

EI NEW ENERGY™

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TRANSPORTATION

China Electric Vehicles Ride Unstoppable Momentum

Electric cars in China are not only holding their ground, but riding on apparently unstoppable momentum to reach new sales peaks. This happened despite a purchase tax reduction last month that benefited mostly oil-powered vehicles alongside supply chain issues and Covid-19 resurgences. Chinese consumers last month snapped up a record of nearly 600,000 electric vehicles (EVs), comprising all-electric, plug-in hybrid and hydrogen fuel-cell models. Cumulative half-year EV sales have hit 2.6 million units, on the back of a 115% year-on-year surge that defied the economic headwinds from lingering Covid-19 resurgences, according to latest data from the China Association of Automobile Manufacturers (Caam).

Such triple-digit growth rates have characterized the EV market for most of this year — contrasting with the mostly lackluster performance of oil-fueled automobiles. Improvements in quality, driving range and charging convenience have boosted public acceptance of EVs, which also benefited significantly from the current high oil prices, policy support from Beijing and local government subsidies.

The robust EV sales reflect “further consolidation” of the sector’s “transformation and upgrading process,” said Caam Monday in its monthly briefing. At this rate, China is likely to attain full-year EV sales of up to 5.5 million units in 2022, or 56% higher than the 2021 figure, predicted Caam’s deputy secretary-general, Chen Shihua.

10 Million Mark

Market penetration of EVs as a percentage of new automobile sales has already sailed past the government’s goal of 20% — doing so some three years ahead of the target timeline of 2025. Starting at around 17% at the beginning of 2021, year-to-date EV penetration breached the 20% mark at the end of April, and has risen further to a six-month average of 22% — advancing by a whopping 13 percentage points from the first half of 2021.

If only sales of passenger car models (no larger than nine-seaters) were counted, the EV penetration rate would have been even higher at 24% averaged over January-June, according to data from the China Passenger Car Association (CPCA). In the month of June alone, over 27% of all passenger cars sold were EVs. Total car ownership in China has sailed past the 400 million mark, from 395 million at the end of 2021, latest data from the traffic management bureau showed. As of end-June, the entire Chinese automobile fleet stood at 406 million units — of which 10.01 million, or about 2.5%, are EVs.

Homegrown BYD remains the top EV seller, staying way ahead of its domestic and foreign rivals. BYD, which has ceased production of oil-fueled vehicles since March, saw its half-year EV sales spike by over 300% to above 630,000 units, thrice the number sold by its nearest rival.

>> *continued on page 2*

RENEWABLE ENERGY BREAK-EVEN PRICES

Developing Asia	Coal	Gas
Market Price	4.62	42.00
Wind Onshore	2.29	2.61
Solar PV	1.06	0.00
Solar CSP	19.25	25.42
Mideast	Oil	Gas
Market Price	97.46	40.17
Wind Onshore	7.91	2.83
Solar PV	0.00	0.00
Solar CSP	61.65	14.56

Market prices Apr 15. Coal and Gas in \$/MMBtu, Oil in \$/bbl. Table indicates fuel price above which renewable energy is more profitable than new coal-, gas- or oil-fired power, without subsidies. Source: Energy Intelligence

SGMW — a Sino-foreign joint venture (JV) comprising GM, Shanghai Automotive and another local partner — is a distant second to BYD, posting first-half EV sales of just over 208,000 units. The JV produces a budget-friendly but basic model, Hongguang Mini, that has been hogging the top spot on the bestseller EV chart since its debut, beating pricier models from BYD and Tesla.

Model Y Is Top SUV

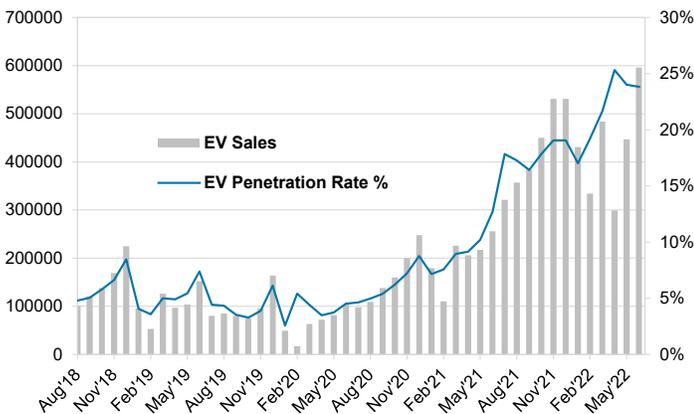
Tesla ranked third among EV manufacturers with half-year sales of just under 200,000 units. Notably, the company's Shanghai-made Model Y is the top-selling SUV model in China — not just in the EV category, but also among oil-fueled SUVs. June sales of Model Y stood at over 52,000 units, or over 64% higher than the second-ranking SUV model by BYD, according to CPCA data.

