The Climate-Change Debate Has Shifted, Not Ended

Is there still a debate over climate change? Yes and no. As a scientific matter, the issues of whether it’s happening and who’s to blame are long settled. But there’s no end to debates about what to do about it. Arguments about the need for and costs of action are playing out against a nonstop, live-on-TV drama of the massive storms, record wildfires and deadly heat waves already fueled by global warming.

1. What’s new in the climate debate?

For one thing, there’s been a revolution in renewable energy. The price of wind and solar has plunged in a way even its most ardent backers wouldn’t have dared dream 20 years ago. Bloomberg NEF projects that by 2050, renewable power will produce two-thirds of the world’s electricity, the same fraction that fossil fuel produces today. The world’s biggest polluter, China, is taking far more aggressive action to reduce greenhouse gas emissions than was expected even a decade ago. A combination of slower economic growth and a drive for cleaner air have put China ahead of schedule for its emissions to peak by 2030.

2. How has the debate shifted?

There’s robust argument over how to balance the effort put into mitigation versus adaptation. Mitigation gets most of the attention — the headline news from the 2015 Paris climate accord, for instance, was about the pledges different countries made to limit the release of greenhouse gases. But adaptation is becoming a pressing need as temperatures rise. Some communities are already trying to relocate away from rising waters. Storm-surge barriers and flood gates geared to climate change have gone up in Rotterdam and Venice. New York installed gates after parts of the city were inundated by the surge driven by super storm Sandy in 2012, and Houston, flooded by Hurricane Harvey’s torrential rains in 2017, is considering new defenses. Even steps as small as providing air conditioners for the poor can play an important role in making cities livable in a hotter future.

3. What’s the status of the Paris agreement?

Even though President Donald Trump intends to pull the world’s biggest economy out of the accord, the U.S. is still participating in nuts and bolts discussions on implementing the voluntary pledges made by almost 200 countries. Coalitions of cities, states, businesses and universities in groups such as We Are Still In and America’s Pledge have organized to keep progress going in the U.S. even if the country formally leaves the pact. (America’s Pledge was co-founded by Michael R. Bloomberg, the founder and majority owner of Bloomberg LP, the parent company of Bloomberg News. He has told the New York

Times that he is considering a campaign for president.) The U.S. is currently seen as on track for its climate goals for 2020 but falling short of its longer-term pledges, as are the European Union and Japan, according to Climate Action Tracker, a research project.

4. What's Trump's argument?

Money. Trump said the Paris pact would hurt American workers and amounted to a "massive redistribution" of wealth from the U.S. to other countries. Meeting the Paris goals would conflict with his efforts to revive U.S. coal production. He's also moved to water down fuel-efficiency standards and proposed rolling back Obama-era regulations meant to force utilities to reduce emissions. Officials in his administration insist that U.S. economic growth is a more urgent priority than climate change.

5. Who's agreeing with him?

Influential groups of voters in countries where a shift away from dirty fuels has raised energy prices. In Australia, Malcolm Turnbull was pushed out as prime minister in August after conservatives in his party rebelled over his plan to write the country's Paris targets into law. Canadian Prime Minister Justin Trudeau in 2015 bowed to pressure to allow pipelines carrying carbon-heavy oil from tar sands to be expanded. Now his plan for a national carbon price to drive down emissions is under attack and is expected to be a focus for his opponents in 2019 elections.

6. How much would meaningful action cost?

It's hard to know, and there's a wide range of forecasts. The Deep Decarbonization Pathway Project, a research effort backed in part by a United Nations group, estimates that for 16 leading countries, meeting their Paris targets would require investments amounting to 0.8 percent of gross domestic product a year by 2020 and 1.3 percent by 2050. The International Finance Corporation has estimated that the Paris accord opened up $23 trillion in investment opportunities for government and private industry by 2030. BNEF projects that half that much will actually be spent. Developed nations have committed to boost climate-related aid to poorer countries to $100 billion a year by 2020, including money from both public and private sources.

