

EI NEW ENERGY

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Shell Steps Up Emissions Target, But Draws the Line

Royal Dutch Shell raised its carbon emissions goals last week, joining the ranks of European majors aiming to become a “net-zero” producer in terms of Scope 1 and 2 emissions from operations by 2050, as well as its indirect Scope 3 emissions, mainly from the use of products sold. The latter would involve a 65% reduction in the carbon intensity of products sold, compared with a previous target of 50%, combined with partnerships between Shell and its customers for the remaining 35%. This is yet another definition of what net zero means, making comparisons difficult, and the real proof will come in the strategies oil companies adopt to deliver on these promises (p4).

Explaining the Shell move during an online responsible investment briefing, Shell CEO Ben van Beurden noted that expectations “have shifted quickly in the debate around climate change,” and the company now needs to go further with its own ambitions. “Society, and our customers, expect nothing less,” he said. Shell’s move is the outcome of engagement with investors as part of Climate Action 100+, an investor initiative to ensure the world’s largest corporate greenhouse gas emitters take necessary action on climate change, and was described as a “significant commitment,” by Fiona Reynolds, a member of the Climate Action 100+ Steering Committee and CEO of the UN’s Principles for Responsible Investment. But some shareholder activists are less convinced, such as Follow This, which says that while Shell has “made another step” toward aligning with the goals of the Paris Agreement, “unfortunately, this new ambition is not a target and is not Paris-aligned yet.” It notes that relative emissions reductions of 65% by 2050 and a projected growth of 40% in energy demand in Shell’s Sky scenario would ultimately result in absolute emissions reductions of just 50%.

Shell has however sought to deflect such criticism, emphasizing that it will move toward being a “net-zero” producer. It argues that this can be effectively achieved by working in partnership with its customers. “Net-zero emissions doesn’t mean that we will only sell net-zero products, but it does mean that whatever product we sell that still has carbon in it will ultimately be mitigated, either because a customer will do it, or because we will do it on their behalf,” said Van Beurden. It seems Shell plans to go even further, with Van Beurden suggesting they would no longer do business with companies not doing their part: “All Shell and the customers that we serve will be net zero,” he said. “Every business we engage with will need to be net zero, by the customers or by Shell on their behalf ... Those are the only businesses we’ll be engaged in.” As to how Shell will follow customers’ commitment to become net zero, Van Beurden said “we need to have a lot of progress by 2035” toward a sectoral approach. “We need a mechanism to measure progress by sector” to see how Shell has progressed and which customers have “pivoted” or not.

Shell plans to partly achieve this by selling more products with a lower-carbon intensity, like renewable power, biofuels and hydrogen, as well as using carbon capture and storage technology — but “net-zero emissions doesn’t mean that we will only sell net-zero products,” the Shell CEO explained. “It does mean that whatever prod-

RENEWABLE ENERGY PRICE PARITY

	Gas (\$/MMBtu)	CO ₂ (\$/ton)
Europe		
Market Price	1.72	21.46
Wind Onshore	5.90	97.52
Solar PV	0.52	0.00
US		
Market Price	1.82	0.00
Wind Onshore	3.83	36.53
Solar PV	0.63	0.00
Japan		
Market Price	2.10	0.00
Wind Onshore	18.63	300.71
Solar PV	6.17	73.47

Market prices Apr 21. Table indicates either gas or CO₂ price needed for new renewable energy to match profitability of new gas-fired power, without subsidies. High US carbon prices reflect low gas prices. Japan at parity so no carbon price needed. Source: Energy Intelligence

uct we sell that still has carbon in it will ultimately be mitigated, either because a customer will do it, or because we will do it on their behalf.” Like other majors looking to mitigate emissions, Shell is likely to lean heavily on carbon offsetting with nature-based solutions, such as reforestation. Indeed Shell already offers offsets to some customers, like utilities buying gas and airlines purchasing jet fuel, and retail customers in the UK and Netherlands. This could be “increasingly expanding across the line of products that we offer to customers,” Van Beurden noted.

Ronan Kavanagh, London, and Philippe Roos, Strasbourg

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ESG

Real Results Demanded Next From Big Oil

Even as Covid-19 wreaks havoc, environmental, social and governance (ESG) priorities will continue rising in importance for the oil and gas industry, with demands quickly shifting toward deliverable results. Climate concerns may have temporarily fallen in urgency due to the pandemic but will regain — and likely rise — in priority beyond the near term. And investor pressures will only grow too, forcing companies across the spectrum to take further concrete action in the near term, according to an ESG Climate Risk Benchmark by Energy Intelligence’s Research & Advisory unit (NE Nov.14’19). “Oil and gas firms’ consistent underperformance on global equity indexes reinforces the pressure to ensure their resilience in the face of climate-related risk,” says report co-author Alex Martinos. At the same time, “the current collapse in share prices reinforces both existing concerns over lagging performance and future worries about energy transition risks,” he added.