The US EV manufacturer suffered significant disruptions at its Shanghai Gigafactory during the second quarter due to Covid-19-related lockdowns and supply chain issues, but reportedly resumed full production around mid-June. However, the Shanghai plant is again suspending most operations during the first two weeks of July for upgrades to boost production capacity to some 22,000 units per week, Reuters reports. The current annual capacity at the Shanghai plant — which manufactures both Models 3 and Y — is “above 450,000 units,” according to Tesla in its latest quarterly report.

Oil-Powered Autos Rebound

Sales of oil-powered vehicles in China staged a rebound last month, thanks to the Chinese government's move to halve purchases taxes to 5%, effective Jun. 1. That reverses a trend of steep, double-digit plunges since March. June internal combustion engine (ICE) auto sales rose by 8% year on year, after plummeting between 27% and 61% in the previous three months.

CHINA EV SALES, PENETRATION RATE



Source: China Association of Auto Manufacturers

CHINA AUTOMOBILE SALES

(units)	Jun '22	Y-o-Y%Chg.	Jan-Jun '22	Y-o-Y%Chg.
All Automobiles	2,502,000	24%	12,057,000	-7%
ICEs	1,906,000	8%	9,457,000	-19%
EVs	596,000	130%	2,600,000	115%

Source: China Association of Auto Manufacturers

However, the June rebound came too late to bail ICE vehicles out from a dismal half-year performance; sales of oil-powered automobiles during the first six months still retreated by nearly 20% year on year, contrasting with the 115% surge in EV sales.

Kim Feng Wong, Singapore

ESG

Climate Risk Now a Major Factor for European Bank

In a landmark move with wide-ranging financial implications, the European Central Bank (ECB) will incorporate climate change into its monetary policy operations, the Frankfurt-based institution announced last week. It will “gradually decarbonize” its corporate bond holdings and eligible collaterals. “With these decisions, we are turning our commitment to fighting climate change into real action,” said ECB President Christine Lagarde. The ECB will also reinforce its climate-related disclosure requirements with companies, and urge ratings agencies to be more transparent and ambitious about how they incorporate climate risks into their ratings decisions.

Just a few years ago, such moves would have been rejected by many experts as a distraction from central banks' core mission, price stability. Detractors, notably in the US, similarly criticize the consideration of environmental, social and governance (ESG) issues by investors in the name of their fiduciary duty to maximize returns. But climate change is increasingly recognized as a serious financial risk. Central banks have to “reconsider the notion of market neutrality” under which they normally work, ECB executive board member Isabel Schnabel said in a speech last year. They need to ensure that climate risk is “adequately incorporated both in their own risk management and in that of the financial institutions they supervise.”

The Details

Starting this October, the ECB will “tilt” its corporate bond portfolio toward issuers with better climate performance. To measure that performance, the bank will look at companies' past greenhouse gas (GHG) emissions, future decarboniza-

tion commitments and quality of climate-related disclosure. “We will look at Scope 1 and Scope 2 emissions to assess all three criteria,” an ECB spokesperson tells Energy Intelligence. “In addition, in the backward-looking part, we will also include Scope 3 when assessing GHG emissions at sectoral level.” Central banks can inject money into the economy by purchasing securities from the open market. The ECB and the eurozone’s 19 national central banks — collectively known as the Eurosystem — currently hold almost €5 trillion (\$5 trillion) in such securities. They mainly consist of sovereign debt, but also include about €300 billion in corporate bonds.

Collateral and Haircuts

Central banks can also lend money to commercial banks against collateral of sufficient amount and quality. Starting before end-2024, the Eurosystem will limit the share of assets issued by “entities with a high carbon footprint” that can be pledged as collateral. This will “reduce climate-related financial risks in Eurosystem credit operations,” the ECB emphasizes. At first, this policy will only apply to debt issued by nonfinancial corporations, but may be extended to financial institutions “as the quality of climate-related data improves.” As of this year, the Eurosystem will also consider climate change risks when reviewing “haircuts” applied to corporate bonds used as collateral. Haircuts are discounts applied to the value of collaterals based on riskiness.

Go Further?

While welcoming these moves, activists believe the ECB should go further. Lagarde seems to agree. She recently said she is “not giving up” on green targeted lending — suggesting resistance within the institution and its governing council. The ECB has operated dual rate, “targeted, longer-term refinancing operations” programs since 2014 to incentivize bank lending to households and nonfinancial corporations — as opposed to financial institutions.

