Wind farms threaten to speed up North Sea decommissioning

Oil and gas operators planning to prolong fields' lifespan may find themselves increasingly in conflict with wind farm developers

The projected timeline for oil and gas decommissioning in the North Sea could be forced forward by spatial constraints created by offshore wind farm construction, according to the developers of a planned wind hub in the region.

A consortium of Dutch, German and Danish companies wrote in a concept paper on 9 July that the North Sea Wind Power Hub (NSWPH) they are developing would have an estimated capacity of 180GW by 2045, providing clean power to "hundreds of millions of Europeans" in those countries and the UK. "To meet the ambitious targets as set in the Paris Agreement, a large-scale roll-out of offshore wind is required. Increased spatial use by offshore wind energy and transmission infrastructure is then expected accordingly." Because the turbine foundations deemed the most cost effective need a water depth of less than 55 metres—and as the targeted area is already used extensively

for shipping, military exercises and fisheries—there is not currently enough available space for the required number of offshore wind farms (OWFs). “If we take an exclusionary approach, and only install farms in areas that are not currently being used, there simply is not enough room for a cost effective, large-scale build out of offshore wind power in the North Sea” says Peter Larsen, a development consultant at Danish grid firm Energinet. The firm is developing the project with the Dutch power grid operator Tennet, its gas equivalent Gasunie and the Port of Rotterdam.

Competing timeframes

The NSWPH’s first phase would be connected to shore as early the 2030s. But the British authorities expect decommissioning work to continue in the area until 2060. Larsen says the eventual decision on whether projects such as the NSWPH should take precedence over the oil and gas sector in the North Sea is one that must be taken by governments. “Which will be the most cost-effective source of power from a social-economic perspective, as part of the green energy transition?” he asks. It is fair to say that it is a leading question. Currently only 3pc of the area the NSWPH would need is available, or only 14,000 km2, according to the NSWPH researchers’ February feasibility study. The largest spatial risk created by the oil and gas sectors is not platforms themselves, but the helicopter landing safe zone of 2.5 nautical miles around these. In some cases, it may be possible to site an OWF’s turbines to accommodate these zones—but not all. “After drawing OWFs in the GIS mapping tool, it was discovered that there are attractive farm locations that have so much overlap between helicopter zones, that one can actually not adapt the wind farm, so the oil and gas function needs to adapt,” the study says. The authors also say confidentiality on which specific platforms will be gone by the year 2030 makes it harder to make spatial plans. While that information is commercially sensitive, oil producer lobby goup OGUK found

last November in a report on decommissioning that higher oil prices and a “relentless focus” on efficiency were pushing field retirements further into the future. Its report forecasts that decommissioning activity will remain relatively stable over the next decade.

Peaceful co-existence

OGUK’s view is that there is no need for conflict between the wind power and oil and gas in the North Sea—and that sharing the spatial resources could be beneficial. “Strong cooperation between different sectors is crucial as the UK invests in all forms of energy production to meet its future energy needs”, OGUK says. “The overlap phase when decommissioning takes place alongside the installation of new offshore wind structures could provide the opportunity for the different sectors to align interests and collaborate on things like logistics costs and stakeholder engagement.” For its part, the NSWPH developers also accept that “co-utilisation” will be necessary in the future, adding that “the extent to which co-utilization will be needed highly depends on future developments such as the decommissioning of oil and gas platforms”. https://www.petroleum-economist.com/articles/politics-economics/europe-eurasia/2019/wind-farms-threaten-to-speed-up-north-sea-decommissioning?hootPostID=271f29a013ef2922e07192d9cb92b6b3

