluntary markets, initially voluntarily, and later under a mandate.

The set of specifications contained within CORSIA provides a framework for aggregating credits. A buyer can pick any of a range of project types, from a range of standards, and use their credits to meet its obligations. It is a simplification that has already started to generate increased liquidity in the global carbon markets. And it is a simple place to start for producing price benchmarks. That’s why S&P Global Platts started publishing an assessment of CORSIA-eligible credits, Platts CEC, from January 4, 2021. A single number, from a world of complexity.

This is just the start of a new phase in price transparency in the carbon markets, however. Platts plans to start publishing a suite of prices in this space, in order to cover not just the commoditized CORSIA-eligible credits, but also the full range of project types and co-benefits that the voluntary market represents. The price range in that space is significant – everything from 30 cents/mt for some renewable credits all the way to hundreds of dollars per ton for some credits generated from mineralization projects that potentially lock CO2 away for thousands of years and more.

We believe that this coverage will be a key factor in helping the voluntary carbon markets to grow. By giving buyers and sellers baseline pricing in a broad range of areas, Platts prices ensure more efficient outcomes and ultimately provide a stable framework for growth. And growth in the carbon markets means a faster path to reducing the world’s overall greenhouse gas footprint: a faster path to net zero.
Commodities bounce back

The surge in commodity prices in late 2020 and early 2021 is in some ways at odds with a global economy still gripped by the COVID-19 crisis. Paul Hickin unpacks the factors that brought about the rally and examines longer-term prospects.
The rise in Brent crude oil prices since November has some notable figures in global commodity markets heralding the arrival of a "supercycle."

This comes as optimism around COVID-19 vaccines has supported the demand outlook and OPEC+ has been managing output, even if some have questioned whether this surge in prices is warranted with the world still in the midst of a pandemic.

The rally in the broad spectrum of commodities assessed by S&P Global Platts has prompted heavyweights to outline their reasoning for the supercycle — a protracted rise in key prices.

"What is the definition of commodity supercycle? It’s a structural upward shift in demand...and we have a structural upward shift in demand occurring," Jeff Currie, head of commodities research at Goldman Sachs told Platts in a recent interview.

In early 2021 copper and iron ore, vital industrial products, were close to highs not seen since early last decade, and the LNG benchmark, Platts JKM, reached unprecedented levels, boosted by economic stimulus spending, Chinese demand and a weaker dollar.

Some $14 trillion was spent on fiscal packages around the globe last year, according to the International Monetary Fund, and for much of 2020 there was a strong inverse correlation between the US currency and other holders of other currencies.

The global economy has been recovering from its lowest point, seen last April, but is not likely to reach 2019 levels before the third quarter of 2021.

Supercycle signs

Currie, who called the first supercycle in the 2000s, said similar forces were at play with "structural underinvestment in the old economy" and noted supply shortages are severe despite weak COVID-19-induced demand weakness.

While metal prices were turbocharged last time around by industrialization and urbanization in China in particular, this time the "green" revolution — which leading economies like the US and China may be starting to embrace — could be the main driver of a long-term commodity bull run.

Stock building and an infrastructure boom are among the factors that have led to strong buying across commodities.

Each individual commodity has its own story to tell and while oil has been dragged back by moribund jet fuel demand, it has also been propelled higher by the 1 million b/d production cut by Saudi Arabia on top of OPEC+ reductions and improvements in global mobility.

Platts Analytics sees Dated Brent prices as fundamentally in the mid-$50/b range towards end-2021. However, it notes "the strength in the reflation trade, which has buoyed all risk assets in recent months, could move the set point of that trend higher/lower."

Indeed, the power of fiscal spending on commodities should not be downplayed.

"With crude oil together with gold being two of the most liquid commodity markets, the reflation demand often tends to be concentrated in these two markets," said Ole Hansen, head of commodity strategy at Saxo Bank.

Oil demand is relatively price inelastic and much more responsive to shifts in trend regarding income — and by extension — fiscal stimulus, tax incentives and other economic drivers. As such, the pace of economic recovery remains critical.

A weaker dollar makes commodities cheaper for holders of other currencies.

"We do seem to be entering into somewhat of a commodities supercycle, but this is more the consequence of supply and demand factors aligning temporarily, resulting in significant spikes in prices," said Chris Midgley, head of S&P Global Platts Analytics.

"A key driving factor is the healthy growth being observed in the East, led by China, where, unlike the West, we see demand has already recovered to above 2020 levels," Midgley said.

2020 surge in prices coincides with plummet in US dollar index

JKM prices lead rally

Can the price rally be sustained in 2021?

2020 price surge

End-2021 price outlook

Price sensitivity to dollar

Commodities' inverse relationship to dollar holds during 2020

S&P GSCI Index

Dated Brent crude

$14 trillion global stimulus

A new supercycle?

2020 surge in prices coincides with plummet in US dollar index

JKM prices lead rally

Commodities bounce back

Insight

February 2021

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Insight
Currie said that in the case of oil, capital expenditure had fallen an unprecedented 40% in the first half of 2020 and noted that even oil demand would be boosted by spending on the energy transition, due to the volume of oil consumed in the course of green energy infrastructure projects.

Goldman Sachs says that a new era of policies aimed at social need will likely create a cyclically stronger, more commodity-intensive economic growth.

Future spike?

While many analysts are still cautioning against a rapid rise in oil prices, there is a similar consensus growing that there is a risk of a price spike further out, given the billions of dollars in upstream spending cuts and the possibility that US shale will struggle, as a marginal producer, to plug shortfalls quickly.

JP Morgan’s head of oil and gas Christyan Malek told Platts in a recent interview that the risk of oil prices spiking above $100/b in the coming years has increased due to the impact of COVID-19 and likely ESG and climate change-related pressures on US shale, with longer-cycle upstream investments probably coming too late to plug a $650 billion capex shortfall.

“COVID has been like the guillotine and laid a lot of production to rest and killed the shale whack-a-mole of oil the last few years, and we have a cleaner supply and demand outlook, which is where the supercycle could kick in,” Malek said.

US oil production peaked at around 13 million b/d in late 2019 and has since fallen to around 11 million b/d.

The International Energy Forum said in December the oil and gas industry will have to overcome its pandemic-induced retrenchment and boost investment by at least 25% annually over the next three years to prevent a supply crunch that could send prices skyrocketing.

“With global oil demand still running close to 6 million barrels/day below pre-coronavirus levels we do not see a material upside risk to oil prices before 2022 or even 2023, at which point the dramatic cut in capex from global oil majors may start to impact the ability to find new barrels,” Hansen said.

Even the most ardent commodity bull will be wary that the pandemic still has its own cycle to finish.

Oil demand is relatively price inelastic and much more responsive to shifts in trend regarding income.
Looking upstream

As the energy transition gathers pace, the oil and gas industry faces increasing scrutiny of the full life cycle and upstream carbon intensity of energy sources, with significant market implications. By Peter Compton
A s oil investors and consumers look to reduce their carbon footprint and producers seek to reduce emissions, growing demand for “low-carbon oil” — oil produced at a lower rate of greenhouse gas (GHG) emissions — could create a non-uniform shift in the global supply curve and impact oil pricing.

The global economy will remain dependent on oil as a primary energy source for the foreseeable future. Despite wide-reaching and accelerating efforts to reduce GHG emissions, S&P Global Platts Analytics Future Energy Outlooks forecasts global oil demand will plateau just below 115 million b/d in the latter half of the 2030s and first half of the 2040s.

Even in the Future Energy Outlooks 2-degree-Celsius scenario — which restricts global emissions to a level that would limit cumulative global temperature change to just 2°C from pre-industrial levels — global oil demand is still expected to slowly grow throughout this decade.

In the face of forecast oil demand growth, an increased global focus on environmental, social and governance factors is encouraging oil and gas market participants to produce, invest in, and trade energy sources with lower associated emissions.

Sixteen of the 20 largest international oil companies (IOCs) based in Europe and North America — representing 17 million b/d of crude oil production — have announced targets to reduce either their upstream emissions or overall operational emissions. The chart above right displays these companies’ emissions reduction targets and target dates, with the icon size representing 2019 total oil production.