7. What are the stakes?

Because the warming process is cumulative, if by some magic all greenhouse gas emissions stopped tomorrow, researchers predict we may still be in for 1.5 degrees Celsius (2.7 degrees Fahrenheit) of warming this century — three times as much as we've seen since the mid-1990s. Climate Interactive, a research non-profit, calculates that even if the Paris pledges are met, we'd blow past the target of holding warming to 2 degrees above mid-19th century levels. If current emissions levels aren't reduced, warming could gallop past 4 degrees. Studies have projected changes ranging from more kidney stones, smaller goats and less sex in the short run, to swamped cities and widespread extinction of species in the decades ahead.

Italian Alpine glacier close to collapse, officials warn

ROME: Part of a massive glacier on the Italian side of the Mont Blanc mountain range is close to collapse after accelerated melting in the late summer heat, officials at a nearby town warned Wednesday.

This is the latest of a series of warnings about melting glaciers — in the Alps and elsewhere — as concern grows about the effects of climate change.

The mayor of the town of Courmayeur has ordered a local access road closed at night and limited access to the region below the glacier, which is popular with tourists, a town spokesman told AFP.

Town spokesman Moreno Vignolini dismissed “apocalyptic” reports in the media that it was threatening to smash down on the town itself. Below the glacier, he said, “there are no homes, only a few unoccupied chalets”.

Part of the Planpincieux glacier in the Aosta Valley is in danger of crashing into a valley running parallel to the Courmayeur valley, said Vignolini. “With the strong heat this summer, there has been between August and the first half of September, an acceleration of the melting of the glacier, at an average rate of 35 centimetres (14 inches) a day, up to highs of 50-60 centimetres on some days,”

The chunk of the glacier concerned, which makes up between a fifth and a sixth of the total and weighs around 250,000 tonnes, was threatening to break away and crash down into the valley, he added.
“There is a problem with a part of the Planpincieux glacier located at Val Ferret, which is thought to be falling due to a large fracture between the, say, stable part of the glacier and this part,” the mayor of Courmayeur, Stefano Miserocchi, told AFP.
Late on Tuesday Miserocchi ordered the night-time closure of the access road to Val Ferret, on the Italian side of Mont Blanc.
He has banned walkers from the area below the glacier, which is popular with visitors and has three mountain refuges.
Experts at the Fondazione Montagna Sicura (Safe Mountain Foundation), who have been monitoring the glacier for the Val d’Aosta region since 2013, alerted local officials to the latest developments.
“This glacier is atypical because it’s temperate, and so is influenced by the temperature of the water flowing below, which particularly exposes it to the global warming in progress,” said the foundation’s secretary-general Jean Pierre Fosson.
But he cautioned against alarmism, stressing that the preventive measures taken so far were for an “unprecedented situation” for a glacier in the region.
While it might break off in a single block, it could just crumble away or not break away at all, he added.
The Foundation monitors 180 glaciers in the Val d’Aosta region and this kind of thing is unavoidable, said Fosson. “Every year we see two square kilometres (0.8 square miles) of ice disappear” he said. “And it is getting worse with the increasingly hot summers and autumns.”

According to a landmark assessment approved by the 195-nation Intergovernmental Panel on Climate Change (IPCC), accelerating melt-off from glaciers and Earth’s ice sheets atop Greenland

and Antarctica are driving sea level rise. Since 2005, the ocean has risen 2.5 times faster than during the 20th century, threatening island nations and coastal cities. The rate at which the waterline rises will quadruple again by 2100 if carbon emissions continue unabated, the report found. On Sunday, dozens of people dressed in black attended a symbolic funeral march on a Swiss mountainside to mark the disappearance of an Alpine glacier on Pizol mountain. A study by Swiss researchers released earlier this month suggested that the Aletsch glacier – the largest in the Alps – could disappear completely by the end of the century if nothing was done to rein in climate change.