Emissions rules and electric shift to spur car engines M&A

Mergers and acquisitions have been stuck in a rut since Volkswagen (VOWG_p.DE) was caught cheating pollution tests in 2015, triggering a global tightening of emissions regulations that depressed the value of petrol and diesel technologies. But the market is beginning to separate companies capable of meeting new emissions standards from those struggling to do so, which could close the gap in price expectations between buyers and sellers over the next 12-24 months, industry experts say. The auto industry has all but stopped developing next-generation combustion engines as limited resources are directed towards building electric and self-driving cars. However, electric vehicles are still a niche product, accounting for only 1.26 million – or 1.5 percent – of the 86 million cars sold worldwide last year, and analysts forecast it will be the middle of the next decade before a tipping point comes when electric cars overtake combustion-engined variants. That means there will still be demand for emissions-compliant combustion engines and so manufacturers and suppliers able to offer that are likely to see valuations

recover, said Reinhard Kuehn, co-head of European Automotive at Deutsche Bank. “At the same time, suppliers that struggle with this will remain a hard sell,” Kuehn said. Meanwhile, as production capacity of petrol and diesel engines is cut back, the impetus for mergers among suppliers should increase, bankers believe. Germany’s Volkswagen, one of the largest manufacturers of petrol and diesel engines, has said it will develop its final generation of combustion engines by 2026, while U.S. rival Ford (F.N) last month said it would close two engine factories in Europe. “The profit pool of companies with combustion engine-related technology – once the envy of the industry – is shrinking with the rise of electric vehicles and the digitization of the industry,” Goldman Sachs managing director Axel Hoefer said. “You would expect someone to come in and consolidate to benefit from economies of scale.” Volkswagen is now warning its suppliers to prepare industry-wide solutions for winding down combustion-engine manufacturing as it ramps up mass production of electric vehicles. The company is retooling 16 factories to build electric vehicles and plans to start producing 33 different electric cars under the Skoda, Audi, VW and Seat brands by mid-2023, transforming the industry’s supply chain. “It makes no sense to have factories running at only 40% capacity,” Stefan Sommer, Volkswagen’s procurement head, told Reuters. “The auto industry is obliged to develop structures to consolidate combustion engine assets, to decide where to bundle certain activities.” “If we end up with uncontrolled insolvencies, it will be a problem for the industry,” he said.

MISMATCH

There are more than 120 plants making combustion engine components in Europe, according to consulting firm AlixPartners. German auto industry association VDA says 436,000 jobs are tied to building petrol and diesel engines in Germany alone. Demand for compliant combustion engine assets has already triggered consolidation among carmakers themselves

– PSA Group’s (PEUP.PA) takeover of General Motors’ (GM.N) Opel business in 2017 was driven by that issue. “With emissions regulation getting more stringent, particularly in Europe, some manufacturers are getting left behind in terms of their ability to develop compliant engines,” Franciscus van Meel, BMW’s (BMWG.DE) head of vehicle development, told Reuters. Until recently, deals have still proved difficult to do because of lingering disagreements over valuations. U.S. group Dana (DAN.N) late in 2018 launched the sale of its European head gasket business, a key component for combustion engines, people close to the matter said. With the help of Bank of America it invited suitors to bid, but pulled the auction several weeks later due to muted interest. The sale of Germany’s closely-held Ifa Group, a maker of shafts mainly used in combustion engine-powered cars, was announced a year ago, but never got over the finishing line. Among the few suitors was China’s Wanxiang, but differences on pricing proved insurmountable, people close to the talks said. “The main problem is that buyers’ and sellers’ price expectations don’t match,” KPMG partner Juergen Schlangenotto said. “A seller typically says: I have a robust order book and good margins so I want a valuation of 6 times EBITDA (annual core earnings), while a buyer says there’s no long-term growth so I am paying 4 times.” A fresh test of interest in combustion engine assets will be the sale of engine parts and gear box parts maker Tekfor. Private equity owner KKR is in talks with a Chinese buyer, according to people close to the matter. James Kamsickas, CEO of U.S. drivetrain supplier Dana, believes internal combustion engine (ICE) demand could persist for many years. “People are overbaking a little bit on how much the internal combustion engine is just going to go away,” he told Reuters. “If anything, I’m a very strong advocate that it’s going to be a world of hybridization for the next 15 years. Last time I checked, that still requires an ICE.”

Editing by Georgina Prodhan and Mark Potter

Trade tensions put energy transition at risk, says BP chairman

LONDON (Reuters) – Trade tensions risk throwing the global economy's transition to greener energy into disarray and could hurt energy companies' preparations toward it, BP Chairman Helge Lund said as leaders of the world's largest economies gather for talks in Japan.