For those IOCs that have announced upstream-specific targets, those targets are represented. Icon size represents 2019 total oil production. Source: S&P Global Platts Analytics, company reports

Looking upstream

National, international, and company-level efforts to reduce GHG emissions in the oil and gas sector are clearly well under way, while global appetite for crude oil and its derived products continues to expand. The result of this combination of factors is a rapidly-increasing demand for low-carbon oil — oil that is produced at a lower rate of emissions.

An industry standard

The foundational metric necessary for market participants is carbon intensity — the ratio of carbon (or carbon-equivalent) emissions to unit of output. Applied to the upstream oil industry, carbon intensity refers to the quantity of emissions per barrel of oil produced (kg CO² equivalent/barrel). Unlike carbon footprint — which measures a company or project’s absolute emissions — carbon intensity provides the measure of emissions on a per-barrel basis, enabling the market to normalize the upstream emissions efficiency of a particular barrel or particular operator.

Carbon intensity can also be applied to different segments of the oil industry, including transportation, refining, and refined product consumption.

Oil production is a highly complex process involving dozens of phases and emissions sources which vary widely from field to field. However, the majority of GHG emissions created by the production process can be translated into capital flows toward supply sources with lower carbon intensities and away from those with higher carbon intensities.

Market response

Growing demand for low-carbon oil will result in significant impacts to various portions of the oil market including capital investment, supply, and price. Stakeholder calls for less carbon-intensive energy sources and investment opportunities have begun to accelerate decarbonization in oil and gas, industry, and commercial transport. Banks, sovereign wealth funds, and other sources of external capital have

Notes: For those IOCs that have announced upstream-specific targets, those targets are represented. Icon size represents 2019 total oil production. Source: S&P Global Platts Analytics, company reports

Select IOC emission reduction targets

Upstream emissions by source, select US fields

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also declared intentions to this end as they look to reduce the carbon footprint of their portfolios while maintaining competitive returns.

As for upstream operators themselves, they will be forced to consider the carbon intensity and future associated costs when making their own development decisions.

Growing demand for low-carbon oil could create a non-uniform shift in the global supply curve. Depending on the levels at which buyers seek to offset the carbon emissions of their full cycle operations and producers take steps to directly reduce or offset the emissions associated with their upstream operations, the costs associated with these actions will likely be incorporated into production costs. Because actual production costs do not correlate with carbon intensity, the cost impact of incorporating carbon reduction efforts into production costs will vary along the supply curve.

Pricing carbon intensity

Finally, growing demand for low-carbon oil could come to devalue crude produced at a relatively high rate of emissions. As the market for low-carbon oil matures, prices will likely reflect the associated upstream carbon intensity, with crudes of lower carbon intensity trading at a premium to those of higher carbon intensity.

Platts Analytics is testing a series of models estimating field-level upstream carbon intensity, incorporating Platts’ datasets, as well as relevant public domain data. Our working models incorporate several metrics including crude gravity, reservoir age and depth, flared gas volumes, and in-situ steam generation. We have applied our primary working model to a pilot group of 50 oil fields of various natures and locations – a selection of the results are shown below.

Establishing field-level upstream carbon intensity allows for more in-depth analysis of the implications. Such further analysis will include quantifying the differential between the price of a standard barrel (e.g. Brent, WTI) and the price of an offset – or upstream carbon-neutral – iteration of the same barrel.

The aforementioned impacts to the global supply curve will be quantifiable, as well, by incorporating the cost of offsetting emissions in the cost of production. In a market seeking low-carbon oil and limiting capital and market demand for high-carbon production, fields with high carbon intensity of production would see carbon-inclusive production costs rise.

As the low-carbon oil market develops in 2021 and Platts Analytics works with market participants to ensure provision of valuable data and insights, new features are likely to emerge in addition to the concepts highlighted above. We will be observing with anticipation as the first barrels trade with carbon intensity considered as an attribute, and a new era in the global oil market emerges.
Power plays
European majors continue to lead the way in installed renewables capacity and wider electrification, S&P Global Platts’ second report on energy transition strategies of global oil and gas companies shows. By James Burgess, Henry Edwardes-Evans and Emma Slawinski

Just as leading international oil companies were revealing ambitious plans in the renewable energy space early last year, the coronavirus pandemic turned energy markets on their heads, upending demand forecasts and forcing companies to revise their assumptions and outlooks.

S&P Global Platts analyzed Big Oil’s energy transition ambitions and strategies in April 2020. These plans were in train before the pandemic struck, so the question was whether the coronavirus would delay or accelerate the transition.

With the pandemic foreshadowing a lower-carbon system with reduced fossil fuel consumption, the answer has definitively been an acceleration – at least in Europe.

Total, Equinor, Repsol, BP and Shell are all taking determined steps to realize ambitious targets, adding renewables capacity, making further acquisitions in the downstream energy retail and EV charging space and setting out interim targets for renewables that get them to the long-term installed capacity figures and CO2 emissions targets.

US majors ExxonMobil and Chevron have not bought into this vision yet, but recent statements from the companies showed a change in tone, at least. Most striking was ExxonMobil’s announcement that it would reduce upstream emissions intensity by 15-20% by 2025, after its vocal resistance to setting such targets.

We surveyed the situation again towards the end of 2020. While our headline rankings for the eight companies – based on operational assets and current activities – did not change, the beefed-up future targets of several of the companies stood out, and this is reflected in changed ambition scores.

All bar Shell, ExxonMobil and Chevron enhanced targets for installed renewables capacity, either increasing levels, or fleshing out interim targets, setting a pathway for achieving the longer-term more aspirational goals.

Likewise, many have added to installed capacity since April 2020. Total added over 2 GW between our first and second survey. It then made a further significant acquisition in January, taking a stake in India-based Adani Green Energy that adds 1.18 GW of solar assets to its portfolio (not captured in the infographic).

BP, Repsol, Shell and Eni all lifted installed capacity, while Chevron’s installed capacity fell, with the divestment of a US geothermal facility it previously listed as an asset. However, the company announced a partnership to develop 500 MW of renewable generation to support its operations across several global locations including the Permian Basin.
Power plays: energy majors’ transition strategies

International oil companies had already made in-roads into the renewables space at the start of 2020. The coronavirus pandemic has only accelerated the trend in Europe, while US-based companies continue to focus on traditional fossil fuel assets. The power plays ranking is based on current operational assets across renewables, CCS, downstream energy retail, sustainable transport and battery storage. The ambition ranking is based on stated renewables capacity targets.

Methodology: The power plays ranking is based on current owned, operational assets across renewables, CCS, downstream energy retail, sustainable transport and battery storage, with the ambition ranking is based on stated renewables capacity targets. Current installed capacity is calculated based on 100% share ownership and is correct as of Nov 30, 2020. Footnotes shown by colored circles have been assigned based on best available qualitative and quantitative information, focusing on currently owned assets and active large-scale projects and businesses.

Source: S&P Global Platts, company reports

<table>
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<th>No.</th>
<th>Ambition Ranking</th>
<th>Power Plays</th>
<th>Total installed renewable capacity*</th>
<th>CCUS (million mt/yr)</th>
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*Total renewable capacity includes solar, wind, hydropower and geothermal

Power Plays

IOCs are leveraging their impressive trading and marketing reach to help others manage risk around increased volatility, while selling new services via established brands.

Ene and Repsol have taken significant steps to move their renewables businesses forward. Both provided guidance on installed capacity ambitions out to 2030, pushing them above Shell and Equinor in the “ambitions” rankings. BP and Repsol reduced dividend payments in part to increase investment in their renewables divisions.

Equinor has made a final investment decision on its Dogger Bank A and B windfarms in the North Sea with partner SSE Renewables, with the first 1.2 GW stage expected online by summer 2023. Ene also became a partner, buying a 20% stake December A. And Equinor made a decisive step into the green hydrogen space December 7, joining Shell in the Northern project in the Netherlands.

Beyond renewables

Ownership of renewables is one piece of the larger electrification story. IOCs are also leveraging their impressive trading and marketing reach to help others manage risk around increased volatility, while selling new services via established brands. But there are areas where all the IOCs remain weak, notably in the crucial power networks that are needed to integrate booming renewables.