Major oil and gas companies are beginning to come to grips with the challenge, led by European majors seeking to address acute shareholder demands, according to the benchmarking report. It is based on an evaluation of 25 companies’ disclosures and performance in five categories: policy stance, governance and risk management, strategy and portfolio, emissions disclosure and targets, and carbon performance. Royal Dutch Shell, Equinor and Total top the list — but BP and Repsol have

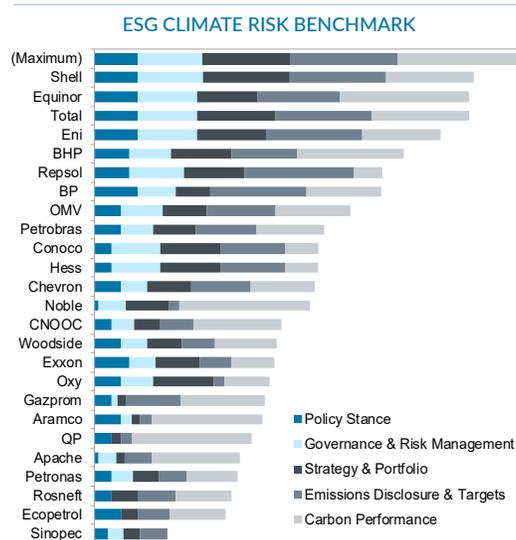
recently shown their intent to catch up. National oil companies (NOCs) are clustered at the bottom, a reflection of the differing priorities of their governments, while US companies score consistently below their European competitors, with key independents besting the US supermajors (see graph).

While the early push for more disclosure remains important, firms will in the future face growing demands to demonstrate improvements in performance on indicators ranging from governance to emissions. Company engagement across more routine ESG climate metrics — sometimes dismissed as “checkbox” assessments — have formed the core of investor climate pressures to date, the report says. The initial focus has centered on improved disclosure (centering on frameworks like those of the Task Force on Climate-related Financial Disclosures) and companies have shaped their responses accordingly. Judged on these measures alone, European oil and gas companies have shown the most comprehensive responses to investor concerns. These actions represent lower-hanging fruit, with companies facing less upheaval to make changes in governance, reporting and other internal processes, according to the report.

Yet investors are moving on, and firms will have to do so too, with the focus shifting to targeting and achieving measurable emissions reductions, the report notes. The spotlight, for leading European companies, has already fallen on more comprehensive and ambitious emissions targets, and in the future actual performance on emissions metrics will steadily

move to center stage. Recent activity has involved companies setting more ambitious emissions goals, encompassing product end-use. Responding to pressures, only European companies have set bolder long-term emissions targets covering product use. Repsol was the first to set a net-zero ambition for 2050, extending beyond its existing 2040 goal. BP followed, targeting net-zero emissions (covering its own production) and an added goal for all products it sells. With companies increasingly judged on their greenhouse gas (GHG) emissions, measures of operational and portfolio life-cycle intensity are critical. The Climate Risk Benchmark, part of the new Energy Transition Service, has built two carbon intensity

scores into its analysis: Operational GHG intensity, using upstream intensity — a widely reported metric that permits some comparison across all peer groups; and life-cycle GHG intensity metrics (covering Scopes 1, 2 and 3), which are in their infancy but will grow in importance, reflecting the evolution of portfolios away from oil toward lower-carbon (and negative emissions) alternatives.



Source: Energy Intelligence, Energy Transition Service

As to what comes next, report co-author TJ Conway said “we expect ‘net-zero’ ambitions will proliferate — especially among European majors — inviting greater scrutiny of plans to deliver emissions cuts.” Lagging US firms will face growing calls to meet minimum disclosure standards on governance, risk management and portfolio resilience, he added. “NOCs with low-cost portfolios may prove more resilient during the energy transition but we expect many traded NOCs to come under more pressure to disclose climate-related risks.”

Ronan Kavanagh, London

NEW TECHNOLOGY

Asia-Pacific Hydrogen Still Marching Ahead

Despite delays and uncertainties resulting from the coronavirus, Asia-Pacific countries eyeing a long-term hydrogen pathway are pressing on with funding and trials to ensure programs stay on schedule and costs keep tumbling toward competitive levels. Notably, in Australia — where ample sunshine and wind could potentially underpin renewable hydrogen production and exports — the federal government is now rolling out a funding program promised late last year to “fast track” large-scale hydrogen deployment in the hope of pushing costs down to under A\$2.00 (US\$1.25) per kilogram, from the range of roughly US\$2.50–\$3.50 at present as estimated by the International Renewable Energy Agency in a September 2019 report. Japan, which pioneered the hydrogen quest in the region, last month commenced operations at a demonstration plant for producing carbon-free hydrogen, although the postponement of the Tokyo 2020 Olympics that was to be powered by hydrogen has prevented global showcasing of the facility’s output (NE Mar.12’20). In China, where there is strong enthusiasm for promoting the use of hydrogen fuel-cell vehicles (FCVs) in heavy-duty transportation, Shandong province recently started up an FCV engine production line that it envisions as a precursor to the province making its mark as the world’s largest FCV engine manufacturing base.