Lund, in his first interview since taking office in January, said BP would rather see a rapid, orderly phasing out of fossil fuels than a delayed and disorganized transition.

The former chief executive of Norwegian oil group Equinor said BP as well as rivals such as Royal Dutch Shell (RDSa.L) and

ExxonMobil (XOM.N) would have a vital role to play to ensure a successful transition to low carbon economies.

“It is better for us to see a path that goes rapidly,” Lund said. “It will be very difficult for the oil and gas companies but that is a better and a preferred solution than an uncontrolled sudden change maybe 10, 15 years into the future.”

London-based BP, like some of its peers, has taken steps toward meeting the 2015 Paris Climate Agreement to limit global warming, including setting targets to reduce carbon emissions from its operations, link them to managers’ pay and ensure that investments are in line with the accords.

But many investors say BP will have to do more, including tackling emissions from the fuels and products it sells to millions of customers daily, known as Scope 3 emissions, to prevent a catastrophic rise in global temperatures.

Lund said however that such Scope 3 targets would tie BP’s hands to make future investments, whether in renewable energy or oil and gas. He nevertheless said the company’s thinking around Scope 3 was likely “to evolve over time.”

BP invested around $500 million in renewable power, electric vehicle charging points and other low-carbon technologies last year, a fraction of its annual spending of $15 billion.

And the pressure on companies and governments to do more to curb greenhouse gases is rising as carbon emission levels show no sign of decreasing.

Investors managing more than $34 trillion in assets, nearly half the world’s invested capital, this week demanded urgent action from governments on climate change, piling pressure on leaders of the world’s 20 biggest economies meeting this week.

France has said it will not accept a final G20 communique that

does not mention the Paris climate change agreement.

“The long-term framework around the energy transition is important. Over time it is much easier for big companies like BP if we have a stable global framework for trade and investments,” Lund told Reuters at BP’s London headquarters.

Lund said an unprecedented level of cooperation was needed between companies and governments to bring greenhouse gas emissions to zero by the end of the century.

He urged governments to introduce a price on carbon emissions to allow phasing out fossil fuels, even though only a handful of such schemes have been introduced around the world.

SOUND INVESTMENT

BP has faced a wave of protests by climate activists, including a blockade on its London office and protests at events the company sponsors.

Big investors, including Norway’s sovereign wealth fund, are reviewing shareholdings in some oil and gas drillers, though not in BP and its largest rivals.

Lund, who took part in discussions on a climate resolution with a group of investors earlier this year, believes most investors understand that modern societies are almost built on hydrocarbons.

BP forecasts that even with a rapid increase in wind, solar and other forms of renewable energy, fossil fuels will account for the majority of energy supply for decades to come.

Lund also warned that attempts to curb fossil fuels too fast could harm societies.

“It takes time to change energy systems … If you try to build down the oil and gas industry quicker than you are able to build up a carbon neutral system you will pull societies

back.”

Lund said large oil companies would be vital for the transition due to their large balance sheets, technical expertise and innovation skills.

“To be a strong contributor in the long term we have to stay financially strong, we have to be a good investment.”

Lund also said: “There is another dimension that we need to think about and that is if you believe that BP and other integrated oil and gas companies understand energy markets, they have significant balance sheets, they have technical capabilities, they have innovation capabilities, they can take risks – so in my mind business and these companies play an incredibly important role in the energy transition.”

SUCCESSION

Lund, 56, faces the task of leading BP through the energy transition and also overseeing the succession to Chief Executive Bob Dudley, who took the helm in 2010 following the crisis over the Deepwater Horizon rig explosion in the Gulf of Mexico.

Dudley also steered BP through the oil industry’s worst downturn in decades so that the company is now producing strong profits which reached a five-year high last year of $12.7 billion.

“Bob is a very good leader, I am not sure where BP would have been without him,” Helge said.

BP’s board would ensure that when Dudley, who turns 65 next year, steps down, there will be “at least a number of candidates who can compete for the job,” he added.

Lund, a former consultant and political adviser in the Norwegian parliament rejected suggestions he could replace

Dudley to become the next CEO.

“I’ve been CEO for three companies. I thought about this when I left BG whether I should try to get one more (CEO) job or try to get a different life and I decided on the latter and I think it is rewarding,” he said.