And in terms of nailed-on financial commitments, the IOCs generally remain focused on their core businesses, squeezing as much value as they can from fossil fuel assets, and Repsol’s 25% of capital expenditure dedicated to low-carbon projects is far higher than the proportion committed by the others.

The capacity additions pale in comparison to the overall renewables market, S&P Global Platts Analytics estimates that global wind and solar additions in 2020 totaled 126 GW (130 GW of solar, 115 GW of wind and 19 GW of hydro), a significant increase relative to 2019, as a result of booming installations in China during December.

“Besides offshore wind, where oil companies have already established themselves as large players, the competitive advantage of IOCs, especially versus vertically-integrated utilities, is still not completely clear,” S&P Global Platts Analytics head of global power planning Bruno Brunetti said.

“That might be a reason why IOCs’ renewables capacities still represent a very small portion of the [global] annual solar and wind adds.”

“Although COVID-19 has seen some project disruptions or delays, global wind and solar capacity added this year will be well above expectations and 2019 levels, especially thanks to a sharp rebound in China, which accounted for about half of the total annual additions. China’s reported wind additions have been exceptionally high, mainly as a result of end-of-year deadlines to receive subsidies,” Brunetti added.

ExxonMobil said in September that returns from renewables were insufficient, while slashing spending, writing off up to $20 billion in impairments and maintaining dividend payments.

More recently, Shell said its focus was less on building and running renewable energy assets than on procuring green supply for customers.

“You do not need to put a lot of capital necessarily at play to get access to the electrons. Our strategy is more value-oriented than focusing on just the generation capacity, which will tend to be the lower end of the returns in that value chain,” Shell’s chief financial officer Jessica Uhl said in February.
Closing the loop

Recycled plastics are moving closer to true commodity status as demand for the material grows. Ben Brooks discusses recent dynamics that signal a burgeoning global marketplace.
On January 1, 2021, the EU introduced a plastics tax of Eur800/mt on plastic packaging that is not recycled.

The levy is just the latest example of policies being enacted by governments across the world to tackle the issue of plastic pollution. A raft of new legislation, along with voluntary commitments by major users and producers of plastic, aims to rid the world of plastic waste and is pushing demand for recycled plastics ever higher.

S&P Global Platts Analytics forecasts that mechanically recycled plastics will displace over 1.7 million mt of virgin polymer feedstocks by 2030, compared with 688,000 mt in 2020.

For the ambitious waste reduction plans to succeed requires the evolution of recycled plastics into efficient, global commodity markets. There are signs that this is already happening.

Towards commoditization

Recycled plastics have gone from localized marketplaces, where demand is based purely on cost effectiveness against virgin equivalents, to a global market where demand is focused on the highest-value material.

The value of recycled plastics – and it is substantial – is beginning to be unlocked. It is this value that is driving the commoditization of plastic waste markets and may, ultimately, help tackle plastic waste pollution. Simply put, there will be no sense in discarding a material into the natural environment when it has such a high value and can be exchanged in an efficient market.

A number of different factors are helping to drive commoditization in the recycled plastics markets. Some, such as an increase in the number of participants active in the market, have stemmed from legislation.

Various governments, beginning with Europe but more recently in the US and across Asia, are mandating that participants in certain industries, predominantly from legislation. Various governments, beginning with Europe but more recently in the US and across Asia, are mandating that participants in certain industries, predominantly those that work with plastic packaging, decrease their reliance on virgin plastic and increase their use of recycled material. In some cases, this is being backed up by taxes.

The UK’s version would charge GBP200/mt on plastic packaging that does not contain 30% recycled content by April 2022. S&P Global Platts analysis shows the tax would be more costly for market participants than adhering to minimum recycled plastic content, despite the higher price tag compared with virgin plastics.

The effect of these policies has been to boost the number of market participants, predominantly buyers – or “users” – of plastic packaging – increasing competition and necessitating greater supply and, therefore, a larger marketplace. Already, there are signs that supply in local markets is insufficient to serve local demand, as recycling rates can never be 100%. This causes companies to look further afield.

In Europe, demand is exceeding the potential of both the local and regional markets, leading participants to look to Southeast Asia, in particular, for additional supply, bringing the region into a growing global marketplace.

Plastics to fit the mold

Larger marketplace and more market participants require a degree of product standardization.

In virgin plastics markets, this is not a concern. A virgin polymer buyer can be certain that plastic bought from one supplier will be the same as, or at the very least, compatible with, that from another supplier. There is a consistency of technical properties, volume and colour.

On a global scale, this allows arbitrage economics to aid in balancing global supply and demand. That is why prices for polymers in different regions tend to trend in a similar fashion. It is also why a global view of these markets is essential. Product standardization in recycled plastics is trickier. They are, after all, derived from waste. Standing in the way of arbitrage are differing product specifications and levels of contamination, as well as concerns over traceability across different regions, and even within the same region. Waste collection systems can vary hugely, even within the same country, yielding different compositions of waste to be recycled and different qualities of recycled material. You get out what you put in.

Buyers want to be sure of product quality but they also want to be sure that their material, particularly that collected in developing countries, is being sourced legally, is what it says it is, and that workers across the value chain are being treated fairly. The “E” in ESG – environmental, social and governance – is as important as the “E” when it comes to recycled plastics.
Large-scale investments in standardization are now being made by some of the biggest companies across the waste management industry all the way through to the fast moving consumer goods industry.

In Europe, where the most established recycled plastics markets are found, levels of key contaminants in R-PET clear flakes, such as PVC, acetaldehyde and benzene, which all affect how a beverage bottle looks and performs, as well as having health implications, are moving lower and in some cases are now negligible. Production is also becoming more consistent, meaning buyers can be sure that each separate batch will perform in the same way.

In Southeast Asia, Suez, Veolia, Coca-Cola and Indorama, among others, have made investments in new plants to produce R-PET clear flakes with low levels of PVC content. S&P Global Platts pricing data clearly shows that a reduction in PVC contaminant levels correlates to an increase in market value of R-PET clear flakes. In some cases, this premium for material with a PVC content of less than 30 parts per million (ppm) can be $50/mt-100/mt compared with material with up to 100ppm PVC content.

US recycled PET is also becoming more uniform and showing reductions in contaminant levels. This push is being driven by California, where a minimum recycled plastic content in PET bottles will apply from 2022, starting with 15%. Those affected by this legislation – chiefly beverage bottle producers – will demand high-quality material so that the consumer cannot tell a recycled bottle from a virgin bottle.

The California R-PET clear flake market is largely dominated by material with a PVC contaminant level of up to 100ppm, reflecting that the US R-PET sector is geared towards lower-grade end markets, such as the fibre and textiles markets. However, more and more material is entering the market with levels no higher than 10ppm PVC, bringing it much closer to the standard seen across Northwest Europe and feeding growing demand for high-quality material.

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Closing the loop

These developments in both Southeast Asia and the US are making material produced in different regions more alike, meaning more options for market participants – whether buyers or sellers, and regardless of their location.

Regional recycled plastics markets are exerting increasing influence over the global marketplace, S&P Global Platts pricing data shows. And if any further evidence were needed, it was provided in early 2021 by a tight container market.

Europe and the US recycled PET markets saw price increases at the beginning of the year, in part due to a lack of supply amid a shortage of containers to import material from Asia. These gains outstripped those seen in Southeast Asia as participants there struggled to send material to Europe and the US West Coast.

Increased global trade in recycled plastics has also driven an increase in liquidity and new contracting dynamics.

Where participants were once satisfied with linking supply or purchasing contracts to the relevant virgin price, or fixing prices for an entire year, these practices now mean that contracts quickly cease to reflect the true value of material.

Participants are moving away from long-term fixed price contracts and are choosing to take much shorter time periods as reference points.

This became particularly apparent in spring 2020, when spot market bids and offers were reported to S&P Global Platts with the proviso that they were valid for only 24 hours. Again, this points to the need for more data, on a more granular level, providing more transparency.

Plastic pollution is a global issue that requires a global response, and the development of a large and liquid market for recycled plastics can play an important role in this effort. Unlocking the value of plastic waste will mean less slips through the net. And understanding that value is key to driving the plastics industry forward.
A

bu Dhabi came late to the oil exploration boom that spread across the Middle East after World War I, and later on it stood out for holding on to foreign interests in its energy assets when nationalization swept the region during the 1960s and 1970s.