Similar programs could be used to help finance green investments, Lagarde suggests. And a group of economists recently said “cheaper capital costs for these investments would stimulate the supply of green domestic energy, while also directly supporting households in navigating the cost of living crisis by reducing energy consumption and bills” — arguing this in an open letter calling for green discounted interest rates in ECB refinancing operations. This would not contradict the ECB’s price stability mandate, said Utrecht University’s Rens van Tilburg, one of the letter’s signatories. “Accelerating the energy transition is needed to prevent fossil fuel prices destabilizing other prices in the eurozone,” he emphasized.

Philippe Roos, Strasbourg

POWER

Renewables Eyed to Fight Sky-High Gas Prices

Sky-high gas prices are putting a strain on energy consumers across Europe. Short-term interventionist measures keep imports at barely manageable levels, but removing the sting of long-term high prices evades policymakers. Many now argue a rapid expansion of renewables plus a reform of wholesale electricity markets should be prioritized to fight high prices.

The UK has demonstrated that securing large volumes of renewable capacity at competitive prices is doable. Last week, the UK concluded its largest renewable electricity competitive auction ever. Roughly 11 gigawatts of capacity, mainly offshore wind, was awarded for a levelized energy cost well below £50 per megawatt hour. In the case of offshore wind, all projects totaling some 7 GW of capacity were awarded contracts at £37.35/MWh (\$44.22/MWh) on a levelized cost of electricity basis. That is roughly one eighth of the current wholesale power price — typically set by gas-fired units as the marginal technology — for the first quarter of 2023 in the UK, and roughly a quarter of current baseload prices in Northwest Europe for the coming winter. And that is baseload prices. Peak prices are even higher.

Largely because of astronomical spot gas prices, baseload power for March in Germany was trading at roughly €252 per megawatt hour on Jul. 12, while in France, Belgium and the Netherlands, prices were even higher. UK baseload prices for the first quarter of 2023 was trading way higher at £357/MWh. These prices are snapshots but prices have been close to these levels for weeks.

Some governments and regulators in Europe are now seriously considering reforms to wholesale power markets that would stop gas routinely setting wholesale power prices. Last week, UK energy regulator Ofgem released a discussion paper, *Net Zero Britain*, which detailed potential reforms for the power market. Ofgem CEO Jonathan Brearley said consumers could save billions of pounds every year by “reforming the electricity wholesale market in the coming years, potentially making changes to address the issue of gas routinely setting the price for the whole electricity market.”

Ofgem says one potential solution could be to split the wholesale power market in two, with one market for intermittent renewables or green power, which would get a “fixed price per unit based on average costs.” The other market would be for “firm power paid at market prices as now,” such as gas-fired units. Ofgem conceded “this would be a major reform to a key component of the energy market, so would need careful consideration and will take time to implement.”

Ofgem says a “faster and simpler” alternative would be to expand the use of contracts for difference (CFD) incentives, such as the

contracts covering the 11 GW of renewable capacity secured this month at prices as low as \$37.35/MWh.

EU members, including Spain and Portugal, have been given approval by Brussels to intervene in wholesale power markets. Their plan involves capping the price of gas, which lowers wholesale power prices. It is estimated the interventionist measures will cost both countries more than €8 billion. Senior European Commission figures, including Commission President Ursula von der Leyen, have said that current market rules aren't working. Von der Leyen said they need to adapt to the new reality of dominant renewables. This is a step change in opinion to views expressed last October when Brussels published a report from energy regulators that found wholesale power markets were working well and didn't need overhauling.

'Urge you to Refrain'

In March, electricity industry association Eurelectric warned against countries intervening in wholesale power markets. Eurelectric head Jean-Bernard Levy said in a letter to state heads, "we urge you to refrain from distortive ad-hoc interventions, which deter investments in clean and renewable energy projects, thus slowing down Europe's exit from imported fossil fuels."

Strike prices offer a clear signal that renewables have slashed LCOE costs, way outperforming fossil fuels, even after adding intermittency costs. Offshore wind projects due on line in 2026/27 received a strike price of £37.35/MWh. Solar PV projects received a strike price of £45.99/MWh. In contrast, the Hinkley Point C nuclear project was awarded a strike price of £92.50/MWh — in 2012 prices. CFD awards were also granted to onshore wind projects, remote island wind projects, energy from waste, floating wind and tidal stream schemes.