Solar, storage and wind can keep us on track as far as 2030

With solar and wind power already the cheapest source of new power generation across two-thirds of the globe, analysts at Bloomberg New Energy Finance (BNEF) have predicted Europe will lead the race to decarbonize its grid.

The authors of this year's *New Energy Outlook* report, published today, expect Europe to generate 92% of its electricity from renewables by 2050 thanks to carbon pricing and other supportive policies. The U.K. last week voiced a net zero carbon 2050 ambition and it is expected Ireland and the EU will follow suit in due course.

Power sector emissions in China, however, are not set to peak until 2026 – thanks to an extensive modern coal power fleet – although they are expected to decline by more than half in the subsequent 20 years. That is in part because of an anticipated rise in demand for electricity of more than 50% by 2050, with Asia due to present a $5.8 trillion power demand market – more than half the global figure during that period – and India and China alone a $4.3 trillion opportunity.

The U.S. will also lag behind Europe when it comes to decarbonization, according to the annual study, which is based on analysis of the costs of competing energy technologies. Renewables will more than double their contribution to the U.S. energy mix, to 43% in 2050, but will have to complete with abundant natural gas in a $1.1 trillion new energy capacity market.

Renewables are the big winner

Despite the prevalence of natural gas in the U.S., the *New Energy Outlook 2019* study predicts that as an energy source, gas will occupy roughly the same share of the market in 2050 as it does today, as will hydropower and nuclear. Oil will have disappeared as a source of energy by mid century, added the BNEF report, and coal – which supplies 37% of power generation today – will have been reduced to a 12% slice of the pie.

Renewables, helped by lithium-ion battery storage will fill the void, according to BNEF, with a rise from 7% of power generation today to 48% by 2050.

That is down to an estimation price reductions in solar, energy storage and wind technologies will continue at rates of 28%, 18% and 14%, respectively, for every doubling in installed capacity. If those predictions are borne out, renewables will supply and store more energy than coal and gas "almost everywhere" by 2030, stated the report.

The good news is that would ensure the world stays on track for global heating of less than two degrees Celsius by 2050 up to the year 2030, without the need for any new public money incentives for renewables in the next 15 years. Beyond that point, however, new technologies would be required as renewables could top out at contributing 80% of energy generation in many countries by 2050.

New solutions needed

That would mean innovations and alternative solutions such as nuclear, biogas-to-power, green hydrogen-to-power and carbon capture and storage would need to be rolled out after 2030, which in turn would require significant spending on R&D before that point.

One other requirement needed to keep us on track as far as 2030 would be for power markets to be reformed to correctly acknowledge, and reward, the role played by renewables and storage in helping the grid.

In a press release issued to publicize today's BNEF report – which also considers the potential carbon savings to be made in a world with fully electrified transport and building heating – the organization's head of energy economics Elena Giannakopoulou stated: "[The] NEO [*New Energy Outlook*] is fundamentally policy agnostic but it does assume that markets operate rationally and fairly to allow lowest cost providers to win."

Therein lies the rub, perhaps.

Renewable Power Generation Costs in 2018

Renewable energy has become an increasingly competitive way to meet new power generation needs. This comprehensive cost study from the International Renewable Energy Agency (IRENA) highlights the latest trends for each of the main renewable power technologies.

Released ahead of high-profile United Nations energy and climate discussions, Renewable Power Generation Costs in 2018draws on cost and auction price data from projects around the world.

Download the chart data

Costs from all commercially available renewable power generation technologies declined in 2018. The global weighted-average cost of electricity declined 26% year-on-year for concentrated solar power (CSP), followed by bioenergy (-14%),

solar photovoltaic (PV) and onshore wind (both -13%), hydropower (-12%), geothermal and offshore wind (both -1%),the report finds.

Continuing cost declines, meanwhile, underline renewable power as a low-cost climate and decarbonisation solution. Within IRENA's global database, over three-quarters of the onshore wind and four-fifths of the utility-scale solar PV project capacity due to be commissioned in 2020 should provide lower-priced electricity than the cheapest new coal-fired, oil or natural gas option, the report notes.