This foreign exploration collaboration, which was aided offshore by French oceanographer Jacques Cousteau and filmed by Louis Malle, has survived to this day.

The Anglo-Persian Oil Company (now BP), Shell, Compagnie Française des Pétroles (now Total), Exxon and Mobil Oil were part of Abu Dhabi’s oil history and the emirate is still courting these partners – and several more from India to Russia – to help it achieve its 2030 strategy: boosting oil production capacity to 5 million b/d from more than 4 million b/d now.

Abu Dhabi, which has the majority of oil and gas reserves in the UAE, a seven-member federation, is pressing ahead with these efforts even as the coronavirus pandemic devastates energy consumption, fears of approaching global peak crude demand take hold, and energy transition looms over the oil and gas industry.

Unabated investment

The headwinds do not appear to be pushing state-owned Abu Dhabi National Oil Co. off its planned course.

In 2020, ADNOC attracted around $17 billion in foreign investments, increased its oil output capacity to more than 4 million b/d and got the nod to spend $122 billion between 2021 and 2025. The Supreme Petroleum Council (SPC), formerly in charge of Abu Dhabi’s energy decision-making, approved the ambitious capital expenditure plan for various energy projects and mandated the national oil producer to become a “hydrogen leader” as well.

Combining oil and low-carbon

Jaber, who previously worked at ADNOC and moved around several government companies until his return to the energy firm in 2016, is now transforming the national oil producer to compete in the energy transition age.

Prior to his appointment as ADNOC CEO, Jaber was CEO of Energy at Mubadala Development Co. (now Mubadala Investment Co.), a sovereign wealth fund now managing $232 billion in assets and focused on economic diversification. While at Mubadala, Jaber helped to establish Masdar, a clean energy firm, in 2006. Masdar now has a renewable energy portfolio of over 10.7 GW, with projects ranging from...
offshore wind farms in the UK to waste-to-energy projects in Australia. So combining two seemingly conflicting projects—accelerating oil and gas investments and creating a clean energy portfolio—is nothing new to Jaber, who is also championing foreign participation to reach both goals.

And judging from the line-up of investors who want to do business with it, ADNOC is in a good position to make through the energy transition age.

International oil companies that have pledged to lower their energy production and reduce their carbon footprint are still holding on to their ADNOC investments and some have even acquired new stakes. OMV and Eni bought stakes in ADNOC Refining from the parent company and formed a joint venture, ADNOC Global Trading, alongside ADNOC.

BP and Total, which each hold 10% of ADNOC Onshore, signed on to be part of ICE Futures Abu Dhabi, a new exchange that will trade futures of ADNOC’s flagship crude grade. The launch of the Murban futures contract, based on the Murban crude produced by ADNOC Onshore, was delayed from 2020 due to the pandemic, but it is set to start trading on the Abu Dhabi-based exchange on March 29.

BlackRock, the $8.7 trillion asset manager whose Aladdin Climate system promises investors the ability to assess climate risk in their portfolio, invested alongside other companies in select ADNOC oil pipelines in 2019 for $5 billion. That transaction was the first foreign investment involving mid-stream pipelines in ADNOC’s gas pipelines and real estate assets in 2020.

France’s Total, which aims to become carbon neutral by 2050, started the first production of unconventional gas in Abu Dhabi in 2020, from its 40% stake in Ruwais Diyab, a partnership with ADNOC, which is seeking to achieve gas self-sufficiency. Total and ADNOC have also signed an agreement to explore joint research, development and deployment opportunities in carbon capture, utilization and storage (CCUS) and reduction of CO2 emissions. ADNOC also has an agreement with Eni to explore new opportunities for collaboration in CCUS.

Currently ADNOC’s Al Reyadah facility has the capacity to capture 800,000 tons CO2 annually and the company plans to expand the capacity six-fold by capturing CO2 from its own gas plants, with the aim of reaching 5 million tons CO2/year by 2030. ADNOC also plans to reduce its greenhouse gas emissions intensity by 25% by 2030.

More recently, ADNOC teamed up with Mubadala and Abu Dhabi–owned investor ADQ in an alliance aimed at making Abu Dhabi a leader in low-carbon green and blue hydrogen production.

So far, ADNOC appears to be managing to navigate energy transition by knitting together its strategies around oil and gas production and low-carbon investments. Abu Dhabi has come a long way since 1962, when the shipping of its first crude on the open market aboard the tanker British Signal marked the realization of its oil dreams. But with ADNOC’s help, the emirate may be able to embrace energy transition without compromising on its continued ambitions in petroleum.

International oil companies that have pledged to lower their energy production and reduce their carbon footprint are still holding on to their ADNOC investments.

The value of accurate, timely market data in energy commodity trading is inarguable. Ongoing price volatility, ever-changing market sentiment, weather patterns and geopolitical intrigue, as well as the credit worthiness of trading partners present risk in need of analysis.

Here are 5 steps to capitalize on the right information at the right time.

1 AGGREGATION
Some traders rely on 20+ curves and 5+ data sources when executing a trade. Trader workflows suffer without a proven process to aggregate and structure new, existing and bespoke data sources, compile seasonally adjusted energy commodity curves nightly, and stream them the trading desk on-demand.

2 ACCURACY
All data, at some point, contains errors, gaps or inconsistencies. If you rely on data for trading, risk or evaluation decisions, you must assure data integrity, remove outlying sources, validate and correct errors, carefully create forward curves, comparatively test data points and perform accuracy checks with vigilance.

3 ACCESS
Users throughout the organization, like traders, have a need for accurate, immediate data. Having one reliable data delivery system, via multiple delivery mechanisms such as FTP, open API or a third-party aggregator, can prevent missteps, enhance decision input, create organizational continuity and support the business mission.

4 ANALYSIS
Using decentralized spreadsheets for historical or trend analysis, price curves, spread-curves, forward curves or other detailed analysis, is a sure recipe for inconsistency and errors. A centralized, automated analysis, with the tools to perform ad-hoc and bespoke analysis, can ensure reliable decision support.

5 AUDITING
Pressure from regulatory and corporate overseers to operate transparently demands tracking the ongoing “who, when and how” of data usage. Public and shareholder trust and brand integrity depend on a data provider that practices correct permissioning and accurate user declaration, ensuring proper protocol and avoiding non-compliance costs.

How Do You Approach Data Acquisition and Analysis?
Learn more how to focus on what you do best; rely on FIS to efficiently and effectively manage and analyze your decision input for greater returns across your trading empire.
Making waves

An LNG trading hub centered around India and the Middle East is taking shape, offering a network of terminals and flexible delivery. Kenneth Foo, Srijan Kanoi and Dex Wang look at the latest data illustrating the rising appeal of the MEI zone.
On September 25, 2014, the Indian government launched the “Make in India” initiative to transform the country into a global manufacturing hub. While debate over the success of this plan persists today, a different kind of hub is emerging.

India has quietly evolved into the nerve center of the LNG trade in the Middle East-India (MEI) zone. LNG imports into India have almost doubled in six years, with imports in 2020 reaching 26.6 million mt, from 13.9 million mt in 2014. It’s a region where spot LNG cargoes change hands flexibly between buyers and sellers within a network of terminals, with relatively small differences between locations. Buyers enjoy MEI optionality, or the ability to divert cargoes to terminals in India, Dubai and Kuwait.

This trading hub is akin to bulk commodity zones like Amsterdam-Rotterdam-Antwerp (ARA), and the US Gulf Coast for oil refined products, as well as Japan-China-South Korea-Taiwan (JKTC) for LNG shipments into North Asia.

In 2020, the MEI trading hub will account for nearly 326 million mt of LNG imports, equivalent to 16.8% of the JKTC trading zone. But by 2030 this forecast is to reach about 22.5% of the JKTC volume, according to S&P Global Platts Analytics.

Three factors drive this trend. Firstly, India is a mere three-day voyage from the key LNG-producing countries of Qatar, Oman, Abu Dhabi and Egypt. The country also straddles the Asia-Pacific and Atlantic basins where traders frequently manage the optimal pairing of LNG cargoes loading from either one. This geographic position has enabled a high degree of flexibility in trading terms — vessel, discharge port and load-port nominations.