Jason Eden, London

NEW TECHNOLOGIES

Why Hydrogen Is Taking Off So Rapidly

Hydrogen has long been touted as a promising solution for the low-carbon energy transition, but traditionally lagged behind other technologies like wind and solar in terms of real movement and investments. Yet that's been rapidly changing, with increasing interest seen in developing hydrogen projects, not least from the oil and gas industry. So what's behind hydrogen's growing attraction? It's partly down to hydrogen's utility and versatility, but also, critically, cost-related, according to Marco Alvera, the Group CEO of Tree Energy Solutions (TES). The firm is developing a green hydrogen-based project at Wilhelmshaven in Germany.

'Growingly Frustrated'

In an interview with Energy Intelligence, Alvera reflected on how he personally came to see hydrogen's promise. As the CEO of Italian energy infrastructure firm Snam for six years before he took up the helm at TES, and as a veteran of Enel and Eni, Alvera says he has "seen the differences between electrons and molecules." He was also "growingly frustrated that we were trying to electrify everything, but didn't really have a solution for the world of molecules." And molecules are going to remain important because you can store, transport and move them — and move them between seasons — "in a way you will never be able to do with electrons." Green hydrogen can do this and help to solve the "energy trilemma" by providing "something that's secure, that's cheap and that's clean," Alvera said. "It's really what we call a cupid of the sector coupling, to really drive the energy transition forward," he added, pointing to how this could connect "the deserts of North Africa, of sub-Saharan Africa, of the Middle East, of Australia, of Texas, with the factories of Japan, of Europe."

Eureka Moment

The real "Eureka moment," came, however, when Alvera saw the costs of hydrogen really falling very quickly, to a point where green hydrogen is seemingly on track to become cheaper than hydrogen from fossil fuels. Fossil fuel-based methane in Europe has now risen to around €150 per megawatt hour, whereas it used to be €20/MWh. Meanwhile, green hydrogen used to cost €800/MWh and it's quickly descending and likely to hit €25/MWh within this decade, Alvera suggests. "That's why it's going to really quickly take on a lot of market share from the other fossil gases, and from the other fossil molecules like coal and oil as well, at some point." In a fully decarbonized energy system, Alvera reckons that hydrogen could meet more than 30% of primary energy needs. Getting there is the challenge, and what's currently missing are final investment decisions (FIDs) for projects to move ahead: "To attract investments we need the FIDs and to change the world we need FIDs, to even start moving the needle we need FIDs," he says.

Real Action Plans

Better policy support would help. While policymakers in Europe have set out "a very bold set of ambitions," Alvera notes they had yet to produce a hydrogen strategy. "For me a strategy is when you have an action plan and things start falling into place to get us to the FIDs," he suggested. "We need to have safety standards put in place, we did have people start working on the regulation of the pipelines versus LNG, versus the storage we need," Alvera explained. The EU is still working on this, alongside a long list of other new policy measures to put its Green Deal into effect. "I see movement, but I think it still requires a lot of work and hopefully in the next 12-18 months, we'll have a lot more clarity, but we can't afford to wait 18-24 months." With this, Alvera said "you'll see some first moving companies like TES sprinting ahead, taking some FIDs."

How TES Works

The TES Wilhelmshavem project is envisioned as delivering LNG in a first phase with some green gases, and over time becoming 100% green hydrogen. That will be imported as synthetic methane, or renewable natural gas as TES calls it, which Alvera said is “almost too good to be true because it’s a lot cheaper than today’s fossil natural gas.” It will also have no carbon dioxide emissions thanks to the TES system, which envisages delivering synthetic gas to a customer and then taking away their CO₂ — which will in turn be used to create more renewable natural gas, in what Alvera describes as a “closed loop.”

‘Plug and Play’ for Heavy Industry

While some industrial users can electrify and some may want to try pure hydrogen — which would require them to reconfigure industrial processes — Alvera believes TES can offer an attractive alternative. In conventional heavy industries like steelmaking, if you can deliver synthetic renewable natural gas, they don’t need to worry about changing anything. “That’s a clear win-win, because they get a cheaper source, it doesn’t have CO₂. If we’re able to capture it and take it back for the next cycle, and, it’s something they can just plug and play without having to worry,” he says. Energy Intelligence’s vice chairman, Marcel van Poecke, is an executive co-chair at TES.

Ronan Kavanagh, London

NEW TECHNOLOGIES

Net-Zero Tech Firm Has All the Bases Covered

The list of technologies expected to drive the energy transition has been well enumerated by now. Carbon capture and storage (CCS), zero-emissions hydrogen, carbon-free fuels and clean power are some of the pillars of the “net-zero” world companies and governments around the planet are striving for in the coming decades. Countless companies across sectors are pursuing one or more of these technologies. But few can claim a portfolio and development pathway that includes innovative solutions for each of these buzzy technologies and more.