EU states delay 'green' finance guide, leave it open to nuclear power

BRUSSELS (Reuters) – A set of European Union standards to determine which financial products qualify as “green” should be delayed until the end of 2022, EU governments agreed on Wednesday, stirring concern because the guidelines might end up including investments in nuclear power.

The delay, if confirmed by EU lawmakers, could slow the growth of the $200 billion market for green bonds, by pushing back clearer standards that many investors wanted. Proponents of green investment condemned the postponement.

“We don’t need to waste two more years,” said Luca Bonaccorsi, an activist with the Transport and Environment campaign group. Clearer standards were urgently needed to fund a sustainable economy, he said.

Deciding which investments could be called green was part of a legislative proposal put forward last year by the European Commission, the EU’s executive arm. Its goal was to encourage private investment in environmentally sustainable businesses.

The proposal laid out a taxonomy – a set of criteria and procedures for deciding what made an investment green – that was due to take effect in 2020. But many EU members objected, fearing damage to their national industries.

Diplomats agreed to postpone introduction of the taxonomy by more than two years. They also agreed to grant governments more powers to decide which investments are green, amending procedures proposed by the commission that would have given independent experts more say.

NUCLEAR CONCERNS

EU governments' compromise does not exclude any economic activity from being listed as green. That could pave the way for declaring as green investments meant to reduce the environmental impact of nuclear reactors or plants seen as highly polluting.

The decision runs counter to recommendations from an EU expert group, which had advised in June excluding nuclear and coal-fired plants from the EU taxonomy. Their environmental impact was seen as going against EU targets to cut carbon emissions and reduce hazardous waste.

The text agreed by EU governments needs the approval of the European Parliament, which also wanted to rule out nuclear and coal investments from projects deemed green.

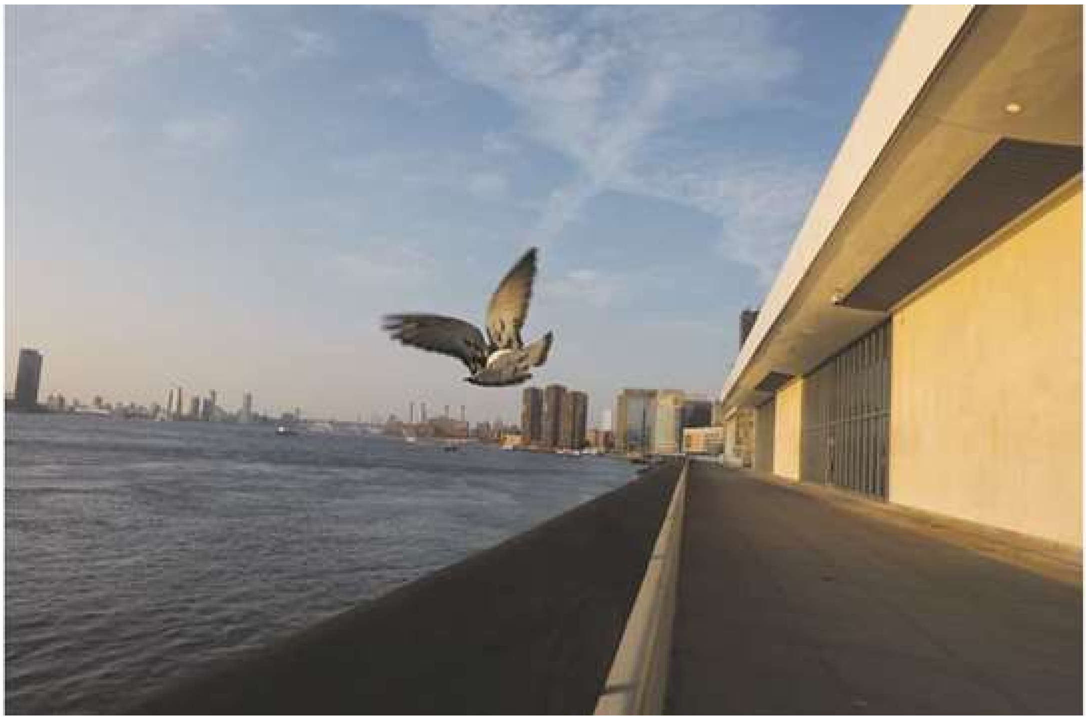
“This is a disaster,” Green European lawmaker Sven Giegold said. Parliament will do all it can to apply the new standards earlier and to exclude nuclear and polluting activities from the taxonomy, he said.