It has also allowed the MEI hub to be a valuable delivery outlet for traders seeking arbitrage and portfolio optimization opportunities. Sellers have a network of many competitors, which hinging on a variety of factors like shipping rates, as well as LNG spot prices in North Asia and Europe.

Secondly, India’s appetite for LNG is not linked to long-term contracts and has therefore ignited spot LNG demand. LNG is expected to remain a key component of India’s gas consumption as the government aims to boost the share of natural gas in the energy mix from 5.2% currently to 15% by 2030, amid dwindling domestic gas production. The country is now the fourth-largest LNG importer globally, behind Japan, China and South Korea.

With a lower number of long-term supply obligations relative to other big markets, India sources at least a third of its total LNG imports on a spot basis — a greater percentage than anywhere else in the world. By comparison, Japan consumes close to 10% on a spot basis and China about 16-20%, according to Platts estimates.

Thirdly, there is a growing diversity of market participants and supplies delivered into the MEI region. A key ingredient towards the formation of a liquid trading hub. At least 30 Indian end-users, national energy companies, international trading houses and portfolio majors actively trade shipments loading from the Middle East, Asia-Pacific, Africa and the US, according to Platts estimates. This market diversity has created a dynamic spot trade with significant cargo churn and flexibility.

Platts observed 6.37 million mt of tenders for spot cargoes issued for India, Dubai and Kuwait for delivery between January-December 2020. This compares with 12.32 million mt of LNG tenders for JKTC delivery over the same period a year earlier.

Since June 2018, Platts has published over 320 bids, offers and trades, about 11.5% of all Market-on-Close (MOC) data, for MEI delivery. Among these, 57.5% of bids, offer and trades were for sale only to India, whereas 39.6% were for delivery to India, Dubai and Kuwait.

However, a few headwinds remain. The lingering effects of the coronavirus pandemic on LNG demand, as well as the existence of legacy term contracts with non-LNG pricing, could stunt the growth of an active spot market. On the other hand, the continued decoupling of Platts West India Marker (WIM) from Dated Brent and Henry Hub prices may continue to spur greater adoption of LNG pricing.

Platts WIM is now increasingly used as a pricing basis for LNG tenders and domestic gas supply contracts in India. Furthermore, the development of a liquid LNG spot market in MEI carries greater significance considering the demand potential of two other fast-growing markets in South Asia – Pakistan and Bangladesh — which has been aided by government policies.

Pakistan has opened its receiving terminals to third parties to boost LNG imports, while Bangladesh imported its first spot cargo in September 2020 amid falling domestic gas production and the opening of new LNG-fired power plants. India is also undergoing a transformative phase in the development of its gas markets, launching reforms of its pipeline tariffs, city gas distribution guidelines and other regulations to boost consumption.

Like the “Make in India” initiative, there are still some hurdles to building a regional LNG trading hub with India as its focal point. But there are good grounds for optimism.
The shipping sector arguably proved more resilient than many others in 2020. Only a few months after the start of the IMO 2020 regulations setting lower sulfur limits for fuel, shipping markets saw heightened volatility resulting from a COVID-19-related halt in economic activity and end-user demand destruction. While tanker rates saw record demand in April as producers put oil on ships amid a lack of onshore storage, markets saw a rapid downward correction as supply cuts curtailed demand. Bulker rates did not see the lows observed in other shipping markets thanks to growing iron ore demand from China, although some routes were adversely affected by demand reduction in commodities such as coal. Container freight rates were under pressure throughout 2020 but spiked in December due to tightness in empty container boxes in Asia.

Globally, the coronavirus pandemic put extreme stress on global supply chains, but seafarers, under-recognized as essential workers, made great sacrifices in order to maintain trade flows. At the same time, the risks involved were extreme for some, owing to piracy. According to the International Maritime Bureau, seafarers reported 130 kidnappings in the Gulf of Guinea in 2020 from 22 incidents, above the prior high of 121 crew kidnapped in 2019.

Sadan Kaptanoglu, who was elected president of BIMCO in 2019 to serve for two years, spoke about the organization’s efforts to protect the interests of all stakeholders in the value chain through the pandemic, and the transition towards greener fuel solutions. She also discussed BIMCO’s work on inclusion and the need to turn the spotlight on underrepresented groups in the shipping industry.

What actions has BIMCO taken to protect the interests of the people at sea given the impact of travel restrictions and quarantine requirements?

I should start by saying thank you to the whole shipping industry. During the whole pandemic, we did a great job. The supply chains never stopped; ports never stopped. No vessels stopped, and so all the necessary goods have been reaching consumers. It would have been a disaster if there had been breaks in the supply chain.

Of course, this was a very difficult and challenging thing, and it came with a cost. And the biggest cost is to our seafarers. They are certainly the hidden heroes of the pandemic. Still today, we have a bit less than 400,000 seafarers stranded on the sea, and this is not acceptable. They need to have the same privilege as airline workers, and it is proving a challenge. As governments work in crisis mode, only 52 IMO member states out of the 174 have recognized seafarers as key workers, and we will continue working towards this inclusion.

BIMCO is also very much involved in the relationships between the ship owners and the charterers. Our involvement comes from the contracts we have designed, and the contractual clauses we are producing, to allow contracts to account for these special difficulties.

Another thing we have been looking at, which is related to the seafarers question as well, is piracy. The situation in Gulf of Guinea is not acceptable and we are raising awareness about this. This directly affects the quality of life of our people as their lives are under threat. Nigeria must start to fulfill all the promises it made and police the area as much as it should have.

The energy transition was a key point in your agenda when you became President of BIMCO – can you talk a little about that?

We have to rethink our place in the world and what is really important because, so far, we have acted as conquerors, ending up with the pandemic, pollution, and all sorts of things. This year, the world has shown that we can deal with these events and enact complex measures, and I hope that we can apply this spirit to climate as well. Right now, the biggest thing we must focus on is reducing emissions. Back in December 2019, we all were concerned regarding the upcoming IMO 2020 (shift to low-sulfur marine fuels), but we succeeded. This should give us hope and courage.

The first aim of the IMO in this coming year is laying out the short-term standards (on emissions). They are already all there, but now we have to go into the details, see how we can develop these indicators to comply and keep the level playing field for all of our members and all for the shipping industry. BIMCO also has a working
group on the topic to see how we can contractually keep up with these short-term measures while keeping the balance between operators and the charterers. Our strength comes from our members because they are so generously giving us their experts.

The European Parliament announced the inclusion of the shipping industry in the EU Emissions Trading System, and we will have more information towards the second quarter of 2021. What is BIMCO’s opinion on this?

One of the biggest threats against shipping are regional regulations. The regionalization of regulations, regardless of what and where they are, will never improve environment protection. On the contrary, they will jeopardize the global effort of this very international industry. We were very disappointed when we heard that the European Union decided to take in the shipping industry, and for a very simple reason: shipping is international, and it should be internationally run.

Secondly, while I respect the idea to incentivize innovation by imposing regulations, the technology isn’t there. Hence, it will end up as a tax only. Because this is a regional taxation, shipowners will never be able calculate the cost of running a ship given that it could load or discharge virtually anywhere. They will just see this as a tax and will not invest in innovation.

Are there any other lessons we should draw from this year?

One of the things that we have learned is how fragile our supply chains are, and we must tackle this. This ties in with the topic of seafarers and regulations, and we must work together with non-shipping organizations, governments, and the IMO, to make sure that the supply chains are strengthened.

“This year, the world has shown that we can deal with these events and enact complex measures, and I hope that we can apply this spirit to climate as well”

You have been in the shipping industry for a long time, as your family was in the business. Shipping is not necessarily a career that a woman would consider. What’s your advice for people who want to go into this sector, especially for people who are currently underrepresented?

I believe only a certain type of person can do shipping: whether a woman or man, it doesn’t really matter, or any nationality, because this job is tough. Regardless of whether you are a shipowner, a captain, a broker, this is a highly competitive, 24-hour job, and it is for the ones who like to see the big picture and be internationally connected. I think, first, people should look at their character and see if they are up to this challenge.