North Carolina-based 8 Rivers Capital has emerged as a sort of jack-of-all-trades for energy transition technologies. Its flagship technology spawned a company called NET Power, which made headlines after it successfully started up what is said to be the world’s first zero-emissions power plant at a demonstration facility outside Houston last November. In April this year, 8 Rivers’ direct air capture (DAC) technology, known as Calcite, was named one of the 15 “milestone” winners of Elon Musk’s Xprize for carbon removal, bagging \$1 million and a position

firmly in the running for the \$50 million grand prize to be awarded in 2025.

8 Rivers is working on a proprietary process it calls 8RH₂, which produces clean hydrogen and ammonia via methane reforming and a novel carbon dioxide capture system. It’s also developing its own point-source CCS solution, and a separate process to make clean ethylene, among other things. A number of its technologies have received support from the US Department of Energy. Earlier this year, South Korean conglomerate SK Group invested \$100 million for a 12% equity stake in 8 Rivers. The two companies have established a joint venture that will help 8 Rivers expand its reach into the Asia-Pacific.

Why the Wide Net

CEO Cam Hosie has described 8 Rivers as a “technology-agnostic decarbonization solutions platform.” He thinks its “multi-disciplinarian” approach will help the world achieve its net-zero goals faster. The strategy is to design processes that are cost-effective and readily deployable, and then license the intellectual property (IP) to project developers who can scale up. “The stuff that makes one of the technologies successful tend to be lessons that can be applied into adjacent spaces, and we’ve become good at effectively rolling those out and taking those lessons across,” Hosie tells Energy Intelligence.

NET Power has been foundational for 8 Rivers, financially and technologically. The process is based on what is known as the Allam-Fetvedt Cycle, invented by two of 8 Rivers’ founders who figured out how to burn natural gas with pure oxygen and use the waste CO₂ at high pressures to spin a turbine and generate power. Most of the CO₂ is then repressurized and circulated back through the system, inherently capturing the emissions in a loop while improving the overall process efficiency. The excess CO₂ comes out in a pure stream that is immediately put into a pipeline or injected underground.

The process is a twist on oxy-fuel combustion, a decades-old method of burning fuel with oxygen instead of air. Oxy combustion burns cleaner and hotter than conventional systems. But the “energy penalty” associated with the CO₂ capture has made oxy combustion difficult to commercialize historically, Hosie says. A key innovation of the Allam cycle, he says, was to circulate the CO₂ waste in a semi-closed loop to improve the whole process, turning the problem into an advantage.

NET Power, which functions as an independent entity, has won several high-profile backers, including Occidental Petroleum, McDermott and Baker Hughes. NET Power has already begun licensing its technology to utility-scale developers in the US and Europe, with Asia likely to follow soon. 8 Rivers expects two 280 megawatt projects in Colorado and Illinois — operated by separate third parties — to see final investment decisions this year, with start-ups planned for 2025.

Genuine Innovation

The Allam cycle represented a “genuine innovative leap” in the early days of 8 Rivers, Hosie says. As the company furthered its understanding of oxy combustion and the properties of CO₂, it began to comprehend other problems its processes could help solve. “With high [efficiency] heat and full CO₂ capture you can unlock an incredible number of products across the petrochemical value chain, or the large process-technology value chain,” Hosie says. “If you look at energy patent families that mention CO₂, we’re one of the biggest holders of IP in the world,” Hosie says.

8 Rivers’ focus is on the “invention of process improvement, not necessarily widget improvement,” Hosie says. The company relies primarily on off-the-shelf components, which means the technology readiness level (TRL) for many of its solutions is already quite high. “We might be using [a component] in a slightly different application from where it has been used previously but it’s the same type of scale and duty as they’re used elsewhere,” he says. “So as a result, for virtually all of our other technologies we’re working on, we are progressing them down development pathways, but the anticipation is that they will be deployable at commercial scale from deployment No. 1.” Most of 8 Rivers’ IP is developed in-house, but Hosie says he welcomes partnerships and collaborations. “The more people in this space, the more likely we are to realize the decarbonization goals that we have,” he says.

Luke Johnson, Houston

POLICY

Biden Administration Takes Aim at State Transport Emissions

The Biden administration is dialing up efforts to curb transportation sector pollution, having rolled out a new initiative aimed at requiring state-by-state greenhouse gas reduction targets for highway emissions. Last week, the US Department of Transportation (DOT) rolled out a landmark proposal to require US states to set targets to reduce greenhouse gas (GHG) emissions from highway traffic and establish a tracking system. The plan, similar to one contemplated during the Obama administration but never put into effect, would add a new, mandatory rung to state climate planning, although how states will implement and enforce the mandate is not yet clear.