Australia last week invited applications to an A\$70 million funding scheme for testing the technical and commercial viability of hydrogen production at a large scale using electrolysis, in which electricity is used to split water into hydrogen and oxygen. The funding is available to projects with electrolyzers of at least 5 megawatts in size, preferably 10 MW or bigger, and powered by renewable electricity. It is part of a A\$370 million package set aside for hydrogen development at end-2019, taking the country’s total commitments since 2015 to over A\$500 million for chasing its hydrogen dream. Already the world’s largest exporter of LNG, the country is eager to

replicate that success with hydrogen. “The government has set an economic goal for hydrogen at or under A\$2.00 (US\$1.25) per kilogram,” said Minister for Energy and Emissions Reduction Angus Taylor, adding: “That’s the point where hydrogen becomes competitive with alternatives in large-scale deployment across our energy systems.”

According to a Mar. 30 Bloomberg NEF analysis, green hydrogen produced from renewable energy at a delivered cost of around US\$2.00/kg (US\$15 per million Btu) in 2030, and falling further to US\$1.00/kg (US\$7.40/MMBtu) in 2050, is achievable in places like China, India and Western Europe. Costs could be 20%–25% lower in countries like Australia with top-notch renewable energy resources, the report said. On top of exporting, Australia’s National Hydrogen Strategy also envisages the blending of hydrogen into domestic gas networks (NE Oct.24’19). The Australian Gas Infrastructure Group — comprising owners and operators of gas transmission and distribution networks — sprung into action last month by inviting expressions of interest from international players to help it achieve a 10% renewable hydrogen ratio in the eastern and southern states of Australia. “We believe this objective is achievable by 2030,” said the industry group, which hopes to discuss further with selected parties in the second quarter.

In China, Shandong-based state-owned combustion engine producer Weichai commissioned an FCV engine manufacturing plant on Mar. 31. The new engine factory has a 20,000-unit annual production capacity, laying the foundation for Weichai’s ambitions of building up a world-class production base in the province. The first batch of engines to be produced are earmarked for public buses to be deployed under pilot projects in Shandong, where there are reportedly some 200 such buses already plying the roads. While better known for its diesel engines and heavy trucks, Weichai has been proactively planning for the energy transition, buying a near 20% stake in 2018 into Canadian fuel cell solutions provider Ballard to become its largest shareholder (NE May16’19). Weichai and Ballard are also building a fuel cell manufacturing plant in Shandong that is expected to come on line in the middle of 2020.

China is more frequently in the news for its endeavors in downstream hydrogen applications — particularly in transportation — but the country already has an upstream hydrogen presence. It is the world’s largest hydrogen producer with an annual output of around 25 million tons, although mostly through the carbon-intensive method of coal gasification. Efforts are being made to transition to green hydrogen production: In China’s Ningxia autonomous region, where solar resources are abundant, coal-focused Baofeng Energy last week started building a 1.4 billion yuan (\$198 million) solar-powered water electrolysis pilot project due for completion in end-2020.

Kimfeng Wong, Singapore

STRATEGY

Big Oil Carbon Targets: Hard Part Lies Ahead

European oil majors have offered intriguing glimpses into their various net carbon strategies in the energy transition (see graphic). Looking beyond the headline targets, how do they plan to achieve these objectives and who has the most credible plans? This is a natural question given that most, if not all, seemingly rely on uncertain solutions — vast deployment of carbon capture, utilization and storage (CCUS), reforestation and natural climate solutions and carbon sinks, and a full-fledged hydrogen economy (NE Mar.5'20). The big elephant in the room is how much Europe's top oil companies plan to rely on these great unknowns because, at this stage at least, none of them have given more than a cursory acknowledgement they intend to use them. "What seems clear is that European majors have had to do a lot of work, pushed every step of the way by investors, to come up with these net-zero, or near-net-zero, targets — but the real hard work on how to deliver them is only just starting," said Alex Martinos, manager at Energy Intelligence's Research & Advisory unit.

BP has an ambition of net-zero emissions from its own production by 2050, alongside a goal of a 50% cut in emissions from use of all products sold by 2050. Out of all the majors it has given the vaguest details on how it will achieve these targets, beyond stating it will "pursue opportunities in decarbonization and new value chains such as hydrogen and CCUS." BP also aims to rely on "greenhouse gas sinks, removals or reductions, including land carbon projects." To be sure, when new CEO Bernard Looney announced the new 2050 targets in February, Looney took some flack for not providing more details or hard numbers, but said there would be an update at the planned investor day in September, adding it could take years to shape a firm action plan (NE Feb.13'20).