When it comes to inclusion, I have to say that there are very successful females in our industry, maybe not as many as men in numbers, but they are damn successful. However, they are not in front of us, so we do not see them. One thing we do in BIMCO, and I was elected by men and I’m the first woman in this role, is try to set an example. At BIMCO, you will see more women on the board, more women in the secretary and executive levels. We also have 120 countries as our members, so in that sense, we have an inclusive culture.
Global fuel oil markets weathered choppy waters in 2020, contending with the monumental change brought by the International Maritime Organization’s global sulfur cap, but also demand destruction on the back of the coronavirus pandemic.

Demand for 0.5% sulfur marine fuel skyrocketed at the start of the year, as IMO 2020 regulations kicked in and made it the bunker fuel of choice. This led to record wide spreads between 0.5%S marine fuel and 3.5%S high sulfur fuel oil (HSFO) globally.

Unfortunately for those who invested in scrubbers – exhaust gas cleaning systems that allow ship operators to continue using higher sulfur fuels – the price rise was short-lived. Marine fuel markets came under pressure in February 2020 amid the intensifying COVID-19 crisis, which weakened arbitrage opportunities and left global oil markets to grapple with product oversupply.

While volatility from IMO 2020 was expected in the early stages of the year, no one quite anticipated the degree of volatility bunker players would face from the collapse of oil demand globally.

S&P Global Platts assessed the spread between 0.5%S marine fuel and 3.5%S fuel oil at its widest on January 3, 2020, at $321.50/mt, on an FOB Rotterdam barges basis. Following the widespread impact of COVID-19 on oil markets, the spread plunged 88% to $38/mt on June 4, 2020.

In addition to the overall decline in 0.5%S marine fuel prices, COVID-19 also disrupted the downstream pricing dynamic in the US Gulf Coast. Since April, the Houston marine fuel 0.5%S bunkers market has averaged a negative margin to the USGC wholesale barge market.

Houston 0.5%S bunkers fell to a discount as large as $35/mt to the cargo market at one point in 2020, after starting the year nearly $100/mt higher than cargoes. For comparison, the Houston IFO 380 bunkers price averaged a $37/mt premium to the wholesale USGC HSFO market for 2019, a typical spread for the retail end of the supply chain.

Relative strength

Transport fuel demand collapsed as a result of restricted travel and social distancing, but was felt more acutely in air and land transport fuels, with most global trade taking place on the high seas. Demand for jet fuel, gasoline and diesel came under significant

Fuel oil markets in 2020: a year in review

After years preparing for IMO 2020, all bets were off when the coronavirus pandemic derailed expected price and demand trends. Nevertheless, there were bright spots for marine fuels, write Tamara Sleiman, Rajesh Nair and Beth Brown.
By the end of September 2020, the 0.5%S marine fuel Brent crack surpassed that of all other transportation fuels in Europe, as it priced stronger than the traditionally more profitable products such as diesel, gasoil and jet. This strength continued into 2021, supported largely by an eastward pull towards Singapore and the surrounding region while domestic availability remained constrained on months of refinery run cuts.

The 0.5%S marine fuel Brent crack averaged $7.88/b in January 2021. To put this into perspective, the 2020 low on April 27 was assessed at 31 cents/b, while the 2020 high on January 6, 2020 was at $23.54/b.

Asian demand for 0.5%S marine fuel stemmed from the regional utility market and from sellers looking to restock after running down inventories in December in the lead-up to year end. Tighter LNG stocks prompted Northeast Asian electricity providers to secure, by whatever means necessary, other sources of power generation and industrial feedstocks, to keep up with robust winter energy demand.

By the end of September 2020, the 0.5%S marine fuel Brent crack surpassed that of all other transportation fuels in Europe

As such, the Asian marine fuel 0.5%S crack spread, the difference between front-month Singapore marine fuel 0.5%S and the Dubai crude swap, widened to a 10-month high of $13.07/b on January 20, 2021.

Similarly, the USGC 0.5%S marine fuel crack trended upwards in January 2021, amid limited local supplies, reaching levels not seen since before the pandemic. The product recently overtook USGC ultra low sulfur diesel (ULSD) to record the highest refined products crack in the region.

The USGC marine fuel 0.5%S forward curve shows the crack stabilizing around an $8-$9/b premium to Brent this year though, so the USGC ULSD and gasoline cracks are expected to overtake it later in the first quarter and remain at a premium throughout the summer, in line with seasonal increases in demand for those products.

Sustained demand for HSFO

Looking at the bottom of the barrel, 3.5%S fuel oil prices, which were expected to fall off a cliff after IMO 2020, showed resilience and enjoyed steady margins in 2020, with prices expected to be stable or firmer in 2021.

Rotterdam bunker sales saw HSFO take 28% of total demand in the year, and 34% in Q4. The European HSFO Brent crack averaged negative $8.74/b in 2020, compared with negative $13.62/b in 2019. This relative strength was supported by reduced refinery runs, power generation demand from Saudi Arabia, and increased demand from vessels retrofitted with scrubbers.

The USGC HSFO cracks strengthened throughout 2020 and were largely stable at about a $10/b discount to 0.5%S marine fuel due to HSFO’s outlet as a coking feedstock. US refinery utilization recovered to start 2021 at 82.5% operable capacity, the highest since March.

At the heart of the bullish sentiment around HSFO for 2021 are expectations of progressively rising demand led by an increase in the adoption rate of scrubbers. New scrubber installations are expected to rise from 18% of the global fleet in 2020 to 28% in 2025, and in December 2021, vessels with scrubbers are likely to account for over 1 million b/d of 3.5%S FO demand, according to S&P Global Platts Analytics.

But there may also be a shift in terms of the major locations for HSFO supply. The cost of maintaining storage and delivery infrastructure to meet a small volume of HSFO demand is likely to become unfeasible at all but the biggest bunkering hubs globally, with relatively smaller bunkering hubs refocusing on low sulfur marine fuel. That bodes well for Singapore, the world’s largest ship refuelling destination, with state-of-the-art infrastructure and vast storage capacities, putting it in a good position to take a bigger share of HSFO trade.

After tackling sulfur emissions, the next major IMO goals include reducing carbon intensity – the CO2 emissions of the international fleet averaged out per vessel. The organization is targeting a 40% cut by 2030 compared with 2008 levels, and a reduction in total greenhouse gas emissions of 50% by 2050.

A number of so-called “future fuels” are being considered, including hydrogen, ammonia and biofuels, but the infrastructure for these products is limited and upfront costs can be considerable. The transition to lower-sulfur bunker fuels in 2020 has demonstrated some of the unique challenges presented by global shifts in specifications, even within the same residual oil-based product. Therefore, the emerging lower-carbon bunkers are likely to supplement, rather than quickly replace, the use of residual-based fuel.

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**Marine fuel and fuel oil Brent cracks in 2020**

- **Marine fuel 0.5%**
  - USGC Barge
  - Rotterdam Barge

- **Fuel oil**
  - Singapore CFS 3.5%S
  - Singapore HSFO Waterborne
  - Singapore 3.5%S FOB Barge

**0.5%S marine fuel vs 3.5%S fuel oil physical spreads**

- **S’pore vs Cargo**
  - USGC vs Barge
  - Rotterdam vs Barge

*FOB basis prices Source: S&P Global Platts*
In early 2021 Russia secured an increase to its oil output quota under the OPEC+ agreement for February and March, the latest sign that Russia's comparatively strong economic position is allowing it to push for better terms under the deal.

Economics are set to underpin future negotiations in 2021, with Russia likely to continue to push to increase output volumes, despite uncertainty over demand.

Moscow-based analysts welcomed the latest OPEC+ decision, which allowed Russia to increase output by 65,000 b/d in February, and a further 65,000 b/d in March. Russia’s crude output was 9.10 million b/d in December according to the S&P Global Platts OPEC+ production survey.

In contrast, most other members of the group will maintain output at January levels, with Saudi Arabia announcing that it would add an extra 1 million b/d cut.

Russia's close ally Kazakhstan also secured a small increase to its quota from February.