Transport remains the biggest contributor to the US GHG footprint. The DOT rulemaking proposes to make declining GHG targets in transport a nationwide mandate, along with requiring states to track emissions from roadway travel. Additionally, the rulemaking would establish a national tracking system for monitoring progress on a state-by-state level, and help states make

“more informed investment decisions” via a funding mechanism in the bipartisan infrastructure law passed last year. According to the Center for Climate and Energy Solutions, 36 states plus Washington, D.C. have already put transportation-specific policies in place, although they run the gamut — from emissions standards to zero-emission vehicle (ZEV) deployment to rebates and other incentives for ZEVs, to low-carbon-fuels standards like Oregon and California have adopted.

Flexibility

The new rule is meant to be implemented in accordance with the DOT’s corporate average fuel economy standards, which the department set for model years 2024–26 in April. Those require automakers to achieve a fleet average of around 49 miles per gallon for light-duty vehicles by model year 2026, with smaller upticks required in 2024 and 2025. Additionally, the Biden administration has set an ambitious goal of 50% of US auto sales by 2030 to be clean vehicles.

The new state mandate adds a fresh layer, although there are policy questions. For example, the proposed rule says that states would have flexibility in deciding how aggressively to set the targets, so long as they work incrementally and align with the Biden administration’s own GHG reduction goals of slashing overall economy-wide emissions by 50%–52% from 2005 levels by 2030 and achieving net-zero emissions by 2050. Specifically, the proposed rule would require state transportation departments and metropolitan planning organizations (MPOs) with national highways within their jurisdictions to craft declining GHG targets for reducing emissions from on-road mobile sources relative to 2021 levels. For US states, that would mean setting two and four-year targets and establishing a method for measuring and reporting on compliance. How states plan on meeting the targets is another question — the mandate could compel states that currently do not have electric vehicle incentive programs, for example, to adopt them. The proposal essentially would amend DOT-governing regulations for national performance management measures to require the GHG targets and stipulate that “performance” is meant to include environmental sustainability.

Early Litmus Test

But some are already suggesting that the DOT may be overstepping its authority. Nick Goldstein, vice president of regulatory affairs and legal issues for the American Road and Transportation Builders Association, told the *Engineering News-Record* that federal highway authority lacks the power to enforce the mandate, citing the recent Supreme Court ruling in *West Virginia v. EPA*. The case is widely viewed as curtailing agencies’ authority to enact rules historically outside of their lane of expertise, and as such, the DOT rulemaking could be an early litmus test for the reach of the Supreme Court ruling.

Bridget DiCosmo, Washington

IN BRIEF

Eni Wins Innovation Award

Energy Intelligence announced that Eni has been chosen as the winner of the 2022 Energy Innovation Award. Eni scored highly across a range of quantitative measures and was recognized by voters for its innovative, strategic approach to the energy transition. “The energy transition isn’t an easy feat. The world will need more companies like Eni that are proactive in adapting, innovating and investing to find solutions,” said Lauren Craft, editor of *EI New Energy* and administrator of the award. “Eni’s leadership and marked advances over the past year are an example to the energy industry — an industry with fundamental and integral roles to play in the energy systems of tomorrow.”

The Energy Innovation Award winners are chosen in a two-part process that includes an evaluation of their performance relative to the proprietary Transition Strategy Index and Low-Carbon Investment Tracker benchmarks developed by the Energy Intelligence Energy Transition Service. Winners are then chosen from a short list of candidates through a vote by an independent panel of leading experts drawn from finance, government, academia and consulting. Eni CEO Claudio Descalzi will receive the award during the Energy Intelligence Forum 2022 on Oct. 5. The Forum is being held in-person in London from Oct. 4-6.

Chevron Explores Asia CCS

Chevron is seeking to secure CO2 storage capacity in the Asia Pacific, one of its focus areas where it aims to offer CCS as a service to third parties. “We are actively working to lock up prime pore space that will be good for emissions across Asia Pac [Asia Pacific],” Chevron’s vice president for CCUS said at a media meeting, adding that the company has “some commercial activity ongoing in the Asia Pacific.”

Chevron is aiming to capture and store 25 million tons/yr of CO2 by 2030 and strives “to have CCS projects in the Asia Pacific region contributing to that goal,” Powers

said. The US supermajor is focusing on large industrial bases where there is a concentrated stream of CO2 emissions such as Singapore, Japan and South Korea. In Singapore, the 290,000 b/d SRC refinery “is a clear source of emissions,” Powers said, adding that Chevron is “interested in providing solutions that can meet the broader market.” Chevron has a 50% stake in SRC, while PetroChina’s subsidiary SPC owns the other half.