Eni is targeting a 55% cut in emissions intensity from use of all products sold by 2050. Eni aims to increase upstream output until 2025 and then decline production, mainly focused on oil, so by 2050 some 85% of production will be gas. To help offset gas production, Eni plans primary and secondary forest conservation

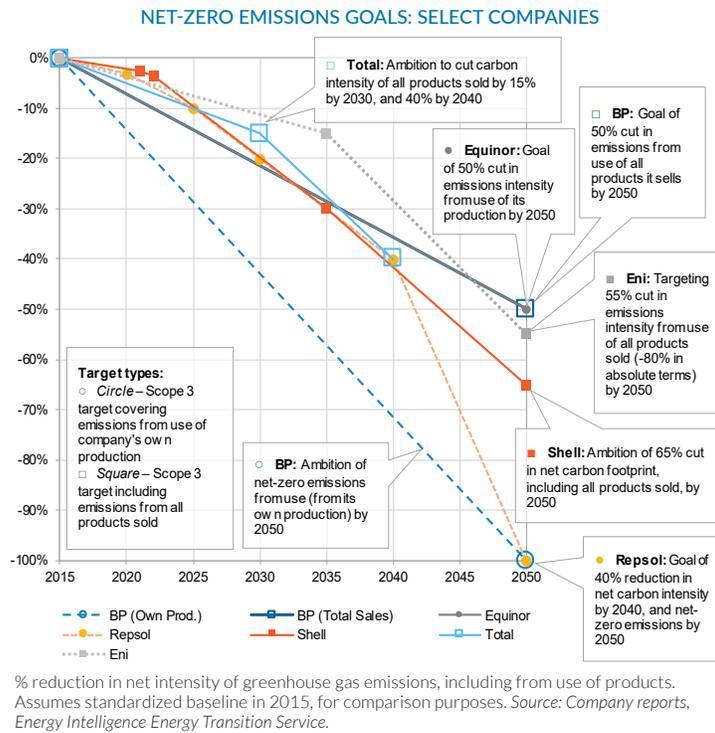
projects to offset carbon dioxide emissions exceeding 30 million tons per year by 2050 and projects to capture CO₂ of over 10 million tons/yr by 2050. Electricity production from gas combined with carbon capture and storage (CCS) will "complement renewables power supply" of which it aims to have 55 gigawatts operational by 2050, mainly in OECD countries. But those CCS projects, if anywhere near 10 million tons a year, would be roughly one-tenth of everything that has been built in terms of CCS and CCUS capacity in the last decade — which at end-2019 stood at a collective 97 million tons/yr capacity, according to figures from the Global CCS Institute.

Equinor has a goal of a 50% cut in emissions intensity from use of its production by 2050 and plans to grow renewable energy capacity tenfold by 2026, developing as a global offshore wind major. Like everyone else, Equinor talks of CCUS and hydrogen as being "important" while "recognized offset mechanisms and natural sinks may be used as a supplement." By 2026, Equinor expects to have up to 6 GW in operational renewable capacity, roughly 10 times higher than now and could have 16 GW in service by 2035 if it can find enough "attractive project opportunities." Equinor said it may dip

into the ETS or other "high-quality offset mechanisms" to achieve carbon neutrality for its own operations by 2030.

Last December, Spain's Repsol set a goal of a 40% reduction in net carbon intensity by 2040 against a 2016 baseline and a net-zero Scope 3 emissions goal for 2050. Repsol plans to run down its oil and gas business while increasing renewable capacity to 7.5 GW by 2025 and boost biofuels output, alongside producing more chemicals with a low-carbon footprint. More green details could be given during a first-quarter earnings call on May 5. Repsol says it is "possible to achieve at least 70% of this [2050 net-zero] target with the technology that can currently be foreseen" and will also be pushing CCUS and, if necessary, additionally offset emissions through reforestation and other natural climate sinks. Under the International Energy Agency's Sustainable Development Scenario, global CCS and CCUS capacity needs to hit 1,500 million tons of CO₂ per year by 2040.

Royal Dutch Shell has an ambition of a 65% cut in its net carbon footprint, including all products sold, by 2050 (p1). Shell says it cannot become a net-zero business because people will continue to buy fossil fuel products from Shell by 2050, stipulating it has



“no immediate plans to move to a net-zero emissions portfolio over our investment horizon of 10–20 years.” Shell talks of the need for CCUS, offsets such as reforestation and advanced biofuels and hydrogen for the aviation sector (NE Apr.9’20).

Total has an ambition to cut the carbon intensity of all products sold by 15% by 2030 and 40% by 2040. It set a goal in March this year to reach sustainable carbon storage capacity of 5 million tons/yr by 2030, backed by a \$100 million dedicated fund. Total has dedicated 10% of its research budget to CCUS technologies and is developing CCUS projects in Norway and the UK, plus has CCUS research partnerships in France, Germany and the US.

Skepticism remains strong around the environmental benefits of offsets — particularly forestry credits. Chris Lang, founder of anti-offset website Redd Monitor, told Energy Intelligence that “the oil companies are talking about offsetting huge volumes of fossil fuel emissions. But they are not telling us how much they anticipate this will cost, or how they intend to plant vast areas with trees, or protect vast areas of forests.” He argues that offset schemes centered around forestry have been running for two decades without managing to reduce the world’s deforestation.