By setting criteria on what investment is sustainable, the EU hoped to avoid different standards in its 28 states and increase the confidence of climate-conscious investors. Proliferating standards let companies “greenwash” their activities, claiming green credential they not deserve.

However, the EU taxonomy's broad criteria could divert money to technologies that “cannot be considered either safe or sustainable,” Germany said in a statement appended to the compromise text and also signed by Austria and Luxembourg.

The compromise ignored those concerns and tried instead to allay opposing fears of countries such as France, which relies on nuclear energy, and eastern European nations, which still depend on coal.

Oil CEOs push carbon-capture efforts ahead of climate talks



Reuters/New York

A group of 13 major oil companies charted out a plan yesterday to promote investments in carbon capture, use and storage (CCUS), ahead of a gathering in New York.

Oil chiefs grappling with growing demand for action to fight climate change have looked to invest in carbon-capture and sequestration techniques that some executives, including Occidental Petroleum Corp CEO Vicki Hollub, say could make drilling carbon neutral.
With fossil fuel development growing worldwide, the oil and gas industry faces growing criticism from activists concerned about accelerating climate impacts from melting ice caps to sea-level rise and extreme weather.
Scientists say the world needs to halve greenhouse gas emissions over the next decade to avoid catastrophic warming.
Carbon sequestration technology traps carbon in caverns or porous spaces underground.
A number of oil and gas CEOs say the technology will be crucial to meeting goals set in the 2016 Paris agreement on climate change to reduce global emissions.
“A lot of people don’t even know what CCUS is. I think the world is going to hear more and more and more about it,” BP plc CEO Bob Dudley said. “I don’t think we can meet the Paris goals without CCUS.”
The group, known as the Oil and Gas Climate Initiative (OGCI), said it aims to double the amount of carbon dioxide stored globally by 2030.
The group is also taking steps to reduce methane emissions.
The group formed in 2014 to support efforts to reduce greenhouse gas emissions.
Its gathering will be held on the sidelines of a climate summit, where United Nations Secretary-General Antonio Guterres says he is banking on new pledges from governments and businesses to abandon fossil fuels.
Last Friday, millions of young people flooded the streets of cities around the world to demand urgent steps to stop climate change.
Many, including 16-year-old Swedish activist Greta Thunberg, have criticised governments and industries for not doing enough.
The OGCI group said in a statement that carbon-capture

technologies could be expanded to more efficiently trap large amounts of carbon released by facilities such as power plants, which could then be used in oil recovery and, ultimately stored – thus, removing it from the atmosphere.

The group plans to work with others to put carbon-capture techniques into operation in the US, UK, Norway, the Netherlands, and China.

Later yesterday, , it was set to sign a declaration of collaboration with certain energy ministers and other stakeholders, to commit to efforts to expand carbon storage.

The companies, which include Exxon Mobil Corp, Chevron Corp and BP, account for 32% of global oil and gas production.

They have agreed to cooperate to accelerate reduction of greenhouse gas emissions.

Separately, almost 90 big companies in sectors from food to cement to telecommunications are pledging to slash greenhouse gas emissions, organisers said.