Russia is better able to absorb oil shocks than many of its OPEC+ allies, primarily because of its flexible exchange rate to the US dollar, the currency used to price its crude. The ruble's value tends to fall against the US dollar when oil prices drop. This allows Russian producers, whose costs are primarily in rubles, to minimize the impact of low prices on their operations.

On March 6, 2020 when Russia temporarily walked away from the OPEC+ agreement, one dollar was worth 66.2 rubles. By February 16, 2021 the ruble had weakened to 73.31 against the US dollar, according to data from Russia’s Central Bank.

The coronavirus pandemic and continuing uncertainty over the demand recovery have hit OPEC+ countries’ economies in 2020. Some, such as Russia, have taken advantage of fiscal mechanisms and a free floating currency to minimize the damage, while others have been harder hit. This is how some of the members’ key economic indicators compare.
Speaking after the January meeting where the new quotas were agreed, Russian deputy prime minister Alexander Novak said he hoped the outlook would be even more positive in two months’ time, and there would be an option to further increase production.

Russia is aiming to bring back 2 million b/d of production compared to its December 2020 output level by June. Analysts at VTB Capital estimate that Russia’s quota may increase further by some 80,000 b/d in April-June, if Russia is to achieve this aim.

Future policy

Uncertainty over the demand situation makes it hard to predict what may be on the table when the group next holds its full ministerial meeting on March 4.

Many countries continue to struggle with rising coronavirus cases and have tightened lockdown measures in recent months. While there is significant optimism around vaccines, there is also a lot of uncertainty over how quickly these can be rolled out, and when that will translate to a return to normal economic activity.

Even under negative demand forecasts, Russia is likely to remain in a comparatively strong economic position. As well as the flexible ruble-to-dollar exchange rate, the fiscal rule introduced in 2017 has reduced revenue volatility and softened the impact of oil price fluctuations on Russia’s economy and budget.

Oil prices in early 2021 have so far been above those included in the Russian state budget. Approved late last year, the budget includes Urals oil prices of $46.3/b in 2021, $46.6/b in 2022, and $47.5/b in 2023.

Furthermore, Russia is pushing to reduce the state budget’s reliance on oil and gas revenues, which has for decades left Russian oil producers exposed to significant changes in the tax regime during times of economic turbulence.

Russia President Vladimir Putin said last year that hydrocarbons revenues will account for one third of all budget revenues in 2021, down from half in 2011.

In a positive demand scenario these factors are likely to underpin a bid to secure further production increases later in 2021. If the group faces a more negative scenario, requiring further cuts, Russia is likely to seek smaller cuts for shorter durations.

A lot is also likely to depend on US shale production volumes. The risk of losing market share to US producers has long been raised by Russian oil producers as a reason to be cautious in committing to significant crude output cuts.

Despite economic differences, and the likelihood of further disputes this year, analysts expect Russia to remain part of OPEC+, which President Vladimir Putin continues to support, and has become a key part of Russia’s foreign strategy.
Asia’s energy hub looks to the future

Singapore has a long history as a center for oil trading, refining and storage, but now must now reimagine itself to keep step with global decarbonization. Eric Yep looks at the city-state’s history and path forward

Singapore was at the forefront of oil’s emergence in Asia more than a century ago and has grown to become a global giant in petroleum trade, but now the city-state is tasked with finding a new pathway as the clean energy transition accelerates worldwide.

Shell, which started out as M. Samuel & Co. and built the first fuel depot in Singapore in the 1890s, said in November it was shutting half of its refining capacity on Singapore’s Pulau Bukom island, a move signaling the end of one era and the beginning of another for the energy hub.

Shell said Pulau Bukom will become one of its six energy and chemicals parks and part of a “pivot from a crude-oil, fuels-based product slate towards new low-carbon value chains.”

Repurposing the facility will involve significant changes in refinery configuration, increased investment, and studies of products resilient to the energy transition, such as biofuels, specialties like bitumen, alternative feedstocks and renewable raw materials such as recycled chemicals, Shell said.

Transition experience

But Singapore is no stranger to energy transition. In 1892, the SS Murex, the world’s first bulk-oil tanker to pass through the Suez Canal, delivered 3,000 tons of kerosene to Pulau Bukom, cutting transportation costs and allowing M Samuel & Co. to slash the price of kerosene by nearly half.

With the move, the firm broke the dominance of Rockefeller’s Standard Oil, the company that controlled much of the global kerosene trade at the time.

In 1961, Shell built Singapore’s first refinery on Pulau Bukom, beating rival Japanese trading company Maruzen Toyo, paving the way for the emergence of Singapore as the “Houston of the East.”

Singapore’s initial role as a key port came about when sailing ships were replaced by coal-powered steamships that needed a place to bunker and trade.
Then when coal-fired ships switched to oil in the early 1900s, led by Winston Churchill's decision to move the British Navy to a more energy-efficient fuel, Singapore's oil blending and storage facilities were key to the transition.

Singapore, with regional outlets of companies like Asiatic Petroleum, an early joint venture between Shell and the Netherlands' Royal Dutch, went on to become a strategic fuel supply base for warships in World War I, World War II and later conflicts.

Over the years, Singapore's oil refiners, which included ExxonMobil, BP and Petrochina, have processed everything from US shale to crudes produced in China, Australia, Malaysia, the North Sea, West Africa and South America.

A new course

The challenge now for Singapore is much bigger than just decarbonization, because of the sheer size of the city-state's economy linked to fossil fuels. Singapore has one of the world's largest refining and petrochemical complexes, the world's largest bunkering port, Asia's largest oil trading hub and two of the world's largest rig builders. It needs a longer-term plan that taps its unique position at the crossroads of global trade.

So far, Singapore has set out a plan to phase out internal combustion engines by 2040, manufacture electric vehicles, import electricity from Southeast Asia and expand regional power trading. And the city-state's Carbon Pricing Act came into effect in 2019, introducing a carbon tax to help reduce greenhouse gas emissions.

It has established Pavilion Energy, a Temasek-owned gas company, to help build an LNG trading hub and two of the world's largest rig builders. It needs a longer-term plan that taps its unique position at the crossroads of global trade.

And energy conglomerates are pitching in. Speaking at the Singapore International Energy Week last October, Aw Kah Peng, chairman of Shell Companies Association of Singapore, noted Shell had been a “very big part of how the Singapore energy system and chemical industry has developed over the decades,” and moving forward the company sees both a “huge challenge as well as a huge opportunity, given the hub role that Singapore has.”

She said some of Shell's initiatives include the digitalization of Pulau Bukom, which houses its biggest fully owned refinery, putting electric vehicle chargers in retail stations, and working with the environment regulator on a plan to recycle 1 million mt of plastic waste by 2025, equal to all the plastic waste that Singapore generates.

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Aw said it was important to scale up these new energy businesses because they must be economically competitive and viable, and not just at a pilot level.

Over the decades, Singapore was able to combine the heft of a physical trading hub like Houston or Rotterdam, and a financial hub like New York or London, and that kind of synergy will be key in energy transition. Such a move is already seen in the LNG space, with trading activity concentrated in the city-state.

Pavilion Energy, which imports LNG and operates a fleet of LNG carrier vessels, today is a financial trader for LNG hedging, portfolio optimization and risk management, Fredric H. Barnaud, group chief executive officer, said at Singapore International Energy Week.

The company’s recent LNG tender that required companies to detail the carbon footprint of the gas supplied was the first of its kind. Barnaud said such initiatives will help promote Singapore as a reference hub for carbon pricing and carbon trading, with carbon-neutral LNG cargoes already being traded.

Jimmy Kho, CEO of power utility SP PowerGrid, outlined at the event how electricity providers are bracing the grid for the complete electrification of road transport.

“Without the power grid, especially in countries or cities like Singapore, where reliability is a big piece of the consumption of electricity, the low-carbon future cannot be properly enabled,” he said, pointing out that each EV equals the same power demand as a single household.

“So, imagine 650,000 vehicles all turning into electric vehicles by 2040; we're talking about large numbers,” Kho said.

From one of Asia's first oil storage hubs to the first Southeast Asian country to implement a carbon tax, Singapore has seen its share of changes to the global energy complex. While the city-state's exact pathway in traversing the clean energy transition is uncertain, there may be no better place to lead the way.