Jay Eden, London

low at present because the time horizon over which it is expected to have a material impact is outside the typical “rating horizon” of approximately three to five years. But “as we move forward, and as potentially events accelerate, then it could come into the horizon of our ratings,” Archbold warned (NE Mar.19’20). Carbon pricing and regulation are already having impacts on sectors such as cement, steel and auto manufacturing, he added. “We’re at a stage today where we don’t necessarily see a significant impact from changing regulation, but we can very much see the direction of travel.”

“There’s certainly been among our main client base of investors a surging interest in ESG, but it’s not just investors, we’ve also received questions from regulators,” Archbold noted. The “lack of comparability” is a “common complaint” about ESG, “but there is likely to be consolidation over time,” he said (NE Nov.14’19). “We’ve seen lots of situations and industries over time where there’s a proliferation of competitors, and eventually there’s a consolidation and a standard. We just haven’t reached that point for ESG.”

The European automotive sector is “a good example where companies are already having to adapt, although we’re not necessarily seeing that it’s harming their credit profiles,” Archbold said. As per EU rules, carmakers will be fined €95 (\$105) per gram of carbon dioxide per kilometer driven for each car emitting above the emissions target, starting in 2020 for 95% of new car sales (NE Apr.18’19). If no progress was made over 2018–21, the overall sector would face theoretical total penalties of more than €30 billion, Fitch found in a recent report. New products will lower fines but those could remain substantial for some companies, while the “drastic adjustment” of line-ups in favor of less-emitting cars, in particular away from sport-utility vehicles,

will weigh on profitability, according to the report.

Following the Covid-19 crisis, the European auto industry is calling for “some adjustment” in the timing of the rules, but also insists that “it is not [its] intention to question the laws as such nor the underlying objectives of road safety, climate change mitigation and protection of the environment” (NE Apr.9’20).

Fitch launched its “ESG relevance scores” for corporates in January 2019, and

ESG

Fitch Sees ‘Surging Interest’ In ESG

Environmental, social and governance (ESG) factors are not just for equity investors but also, increasingly, fixed income investors (NE Dec.19’19). In sharp contrast with just two years ago, “we are now discussing ESG considerations in pretty much every meeting we’re having with investors, particularly in Europe,” Peter Archbold from Fitch Ratings’ sustainable finance team told Energy Intelligence. A key ESG factor for oil companies is climate risk, but its impact on credit ratings remains

FITCH RATINGS’ ESG RELEVANCE SCORES

ESG Considerations	Production	Oil and Gas			Utilities		Carmakers
		Oil-Field Services	Refining and Marketing	Pipeline and Midstream	Europe	US	
Environment							
Emissions and air quality	N	L	N	N	H	N	H
Energy management	N	L	N	N	H	N	L
Water and wastewater management	N	N	N	L	L	L	L
Waste and hazardous materials management	N	N	H	N	N	N	N
Exposure to environmental impacts	N	N	H	N	N	N	L
Social							
Human rights, community relations	N	N	H	N	N	N	L
Customer welfare, privacy and data security	L	L	L	L	N	N	N
Labor relations	N	N	N	L	N	N	N
Employee wellbeing	L	L	L	L	L	L	L
Exposure to social impacts	N	N	N	H	N	N	N
Governance							
Management strategy	N	N	N	N	N	N	N
Governance structure	N	H	H	N	N	N	H
Group structure	N	N	H	H	N	N	H
Financial transparency	N	N	N	N	N	N	N

Fitch’s ESG relevance scores in select industrial sectors. “H” means the ESG issue is credit rating-relevant for at least 10% of companies in the sector, “N” means it is minimally relevant for at least 10% of companies, “L” means it is irrelevant for over 90% of companies. Source: Fitch Ratings

has since started to expand them to all debt issuers, including financial institutions, infrastructure and public finance. “We have always factored ESG considerations into our credit ratings where they’re relevant and material, so it’s not that we have suddenly decided to look at ESG,” Archbold said. “The way to look at it is we’re extracting these ESG scores from the rating work we already do, and we’re publishing where E, S and G considerations are having an impact on the rating.” ESG credit risks are identified at sector level and then scored for individual entities within that sector along a 1 to 5 scale: from those currently irrelevant to both the entity and sector (1), to those relevant to the entity but only have a rating impact in combination with other factors (4), to those that “by themselves are having an impact on the credit rating” (5).

The analysis of some 1,700 rated companies in Fitch’s portfolio generated over 22,000 individual E, S or G scores. It shows that 23% of ratings are being influenced by at least one ESG factor, with one or more scores of 4 or 5. Sectors with already more than 10% of issuers with 4 or 5 scores include oil refining and marketing on waste and environmental impact issues, pipelines and energy midstream on social issues, and the auto industry on emissions and air quality issues, Fitch found. And while “a widespread credit impact has yet to be seen,” growing ESG considerations in bank lending have affected some corporate borrowers’ ability to obtain financing, the rating agency also found.