Coal may outlive climate change but can’t survive the drought

Bloomberg/Vienna

Asia’s prolonged binge on coal is making the grids that transmit power to a third of the world’s people brittle and prone to failure.

That’s the conclusion of new research in the peer-reviewed journal Energy & Environmental Science.

More than 400 gigawatts of new coal-fired capacity in Asia are at risk as climate change dries out water sources necessary to cool those plants, according to the study.

“Coal power development can expect reduced reliability in many locations across Asia,” Edward Byers, one of the report’s authors, said by e-mail. “This is further evidence of coal power’s increasingly recognised incompatibility with current international and national climate and sustainable development policy.”

Summer heatwaves and reduced rainfall have been closing water-cooled power plants across the world as the impact of climate change exacerbates the nexus between water and energy supply. Asian utilities building coal plans could find themselves increasingly competing with industry and consumers for scarce water resources.

“This planned capacity adds 30% more to the existing coal-fired generation capacity, and will engender substantial water requirements and amounts of pollutants that can exacerbate global climate change and regional air pollution," the researchers wrote.

Thermal power generation could fall as much as 16% globally in the next three decades because of water shortages, they concluded. Researchers used hydrological and climate models as well as data from the Global Coal Plant Tracker to reach their conclusions. Different warming scenarios ranging to as high as 3 degrees Celsius (5.4 Fahrenheit) were considered. The world is currently on a warming trajectory that may hit 5 degree Celsius by the end of the century.

Bearish signal for crude as China closes in on filling oil storage

One of the fascinating tidbits to come to light in the wake of the attacks on Saudi Arabia’s crude facilities was China’s disclosure that it has enough oil inventories to last 80 days. There isn’t too much short-term significance in this, other than to confirm that China probably won’t be frantic to find replacements for any loss of imports from Saudi Arabia.

But the information is vitally important from a medium to longer term view of the crude oil markets.

China’s strategic petroleum reserve (SPR) is largely shrouded in mystery, with no official disclosure of the actual level of inventories in the world’s largest crude importer.

It likely surprised the market, however, that Beijing is quite close to the 90 days of import cover recommended by the International Energy Agency (IEA) as the level of reserves that importing nations should hold.

Earlier this year it was estimated by some analysts that China had around 40 to 50 days of import cover.

The figure of 80 days of crude oil in both commercial and strategic storage was released on Sept. 20 by Li Fulong, the head of development and planning at the National Energy Administration.

While Li didn’t disclose the exact amount of stored crude, it is likely to be around 788 million barrels, based on taking the average daily imports of 9.85 million barrels per day (bpd) for the first eight months of 2019.

The last time inventories were officially acknowledged was in December 2017, when it was disclosed that reserves as of end-June 2017 were 277 million barrels.

This implies that from July 2017 to Sept. 20 this year, China added 511 million barrels of crude, about 630,000 bpd.

It would also seem that the rate of stock building has been accelerating in 2019, if the difference between the total crude processed at China’s refineries and the amount of crude available from both imports and domestic output is calculated.

Domestic output in the first eight months of 2019 was 3.83 million bpd and imports were 9.85 million bpd, giving a combined total of 13.68 million bpd.

Refinery throughput for the same period was 12.74 million bpd, implying that about 940,000 bpd went into either commercial or strategic stocks.

If China does conclude its stockpiling at 90 days of import cover, the implication is that it has about 98.5 million barrels still to go.

At a 940,000 bpd rate, this further implies that the filling of China’s storage could be finished in about 105 days.

There is no guarantee, of course, that China will continue to build inventories at the same clip it has been, or indeed that it will stop at 90 days worth of import cover.

But the risk for the global crude market is that sometime in the next six months, and possibly earlier, China may dial back the amount of crude it is buying for storage.

Mining industry seeks to polish tarnished reputation

The global mining industry is increasingly showing a commitment towards greater respect for human rights and the environment, but is accused of wanting to improve its reputation without seeking real progress.