Spimex Preps Carbon Trading

The St. Petersburg International Mercantile Exchange (Spimex) is preparing the groundwork for a national carbon trading market that will start operating once the necessary legislation and regulations are in place. There were expectations that Russia might have frozen its carbon-related plans as leaders were forced to shift attention to shielding the economy from unprecedented sanctions. But Moscow believes that it needs to establish its own carbon market as the country hopes to stick to its target of becoming carbon neutral by 2060.

Spimex aims “to form a trading section in the near future where carbon quotas and credits will be circulated,” Chernyshev said, adding that the exchange has set up an informal working group with Kontur — a company recently selected by the state as a national carbon register operator. Spimex is eyeing a leading role as a platform for trading carbon units that has yet to be created in Russia. For now there is still nothing to trade. At the first stage, voluntary climate projects and carbon credits that are generated by these projects — or certified emission reduction units — should appear, Spimex head Alexei Rybnikov explained. He believes that such projects and units could materialize by the end of this year. More broadly, the idea is to create a national carbon units trading system similar to the EU’s Emissions Trading System.

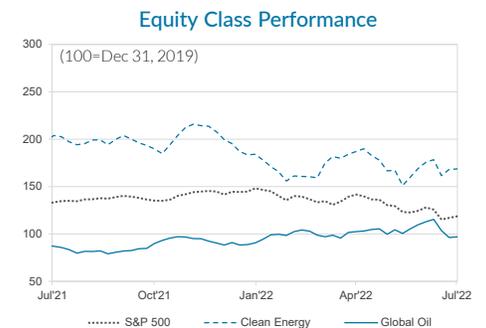
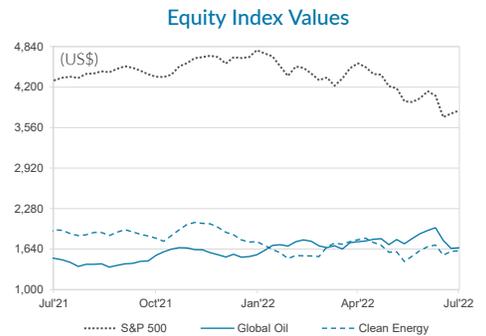
Equinor Grabs US Storage Firm

Norwegian major Equinor is set to enter the US power market through the acquisition of privately held battery storage

developer East Point Energy, a deal that is expected to complement the larger company’s assets in the energy transition space. Equinor said Tuesday it would acquire a 100% stake in East Point, which currently has a 4.1 GW pipeline of early to mid-stage battery storage projects focused on the US East Coast. “Additional growth potential beyond the current pipeline has been identified,” Equinor said. A price tag for the deal was not disclosed. The deal is expected to close in the third quarter of this year.

Equinor is one of the largest offshore wind developers in the US. In 2021, it partnered with UK supermajor BP to build out a pair of wind projects off the US East Coast totaling 4.4 GW and to pursue more developments in the sector in the future. The East Point acquisition “will enable Equinor to further unlock the potential we see in the renewables space in the US, capturing value from volatility in the power markets and providing reliable services to the grid,” said Olav Kolbeinstveit, senior vice president for power and markets within Renewables at Equinor.

CLEAN ENERGY EQUITY MARKETS



Source: S&P Global

EI NEW ENERGY DATA

ENERGY FUTURES: REFERENCE PRICES

Carbon (€/ton)	Jul 8	Jul 1	Chg.
ECX EUA	83.36	86.89	-3.54
CME GEO (\$/offset)	4.00	4.13	-0.13
Crude oil (\$/bbl)			
Nymex WTI	101.39	109.06	-7.67
ICE Brent	105.73	114.00	-8.27
Natural gas (\$/MMBtu)			
Nymex Henry Hub	5.84	6.14	-0.30
ICE UK NBP	33.74	24.24	+9.51
Coal (\$/ton)			
McCloskey CSX	175.00	174.60	+0.40
ICE Rotterdam	382.93	368.45	+14.48

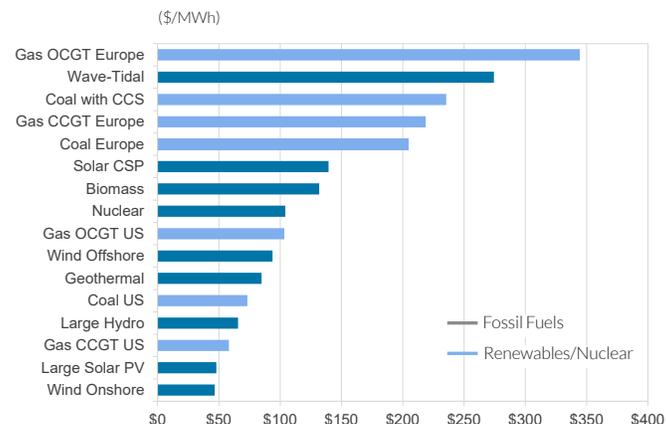
All prices are weekly averages and front-month. EUA = EU Allowances; GEO = Global Emissions Offset. Replaces ECX CER starting 3/30/21. ICE UK gas converted from p/therm. *Short tons. Source: Exchanges