In some “extreme and exceptional” cases, “such decisions are even driving credit rating actions.” US oil and gas exploration and production, together with Australian coal export terminals and private prison operators, are among sectors where negative investor sentiment due to ESG considerations — in combination with other factors — has added to refinancing risks, Fitch believes (NE Jan.16’20).

Philippe Roos, Strasbourg

POLICY

US Wind, Solar Face Headwinds from Ruling

As the US clean energy sector confronts economic fallout from the coronavirus pandemic, federal regulators are forging ahead with a power markets plan that threatens state renewable goals. State governments have emerged as a major driver of renewable growth, with more enacting policies that require higher renewable energy purchases to meet climate objectives. Now, those programs, which include zero-emission credits and renewable portfolio standards mandating rising shares of renewables, may be in jeopardy even as wind and solar companies face down thousands of job losses due to project delays and financing hur-

dles. A recent Center for American Progress report found that barring congressional intervention, the pandemic could lead to job losses as high as 50% in some renewable subsectors. And while the US Energy Information Administration has retained its expectation that renewables will still be the fastest-growing generation source in 2020, there’s little question that growth is slowed down dramatically due to the pandemic and related economic downturn. The EIA has predicted that 19.4 gigawatts of new wind capacity and 12.6 GW of utility-scale solar capacity will come on line in 2020, roughly 5% and 10% lower than its pre-Covid-19 forecasts.

Potentially nipping further at that growth is a US Federal Energy Regulatory Commission (FERC) decision last week advancing a plan directing one of the largest regional transmission organizations in the country — the PJM Interconnection — to compel wind and solar providers that benefit from state clean energy programs to raise market bids. Essentially, this would make market entry more difficult for clean energy projects and give a competitive edge to gas generation (NE Jan.2’20). The commission during its Apr. 16 meeting voted 2-1 to reject numerous bids from wind and solar interests and others to reconsider the decision. A slew of renewables groups, including the American Council on Renewable Energy, the American Wind Energy Association and the Solar Energy Industries Association, had argued that the rule unlawfully impinged on state autonomy over their electricity generation profiles. FERC Democratic Commissioner Richard Glick vigorously dissented on the commission’s ruling not to reconsider, calling arguments “stunningly awful” and saying they unfairly target clean energy programs. Some fear the FERC ruling might impede state carbon reduction goals, such as New York’s goal of 100% zero-emissions electricity by 2040 and Nevada’s decision to ramp up its renewable portfolio standard to 50% by 2030 (NE May23’19).

In a modest win for renewables, however, FERC Chairman Neil Chatterjee said that two powerful policy drivers — voluntary renewable energy certificate programs and the Regional Greenhouse Gas Initiative cap-and-trade program in the US Northeast — are excluded from the price floor rule (NE Aug.31’17). But the commission’s decision to move forward stands to impact other state clean energy programs across PJM’s 13-state region in the Mid-Atlantic and Midwest and could cause several states to leave the operator altogether. The ruling has already been challenged in court, with the Natural Resources Defense Council filing litigation this week. The environmental group charges that the ruling would cost PJM regional consumers billions more in electricity costs, and that it “overrides the choices of voters and threatens to corrupt our power grid into a tool for subsidizing fossil fuel plants.” The FERC decision also comes as the commission is being asked to weigh in on state, regional or federal carbon pricing in wholesale energy markets, which renewable players are seeking but which Chatterjee has so far declined to comment on.

Bridget DiCosmo, Washington

NEWS ROUNDUP

China Draft Lacks Punch

Beijing has released the second draft of a proposed new energy law for public comment, more than a decade after the first draft was released in December 2007. The central government still has no timetable for completing work on the new energy law, central government sources tell Energy Intelligence. The draft law has a section on nonfossil fuels that calls for prioritizing renewable energy development and the setting of mid- to long-term goals that local and provincial governments should abide by, but there were no specifics or provisions for enforcement. “The energy law is designed to provide some guidance on principles, not detailed measures,” said a central government energy analyst who worked on the new draft. Chinese industry insiders also say the proposed energy law is too vague and lacks legally binding power.

Tesla Aussie Battery Expands

The giant Tesla energy storage battery in South Australia state is close to being able to supply an extra 50% of capacity to the grid, according to its owner, French renewable energy firm Neoen, which last year received government funding for the upgrading project. Network connection work on the expanded facility — billed as the world’s largest with a 100 MW (129 MWh) capacity at the time of installation in end-2017 — have been completed, so it would “soon” be in position to provide “extra reliability” to the grid, said Neoen’s Australia Managing Director Louis de Sambucy. Since the battery’s installation, it has been credited with helping lower electricity prices and preventing blackouts and power shortages, thus saving consumers millions of dollars (NE Nov.21’19).