Wildcat miners, including children, are risking their lives daily to unearth metals and minerals they sell to mining companies. In return, they earn a subsistence wage but not the working rights of a legal and salaried mining group employee.

“While industry initiatives on certain minerals and metals are helpful, companies are still responsible for undertaking comprehensive human rights due diligence across all minerals and metals in their supply chains," Eniko Horvath, senior researcher at the Business and Human Rights Resource Centre (BHRRC), told AFP.

In June, dozens of illegal miners died when part of a copper mine collapsed in southeastern DR Congo. The mine was in the Kolwezi area operated by Kamoto Copper Company, a subsidiary of the Swiss giant Glencore.
Meanwhile at the start of the year, a dam collapse at a mine operated by Brazilian group Vale unleashed a tsunami of mud that killed more than 200 people while around 100 more went missing.

China, also the scene of fatal mining accidents, has additionally been in the spotlight for its dumping of toxic waste in Baotou, Inner Mongolia, as Beijing drives global production of rare earth elements used in key technologies such as smartphones.

Faced with rising criticism, the mining industry says it wants to adopt standards of good governance.

The London Metal Exchange, the global centre for trading in industrial metals, recently adopted new ethical standards to ensure better traceability of raw materials, especially those most at risk such as cobalt used heavily in high-end technology.

"As metals play an increasingly important role in society with increased focus on ethical supply chains, the LME's role and responsibility is vital," the exchange's incoming and first female chair Gay Huey Evans said on her appointment.

Earlier this month, the World Gold Council (WGC) issued "Responsible Gold Mining Principles", although the guidance is non-binding.

The industry body calls upon its members to "respect the human rights” of workers and communities affected by mining activities.

“We will work to ensure that fragile ecosystems, critical habitats and endangered species are protected from damage and we will plan for responsible mine closure,” according to another directive.

A spokesman for Barrick Gold, the world’s largest producer of the precious metal, told AFP that the group was already meeting or exceeding the new WGC guidance, while Glencore has laid out a similar charter to that provided by the World Gold Council.

Elsewhere, BMW along with German chemical giant BASF and Samsung last week announced a joint project to ensure “responsible” cobalt mining in DR Congo.

“It’s great to see these statements of purpose and expressions of a willingness to meet these standards, but they have to be matched with action,” Amnesty International official Lucy Graham told AFP.

“What we really want to see is laws that are going to legally require industry to mine minerals responsibly and transparently.”

Jamie Kneen, from MiningWatch Canada, said he believed companies and industry bodies were simply providing “yet another effort at PR whitewash”.

He added: “The standards that they are incorporating are… self-administered and audited by unaccountable third parties; and they are explicitly focused on providing confidence to investors and buyers with not even a mention of host or affected communities.”

Kneen said there was a need for “enforceable… legal and regulatory standards at all levels”.

To help companies face their responsibilities, human rights group BHRRC has this month launched a dedicated website, the Transition Minerals Tracker.

It "seeks to improve the human rights practices of companies that produce the minerals vital to the renewable energy and electric vehicles sectors, by shedding light on the key human rights risks in the geographies where they operate", noted Horvath.

Tellurian signs $7.5bn agreement with India's Petronet for US LNG

Tellurian Inc. said it signed a $7.5 billion agreement for

India’s Petronet LNG Ltd. to buy into its proposed liquefied natural gas terminal in Louisiana, in what could potentially be one of the largest foreign investments in the U.S. to ship shale gas abroad.

Petronet will spend $2.5 billion for an 18% equity stake in the $28 billion Driftwood LNG terminal — the largest outside holding so far in the project — and negotiate the purchase of 5 million tons of gas per annum. The remainder of the total will come from debt, Tellurian Chief Executive Officer Meg Gentle said.

The companies plan to complete the accord by March 31, by which time Tellurian hopes to have signed up partners to enable it to proceed with the project.