GLOBAL ELECTRICITY PRICES

Europe (\$/MWh)	Jul 8	Jul 1	Chg.
Germany (EEX)	258.53	299.69	-41.16
France (Powernext)	367.82	332.54	+35.29
Scandinavia (Nordpool)	66.44	124.39	-57.95
UK (APX)	258.41	242.36	+16.06
Italy (GME)	405.64	386.22	+19.42
Spain (Omel)	146.34	148.45	-2.11
North America			
New England	56.00	75.55	-19.55
Texas (Ercot)	105.84	61.33	+44.51
US Mid-Atlantic (PJM West)	98.56	100.20	-1.64
US Southwest (Palo Verde)	58.21	67.50	-9.29
Canada (Ontario)	34.86	33.49	+1.36
Other			
Australia (NSW)	245.99	280.34	-34.34
Brazil (SE-CW)	10.69	10.60	+0.09
India (IEX)	69.81	66.02	+3.79
Japan (JPX)	200.86	270.55	-69.69
Singapore (USEP)	289.39	163.64	+125.75

Weekly average of 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 (Mar 2022)	484,000	EV sales Mar '22	72,899
% LDV sales NEVs Mar 2022	21.7%	% LDV sales NEVs Mar '22	5.85%
NEV sales (Feb 2022)	334,000	EV sales Feb '22	59,554
% LDV sales NEVs Feb 2022	19.2%	% LDV sales NEVs Feb '22	5.66%
Total NEV fleet as of Mar 2022	8,915,000	Annual EV sales 2021	605,958
% fleet NEVs	2.90%	% LDV sales NEVs 2021	4.14%

Europe (EU, UK, and EFTA)

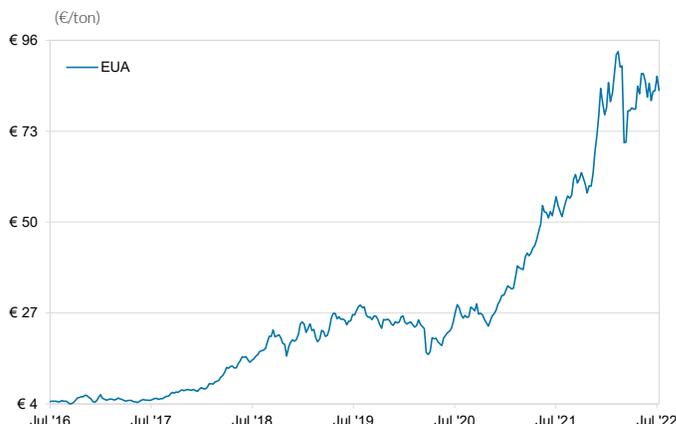
Sales Penetration	EVs = all New Energy Vehicles. EVs = plug-in hybrids and all-electrics. LDVs = light-duty vehicles. EFTA includes Norway, Switzerland, Iceland, Liechtenstein. Sources: China Association of Automobile Manufacturers, China Passenger Car Association, US Alliance for Automotive Innovation, US Argonne National Laboratory/Wards Auto, European Automobile Manufacturers Association
EV registrations Q1'22	562,276
% LDV sales EVs Q1 '22	20.47%
EV registrations Q4 '21	684,655
% LDV sales EVs Q4 '21	26.2%
EV registrations Q1 '21	454,694
% LDV sales EVs Q1 '21	14.83%

GLOBAL CARBON PRICES

Europe (€/ton)	Jul 12	Jul 5	Chg.
EUA Dec '22	85.65	83.19	+2.46
US (\$/ton)			
CCA (Calif.) Dec '22	29.27	30.56	-1.29
RGGI (Northeast) Dec '22*	13.77	14.00	-0.23
New Zealand (NZ\$/ton)			
NZU (spot)	73.15	74.75	-1.60
Asia (\$/ton)	Jul 8	Jul 1	Chg.
China (National)	8.52	8.66	-0.14
South Korea	16.07	16.02	+0.05

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

EU CARBON FUTURES PRICES



ECX front-month futures. Source: ICE