Among other findings:

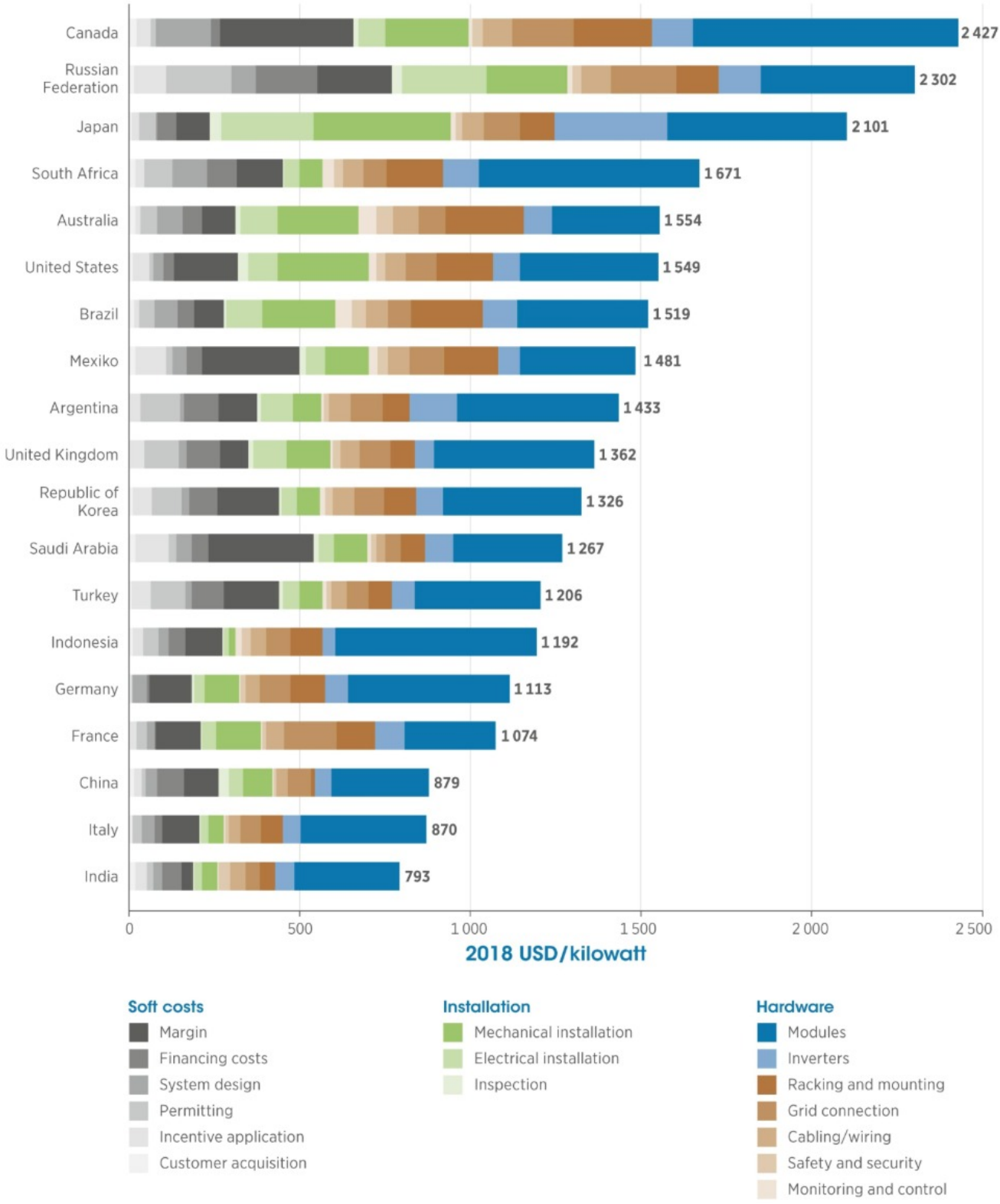
- Onshore wind and solar PV power are now, frequently, less expensive than any fossil-fuel option, without financial assistance.
- New solar and wind installations will increasingly undercut even the operating-only costs of existing coal-fired plants.
- Low and falling technology costs make renewables the competitive backbone of energy decarbonisation – a crucial climate goal.
- Cost forecasts for solar PV and onshore wind continue to be revised as new data emerges, with renewables consistently beating earlier expectations.