“We will sign the document sometime in the first quarter and we will have financing ready to close simultaneously, and then we will begin construction,” Gentle said in a telephone interview. “India is one of the fastest growth markets for LNG and should soon become the second-largest LNG importer.”

The deal, signed in Houston in the presence of Indian Prime Minister Narendra Modi, underscores a record year for the LNG industry, with tens of billions of dollars worth of export projects given the green light. The surge of new supply from America’s trove of shale gas has rendered the once-premium fuel accessible for emerging markets such as India, currently the sixth-largest buyer of U.S. LNG.

“People should not be surprised this came,” said Tellurian co-founder Charif Souki, who also started America’s largest LNG exporter Cheniere Energy Inc. “The United States and India have a significant issue diametrically opposed. We have too much gas that we don’t know what to do with and India needs greater gas, and 1 million tons a time is not going to solve the problem.”

The Petronet deal, the largest by an Indian company in U.S.

LNG, comes days after the gas industry’s all-important GasTech conference and coincides with Modi’s much-anticipated visit to Texas. He’s set to take the podium at Houston’s NRG Stadium with President Trump on Sunday and address a crowd of more than 50,000.

“This deal will further help diversify India’s energy supplies,” said Lydia Powell, who runs the Centre for Resources Management at the New Delhi-based Observer Research Foundation think tank. “The U.S. wants to displace Middle East supplies and India is a large market.”

Petronet’s investment is vying to be the largest by a foreign entity with one that Sempra Energy expects to finalize in Texas with Saudi Aramco.

Tellurian expects to finalize the last 4 million tons needed for Driftwood’s first phase with one or two partners in the coming months, Gentle said. Petronet’s share represents about $2 billion in annual fuel sales for the life of Driftwood, she said.

“It supports the drilling industry and the pipeline industry, and there is going to be an enormous amount of resources,” Souki said.

The world’s biggest offshore wind farm could be cheaper than coal

The world’s biggest offshore wind park planned off the coast of England will probably in the next decade generate power more cheaply than by burning coal.

A number of offshore wind projects won contracts to sell power at guaranteed prices in a UK auction Friday. The price of 39.65 pounds per megawatt-hour (around R740) was 31% below the level in a similar auction two years ago.

The plunge highlights how offshore wind, which only a few years ago was a niche technology more expensive than nuclear reactors, is changing the economics of energy around the world. Both utilities and, increasingly, energy majors, are planning to spend $448 billion through 2030 on an eightfold capacity increase, according to BloombergNEF.

Projects from developers including SSE Plc, Equinor ASA and Innogy SE won offshore wind power-purchase contracts that will have the capacity to generate as much as 5.5 gigawatts of power, the government said. That includes a joint SSE-Equinor project off England’s east coast to build the biggest single offshore wind park in the world.

“The auction results today show offshore wind is in line with current power prices – it is already competitive with existing fossil fuel plants, let alone new fossil fuels,” said Deepa Venkateswaran, an analyst at Sanford C. Bernstein & Co. in London. “In the next auction in 2021 we will see costs go well below that of existing fossil fuel plants.”

One of the winning areas, known as Dogger Bank, is off the coast of Yorkshire. Three projects by Equinor and SSE were approved in the zone for a total generation of 3.6 gigawatts. Another 1.4 gigawatt project developed by Innogy was also approved in the same area.

Key step

Equinor’s success at the auction is a key step in its transition to becoming a broader energy company than just an oil and gas major. The state-controlled Norwegian company has a target of investing as much as 20% of its capital in new energy solutions by 2030.

“Dogger Bank, together with the recent award for Empire Wind in the US, positions Equinor as an offshore wind major,” said Pal Eitrheim, Equinor’s executive vice president for new energy solutions. “These projects provide economies of scale and synergies, making us an even stronger competitive force in offshore wind globally.”

SSE winning capacity will accelerate its shift away from a traditional utility to an energy company focused on renewable power and grids. The Scottish company has agreed to sell its UK domestic supply business to Ovo Energy.