Repsol Breaks Ground on Solar

Spanish oil major Repsol this week started construction on its first solar farm in Spain, a €100 million (\$107 million) project with 126 MW of capac-

ity in the municipality of Manzanares. The scheme known as Kappa consists of three independent plants and should be operational at the beginning of 2021. Repsol has a total of seven wind and solar projects under construction in the Iberian Peninsula, totaling some €600 million in investment costs. Last December, Repsol set a goal of a 40% reduction in net carbon intensity by 2040 against a 2016 baseline and a net-zero Scope 3 emissions goal for 2050. Repsol plans to phase down its oil and gas business while increasing renewable capacity to 7.5 GW by 2025, including floating offshore wind, and boost biofuels output, alongside producing more chemicals with a low-carbon footprint (NE Apr.16’20).

China Sedan Goes Electric

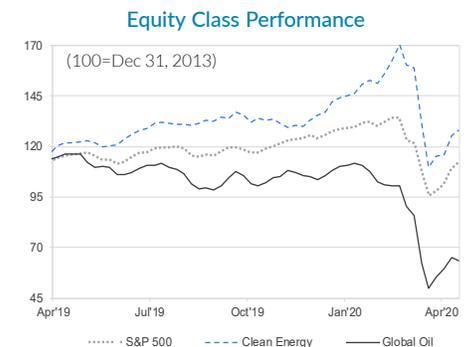
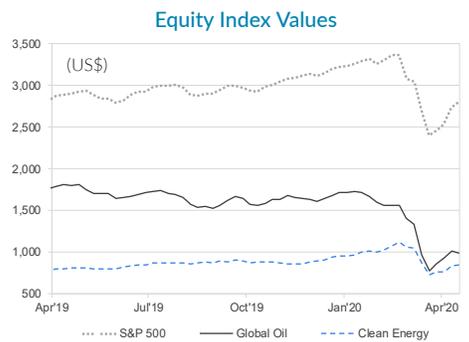
China’s leading automaker FAW plans to launch electric versions of its iconic Hongqi (Red Flag) sedan brand that used to be synonymous with limousines for ferrying top leaders at national parades, the official *China Daily* has reported. FAW has started constructing a 7.8 billion yuan (\$1.1 billion) new production line in Changchun city, the capital of Jilin province, that would manufacture 200,000 cars annually — including electric and smart vehicles — under the Hongqi brand name. The new plant is due for completion in 2022. At the brand’s conference held in January, Hongqi said it plans to launch 21 models in the next five years, including 18 EVs as well as models with autonomous driving capability (NE Apr.16’20).

Irena Sets Net-Zero Price Tag

Transforming the world’s energy economy from one where fossil fuels account for more than 80% of the mix to one which is carbon neutral could cost up to \$130 trillion between now and 2050, according to the first *Global Renewables Outlook* released by the International Renewable Energy

Agency. Yet Irena says “the socioeconomic gains of such an investment would be massive” and could total some \$98 trillion in cumulative global GDP by 2050, versus a business-as-usual scenario. Renewable energy sector jobs could almost quadruple to 42 million, plus there could be 21 million more jobs in the energy efficiency sector and 15 million more in system flexibility roles. Irena says the study “explores ways to cut global CO₂ emissions by at least 70% by 2050” as well as providing a “new perspective on deeper decarbonization efforts” needed to undertake a path toward zero emissions (NE Nov.21’19). Irena says “recovery measures following the Covid-19 pandemic could include flexible power grids, efficiency solutions, electric vehicle charging, energy storage, interconnected hydropower, green hydrogen and other technology investments consistent with long-term energy and climate sustainability.”

CLEAN ENERGY EQUITY MARKETS



Source: Standard & Poor’s

EI NEW ENERGY DATA

ENERGY FUTURES: REFERENCE PRICES

	Apr 21	Apr 14	Chg.
Carbon (€/ton)			
ECX EUA	19.77	20.52	-0.75
ECX CER	0.31	0.30	+0.01
Crude oil (\$/bbl)			
Nymex light, sweet	11.57	20.82	-9.25
ICE Brent	19.33	29.60	-10.27
Natural gas (\$/MMBtu)			
Nymex Henry Hub	1.82	1.63	+0.19
ICE UK NBP	1.74	1.96	-0.22
Coal (\$/ton)			
McCloskey CSX	37.25	37.50	-0.25
ICE Rotterdam	45.45	45.75	-0.30

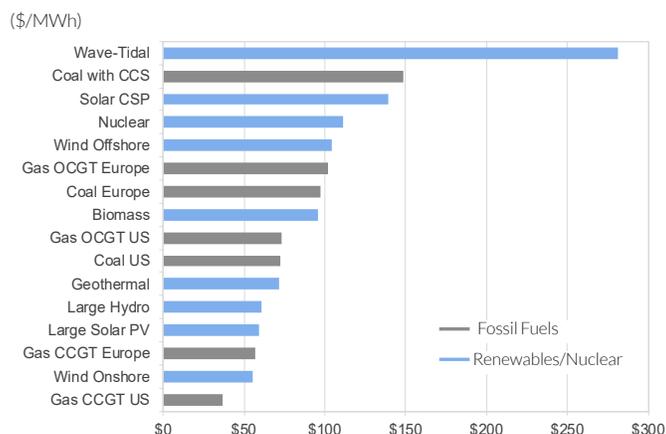
All prices are front month. EUA = EU Allowances; CER = Certified Emission Reductions under UN CDM. ICE UK gas converted from p/therm. *Short tons. Source: Exchanges