Along with reviewing cost trends, the report analyses cost components in detail. The report draws on IRENA's cost database of around 17 000 renewable power generation projects and 9 000 auction and power purchase agreements for renewable power.

Sample figure

Utility-scale solar PV:

Total installed costs in 2018 by component and country


Canada 2 427
Russian Federation 2 302
Japan 2 101
South Africa 1 671
Australia 1 554
United States 1 549
Brazil 1 519
Mexiko 1 481
Argentina 1 433
United Kingdom 1 362
Republic of Korea 1 326
Saudi Arabia 1 267
Turkey 1 206
Indonesia 1 192
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France 1 074
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2018 USD/kilowatt
Soft costs
Margin
Financing costs
System design
Permitting
Incentive application
Customer acquisition
Installation
Mechanical installation
Electrical installation
Inspection
Hardware
Modules
Inverters
Racking and mounting
Grid connection
Cabling/wiring
Safety and security
Monitoring and control

IEEFA report: Advances in electricity storage suggest rapid disruption of U.S. electricity sector

June 14, 2019 (IEEFA) – Momentum is gaining around an industry shift toward utility-scale battery storage systems nationally, finds a report published today by the Institute for Energy Economics and Financial Analysis (IEEFA).

The report – Advances in Electricity Storage Suggest Rapid Disruption of U.S. Electricity Sector –details upstart storage and storage-expansion projects in Arizona, California, Hawaii, Florida, Massachusetts, New Hampshire, Nevada, Texas, and Vermont.

Dennis Wamsted, an IEEFA editor/analyst and lead author of the report, said recent evidence of utility-scale storage adoption is most likely the beginning of a trend that will take hold broadly across the industry, benefitting renewables at the expense of gas- and coal-fired plants.

“Bigger changes loom,” Wamsted said. “In the many examples we researched, each project, by and large was driven by one of several value streams—cutting transmission charges, providing grid resilience, offering peak power, allowing for early plant closures and the like—even if other benefits were accrued too.”

The report details dozens of examples of electric companies large and small finding an assortment of cost savings in electricity-storage technology and portability.

“Installation is still tiny in terms of absolute numbers, but power storage is now ubiquitous and energy storage is no longer a pie-in-the sky proposition,” Wamsted said. “These changes are taking place today.”

Excerpts from the report:

- Battery storage in combination with solar can be used to facilitate closure of coal and natural gas plants currently being used largely for peaking or seasonal needs, as shown by the NV Energy decision to close the North Valmy coal plant in Nevada, and by Florida Power and Light’s’s plan to shut two aging natural gas units in Florida.
- Battery storage can be used to meet system peak needs, as SCE is doing in California in replacing the two-unit Mandalay natural gas peaker plant.
- Battery storage can be used to provide firm renewable power, as both Arizona Public Service and Hawaiian Electric are demonstrating with projects they have named, respectively, “Solar after Sunset” and “Renewable Dispatchable Generation.”
- Battery storage offers utilities significant opportunities to boost system resilience and cut costs at the same time, as is being demonstrated in a number of other projects highlighted in the report.
- Battery storage can be used to enable more residential

solar systems to be installed on local distribution lines without requiring potentially costly and time-consuming system upgrades, as can be seen in an existing program in Vermont and in one being proposed in New Hampshire.
- Battery storage can be used to improve the economics of existing utility-scale solar generation, as can be seen in the discussion about Vistra's battery storage retrofit at a Texas PV plant.

Wamsted said economies of scale will help drive the expansion of utility-scale battery storage, as will a growing recognition by utility companies of the business case for embracing the shift: "It is likely that developers and utilities will be able to stack these benefits, making storage even more economically competitive."

Full report: Advances in Electricity Storage Suggest Rapid Disruption of U.S. Electricity Sector

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About IEEFA

The Institute for Energy Economics and Financial Analysis (IEEFA) conducts global research and analyses on financial and economic issues related to energy and the environment. The Institute's mission is to accelerate the transition to a diverse, sustainable and profitable energy economy.