The agreements give the projects a guaranteed buyer through what’s known as a contracts-for-difference mechanism. If the wholesale rate is lower than the set price, the government pays the developer the difference. If it’s higher, the company pays it back. UK month-ahead power is trading at 42.05 pounds per megawatt-hour, down 34% this year.

Even as wind power moves away from a reliance on government subsidies, the contracts could still play an important role going forward. The guarantee helps developers secure financing and also make the assets more attractive to institutional investors who want reliable returns. The next UK auction round is set to take place in 2021.

The Crown Estate said Thursday it plans to open the first contest in a decade for sites around the British coast that could draw as much as 20 billion pounds of investment in offshore wind.

For sale

The contracts also open up a track for investors to take stakes in some of these projects. Earlier this year, Iberdrola sold a stake in its 714-megawatt East Anglia One project to Macquarie Group Ltd. for 1.63 billion pounds (R30bn). Projects that have the backing of government-supported purchase agreements are often more attractive to investors who favor the guaranteed prices.

Innogy will likely sell a stake in it 1.4 gigawatt Sofia Offshore Wind Farm development in the Dogger Bank Area, according to Richard Sandford, the company's director of offshore investment and asset management. The company hasn't decided how big of a stake it will sell, but plans to make a final decision sometime next year. SSE also said it will look to sell equity in a 454-megawatt project in Scotland that it won a contract for in the auction.

Cheap US gas is killing nuclear; green power may finish the job

The natural gas boom is killing America’s nuclear industry. Wind and solar may finish the job.

While nuclear plants struggle to compete with the flood of cheap gas coming from the nation’s shale fields, they still offer a key advantage, supporters say: They generate 24-hour electricity without producing carbon emissions. Renewables, meanwhile, haven’t yet nailed down the storage capacity needed to do that. Proponents insist it’s only a matter of time.

Battery prices have plunged 85% from 2010 through 2018, and huge storage plants are planned in California and Arizona. Meanwhile, science is advancing on new technology — including chemical alternatives to lithium-ion systems — with the potential to supply power for 100 hours straight, sun or no sun.

All signs point to the acceleration of renewable energy that can out-compete nuclear and fossil fuels,” said Jodie Van Horn, director of the Sierra Club’s Ready for 100 campaign, a group seeking a grid powered solely by renewables.

The drive for grids that are 100% emissions-free is being pushed by a growing number of U.S. states citing increasingly aggressive time frames. In July, New York mandated that 70% of the state’s power come from renewables by 2030, and 100% by 2040. Seven other states, including California, have similar mandates, and Virginia’s governor earlier this month announced an executive order calling for 100% clean energy there by 2050.

Still, there remains a gap between now and 2050. “To get to 80%-to-85%, you can see a path to get there with today’s technologies,” said Yayoi Sekine, an analyst with BloombergNEF. But using renewables to achieve the final 15%, “that’s where the challenge really is.”

By 2050, BNEF expects renewables to account for 48% of the U.S. power system, paired with multiple types of supplemental, peaking plants that can supply electricity when needed.

Today, these plants typically burn cheap gas, supplied by a muscled-up U.S. shale industry. By 2035, though, so-called battery peakers — large arrays that store energy when renewables are working at their peak, and send power when they’re not — will be more cost-competitive, according to BNEF forecasts. Meanwhile, over the same period, nuclear will wane, as high costs force most reactors to just shut down.

The U.S. isn’t the only place where the nuclear industry is struggling. Some nations that rely heavily on the technology, including France and Sweden, are reducing nuclear’s load as old reactors retire, and diversifying into cheaper solar and wind power.

Still, the industry has the potential to grow in countries where costs can be reduced through shorter construction times. Engineers in China have been able to build and connect nuclear plants in less than seven years, on average, while their counterparts in the U.S. and Europe need a decade or more.