GLOBAL ELECTRICITY PRICES

	Apr 21	Apr 14	Chg.
Europe (\$/MWh)			
Germany (EEX)	-17.53	22.16	-39.69
France (Powernext)	9.51	15.87	-6.36
Scandinavia (Nordpool)	6.52	5.06	+1.46
UK (APX)	12.29	35.34	-23.05
Italy (GME)	30.06	21.77	+8.29
Spain (Omel)	10.83	18.25	-7.41
North America			
New England	19.00	16.00	+3.00
Texas (Ercot)	19.01	16.44	+2.56
US Mid-Atlantic (PJM West)	21.00	20.25	+0.75
US Southwest (Palo Verde)	10.00	15.00	-5.00
Canada (Ontario)	-0.04	2.06	-2.10
Other			
Australia (NSW)	24.72	26.35	-1.63
Brazil (SE-CW)	7.46	7.69	-0.22
India (IEX)	30.39	32.91	-2.52
Japan (JPEX)	44.83	48.13	-3.30
Russia (ATS)	14.42	16.44	-2.01
Singapore (USEP)	40.37	42.52	-2.16

Wholesale prices. Source: Exchanges

NEWBUILD POWER GENERATION COSTS



Source: Energy Intelligence

DATA: The complete set of EI New Energy data is available to web subscribers, including historical and forecasted levelized cost of energy (LCOE) calculations, EV sales, our Green Utilities rankings, fuel switching thresholds, electricity production by sector, ethanol and biodiesel fundamentals, carbon and energy prices, along with methodologies and reader's guides. The New Energy Data Service can be accessed [here](#).

LATEST INDICATORS: SALES AND FLEET PENETRATION OF EVS

CHINA	US
NEV sales penetration	EV sales penetration
Updated through Mar. 2020	Updated through Dec. 2019
NEV sales (Mar. 2020)	EV sales (monthly Dec '19)
63,196	29,872
% LDV sales NEVs	% car sales NEVs
4.42%	7.81%
	EV sales (annual)
	326,644
NEV fleet penetration	% LDV sales NEVs
Updated through end-2019	1.89%
NEV fleet	
3,810,000	EV fleet penetration
% fleet NEVs	Updated through end-2019
1.47%	EV fleet
	1,444,097
Europe	% LDV fleet NEVs
EV registration penetration	0.49%
Updated through Q4 2019	
EV registrations	
180,406	
% LDV sales NEVs	
5.01%	
EV fleet penetration	
Updated through Q4 2019	
EV fleet	
1,417,355	
% fleet NEVs	
0.50%	

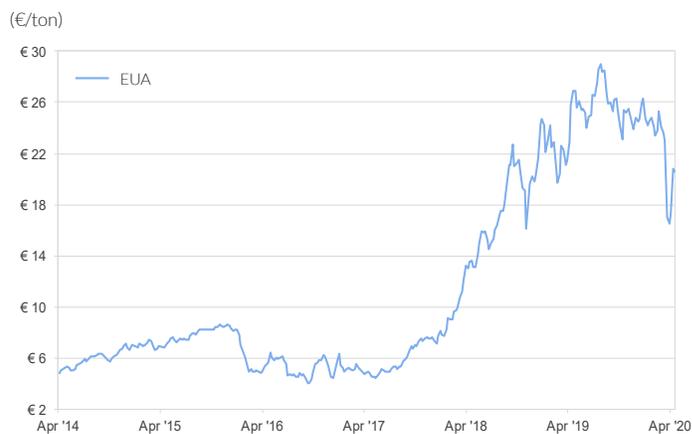
NEVs = New Energy Vehicles. EVs = plug-in hybrids and full battery-electrics. LDVs = light-duty vehicles including cars, SUVs, vans and light pick-ups. Sources for sales and fleet figures: China Association of Automobile Manufacturers, China Passenger Car Association, US Alliance for Automotive Innovation, US Energy Information Administration, European Automobile Manufacturers Association

GLOBAL CARBON PRICES

	Apr 21	Apr 14	Chg.
Europe (€/ton)			
EUA Dec '20	19.85	19.81	+0.04
US (\$/ton)			
CCA (Calif.) Dec '20	15.76	16.03	-0.27
RGGI (Northeast) Dec '20*	5.66	5.75	-0.09
New Zealand (NZ\$/ton)			
NZU (spot)	24.40	23.50	+0.90
Asia (\$/ton)	Apr 17	Apr 10	Chg.
China-Guangdong†	3.99	4.13	-0.13
South Korea	33.30	33.07	+0.23

Benchmark months. *Short tons; all others metric tons. Source: ICE, OMF

EU CARBON FUTURES PRICES



ECX front-month futures. Source: ICE