Singapore’s initial role as a key port came about when sailing ships were replaced by coal-powered steamships that needed a place to bunker and trade.
As the pressure on commodity producers around environmental, social and governance issues continues to rise, the lithium sector is recognizing that playing a key role in the energy transition is not enough to escape scrutiny.

The path to net-zero emissions undeniably includes lithium, an essential raw material for the lithium-ion batteries that power electric vehicles and energy storage applications. However, despite serving a positive environmental outcome, lithium production also has sufficient carbon footprint to have already raised red flags among automakers.

Mercedes-Benz, for example, last November announced it would only source battery cells containing lithium and cobalt, another important battery metal, certified by the Initiative for Responsible Mining Assurance (IRMA). Other automakers have also expressed concerns about responsible sourcing and could enforce measures of this kind in the future.

Lithium producers are heeding the message. “The automakers have been increasingly revising the environmental practices of their suppliers in a very strict way. Reducing emissions in lithium output is not only the right thing to do, but also a primary condition to be successful with an automaker,” said US-based Livent’s CFO, Gilberto Antoniazzi, during the Panorama Minero virtual lithium conference late last year.

“Investors also pressure a lot in this direction,” concurred Hersen Porta, Australia-based Orocobre’s COO at the same event, hosted from Argentina. “We have to understand that we are in [local communities’] home[s] in the first place” when operating lithium projects, he added.

Lithium is currently produced in two main ways: hard-rock mining, a method mostly concentrated in Australia, but also present in some other countries; and the evaporation of brines, seen predominantly in Chile and Argentina, but also in China.

Hard rock vs. brine

Amid the current oversupply scenario, which slashed lithium prices in half in the last 24 months, producers have been urgently trying to differentiate themselves from competitors by raising their “green” profile.

Chile-based major producer SQM, for example, recently announced it has an ongoing certification process with the Initiative for Responsible Mining Assurance. The company will reduce brine use by 50% by 2030 and water use by 65% by 2040. It aims to become carbon neutral by 2040.

Green growth

As demand for lithium rises, can the industry increase supply while also decarbonizing? By Henrique Ribeiro
Owners of hard rock assets criticize water use in brine operations, and brine-based players counter that mining causes more CO2 emissions and is more energy intensive.

Rivalry has developed around the claimed environmental impact of different production processes. Owners of hard rock assets criticize water use in brine operations, and brine-based players counter that mining causes more CO2 emissions and is more energy intensive.

According to Joe Lowry, president of consulting company Global Lithium LLC, the discussion makes no sense. He emphasized each operation has its own singularities. “You have to look at each case separately, we should compare a specific brine project with another specific hard rock project and so on,” he added.

In the case of juniors, which have been struggling to get financed due to the depressed pricing outlook – and which don’t have environmental data to report since they are still not running – proving they are ecofriendly is even more crucial.

During the Panorama Minero conference, Canada-based Lithium Americas’ Executive VP Ignacio Celorrio emphasized that the Cauchari-Olaroz brine-based project in Argentina should rely heavily on renewable energy. “This is a priority for us due to the very particular place where the project is located,” he said.

The 40,000 metric tons/year of lithium carbonate project is in the Jujuy province, over 1,000 meters above sea level.

At the same conference, Australia-based Millenial Lithium’s COO Iain Scarr said its Pastos Grandes project in the province of Salta will use 35% solar energy and 65% natural gas. Another Australian junior, Lake Resources, plans to advance its Kachi project in Argentina using a technology called direct lithium extraction (DLE), in partnership with technology provider Lilac Solutions.

DLE has spurred euphoria in the lithium industry recently due to its potential to significantly reduce the environmental impact of brine-based lithium production, at the same time as increasing lithium recovery.

There is no standard DLE mechanism. Although the process varies according to the employed technology, in general the idea consists of replacing the conventional evaporating ponds with a chemical facility capable of separating lithium from other elements through reagents. The resulting product then can be processed and offered in the marketplace in different chemical compositions.

Enthusiasts of DLE stress that, while in the brine-based process several months of evaporation are needed to yield anything that can be transformed into a marketable product, with DLE a final product could be achieved in a matter of days. Moreover, use of both water and land should be much smaller than the conventional process.

However, “[DLE] is not technically functioning anywhere in the world at the moment,” said the managing director of Australia-based Galan Lithium, Juan Pablo Vargas.

Although some say Livent has been employing DLE for decades in Argentina at Salar de Hombre Muerto, “they have a hybrid solution – it’s their proprietary technology, but it’s a black box, and we don’t want to be the first to try it,” he added.

And despite “interesting advances in several DLE technologies with excellent results [...] it is still necessary to improve water consumption further,” said LSC Lithium’s COO, Carlos Galli, who believes there are other technologies that must be improved to provide sustainable alternatives to brine-based lithium production.

There is no standard for DLE at the moment, but perhaps more pertinently, the lithium industry’s environmental, social and governance benchmarking is possibly even more opaque, despite the increasing requirements from outside the sector. “What’s the standard? There are a few companies saying what is ok and what is not, but this is not present in lithium yet,” Global Lithium’s Lowry said.

But he added: “It’s a better world with electrification, even if mining doesn’t improve – it’s a journey on step one or two only. I see this as the third industrial revolution in very early days.”

Imminent shortage

Despite the current efforts aiming to establish the cleanest, most ethical lithium supply possible, the imminent shortage of the battery ingredient might incentivize the industry to add capacity at any ESG cost.

Demand is expected to reach 800,000-1 million mt of lithium carbonate equivalent (LCE) in 2025 according to different analysts and producers. This around three times the total estimated demand of approximately 300,000 mt in 2019, which was expected to be maintained in 2020.
Supply, however, is unlikely to grow by the same proportion. StoneX senior metals analyst Natalie Scott-Gray said during LME Week last October that the COVID-19 pandemic caused the delay of 250,000 mt worth of new LCE capacity meant to come online in the next few years.

In addition to the pandemic, the recent pricing outlook has not helped. “Given that spot prices for most battery metals [including lithium] are currently in the doldrums, and miners typically require higher prices to incentivize new supply, relying on the natural cycle of mine development would appear to be a losing strategy,” said Wood Mackenzie research director Gavin Montgomery.

The consultancy issued a report in September 2020 forecasting that up to 800,000 mt of additional lithium supply will be needed in the next five years.

Out to 2025, it is estimated that only 418,000 mt of planned new production is not pending financing: the owners are Albemarle (+90,000 mt/y by late 2021, and another 50,000 mt/y, date to be defined), Ganfeng (+80,000 mt/y), Lithium Americas (+40,000 mt/y by early 2022), SQM (+110,000 mt/y by 2023) and Tianqi (+48,000 mt by 2023).

On top of this, the qualification period with customers – testing and sampling to meet their specifications – takes almost one year, and reaching the required battery quality is always a challenge, especially in the early stages of a new project. According to Roskill, the battery sector accounted for 54% of lithium demand in 2019, but this will rise to roughly 70% in 2020, meaning that the quality bottleneck will become increasingly crucial.

2021: a tipping point for pricing?

Despite the huge shortage of battery-grade lithium expected to build up in the coming years, the market was oversupplied until very recently.

Following a flood of additional hard-rock supply from Australia between 2018 and early 2019, lithium prices have been moving down sharply for the last two-and-a-half years, falling below the cost of production in 2020. Some supply was cut to deal with the pandemic.

and the bleak pricing outlook, but demand exceeded expectations in the second half of 2020.

Although analysts believe there is still some inventory left, market participants have been reporting that tightness is increasing week after week. “Main producers are sold out, and refusing to decrease prices,” said a consumer source who is bullish on lithium prices for 2021.

In the Chinese domestic market, which led the downtrend during the 2018-2020 bear run, lithium carbonate DDP China assessment reached its lowest level of Yuan 40,000/mt on July 30, where it held until the end of August, when it started to recover. On December 31, the price reached Yuan 54,000/mt.

Seaborne prices still didn’t react to the same extent, as many consumers are tied to long-term contracts. When a shortage arises, however, they are also likely to rebound strongly, market participants said. As in many sectors, the interaction of price and ESG considerations will be a key dynamic to watch through 2021 and beyond. ■
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