

Norway vows to keep pumping gas as prices fall



Europe's second-largest gas supplier plans to keep pumping natural gas even after prices dropped to their lowest in more than a decade. The region's benchmark slid 50% in the past year after a mild winter left inventories brimming and more cargoes of liquefied natural gas flooded the market. Yet that's not putting off Equinor ASA, the Norwegian state-owned producer, which delivers about a fifth of the European Union's pipeline gas imports. "If someone is hoping for supply relief coming from Norway, we will have to disappoint them," Tor Martin Anfinnsen, the state-owned company's senior vice-

president for marketing and trading, said in an interview in Essen, Germany. "We will be the last ones to turn off the taps. We are far away from reducing flows." The unwillingness to cut flows may seem surprising, considering that Equinor is one of the most exposed oil companies to European and US spot natural gas prices, according to Sanford C Bernstein & Co, which sees the company's gas earnings fall by about €300mn (\$326mn) in 2020 if prices don't change from current levels. But both Equinor and its larger Russian rival Gazprom PJSC may be focusing on preserving market share as competition heats among LNG suppliers. Equinor's gas production "is very cost-competitive," Anfinnsen said. The company said it continues its normal practice, which is to optimize prompt versus forward markets according to demand signals within the flexibility limits under its license permits. Norway's pipeline exports of natural gas to continental Europe and the UK fell to 107bn cubic meters in 2019 from 114bn cubic meters the year before as Equinor and other producers choose to hold back volumes amid the bad market conditions, according to Norwegian Petroleum Directorate. Benchmark next-month gas in the Netherlands has dropped to about €8.70 a megawatt-hour (\$2.75 a million British thermal units), the lowest since August 2009. Norway's marginal production cost is about €6 a megawatt-hour and Russia's is around €8, according to six traders and analysts consulted by Bloomberg since Tuesday at the E-World conference in Essen, Germany. "Even if prices achieve levels below Norway and Russia's marginal cost of production, these countries usually have long-term strategies for gas supply," Frank van Doorn, head of trading at Sweden's Vattenfall AB, said in an interview in Essen. "I am not sure if they would have a quick answer to low prices." Even the coronavirus may weigh down on European gas if more Chinese buyers declare force majeure on LNG supplies, leaving the potential for increased imports of the chilled fuel into the region, van Doorn said. "It is hard to find a bullish factor for natural gas right now," he said. "It can take more than two years until we see an upside move."

Focus on Exxon, Chevron after BP pledges to be carbon neutral



BP's pledge to zero out all its carbon emissions by 2050 deepens the divide between major European and American oil producers on climate change, increasing the pressure for Exxon Mobil Corp. and Chevron Corp. to do more.

The U.S. giants have committed only to reducing greenhouse gases from their own operations. On Wednesday, BP followed Royal Dutch Shell and Equinor in pledging to offset the carbon emissions from the fuels they sell. Known as Scope 3, the emissions from cars, homes and factories are responsible for 90% of fossil fuel pollution.

"If we do see capital flowing into BP, that may force the U.S. majors to rethink the speed at which they move on carbon reduction targets," said Noah Barrett, a Denver-based energy

analyst at Janus Henderson, which manages \$356 billion.

The growing outcry against human-made global warming is increasingly making its way into mainstream business and investment strategies. It has already reshaped the way European oil producers operate by actively engaging in the transition to cleaner energy sources.

Exxon and Chevron agree with the goals of the Paris Climate Agreement, support a carbon tax and are committed to cleaning up emissions from their vast network of wells, refineries and pipelines. They joined the Oil and Gas Climate Initiative later than their European rivals but are still fully paid-up members. They even lobbied against President Trump's plan to roll back Obama-era emission standards.

But the fundamental difference with European peers is that neither has any plan to allocate a chunk of their multibillion-dollar capital budgets toward proven low-carbon energy sources where they have no competitive advantage. The chief executives of both companies said last year that they remain committed to their core oil and gas businesses and have no plans to chase the crowd into lower-margin renewables such as wind and solar.

That puts them in an increasingly isolated position when compared with BP and Shell, whose executives have vowed to lead the energy transition.

BP went further than any other oil giant by pledging to become net zero, meaning it's aiming to completely offset its emissions with renewable energy. Spain's Repsol recently made a similar commitment.

Even so, environmentalists shouldn't get their hopes up. "I don't see Chevron or Exxon adopting a BP-like strategy in the near future," Janus' Barrett said. "The U.S. majors have historically been less aggressive in their shift away from traditional oil and gas."

When asked about potentially following Shell into the power sector, Chevron CEO Mike Wirth was clear.

“It’s a business we haven’t chosen to go in,” he said in a February 2019 interview. “And it’s inherently lower-return than the other things we could invest money in.”

Chevron is investing in early-stage technologies that could aid carbon capture and energy storage, but they are small fraction of its budget.

Effectively reducing Scope 3 emissions requires a combination of well-designed policies and carbon pricing mechanisms, Chevron said in a response to questions. Exxon said Scope 3 emissions are not within its direct control, but rather a function of energy demand and consumer choices.

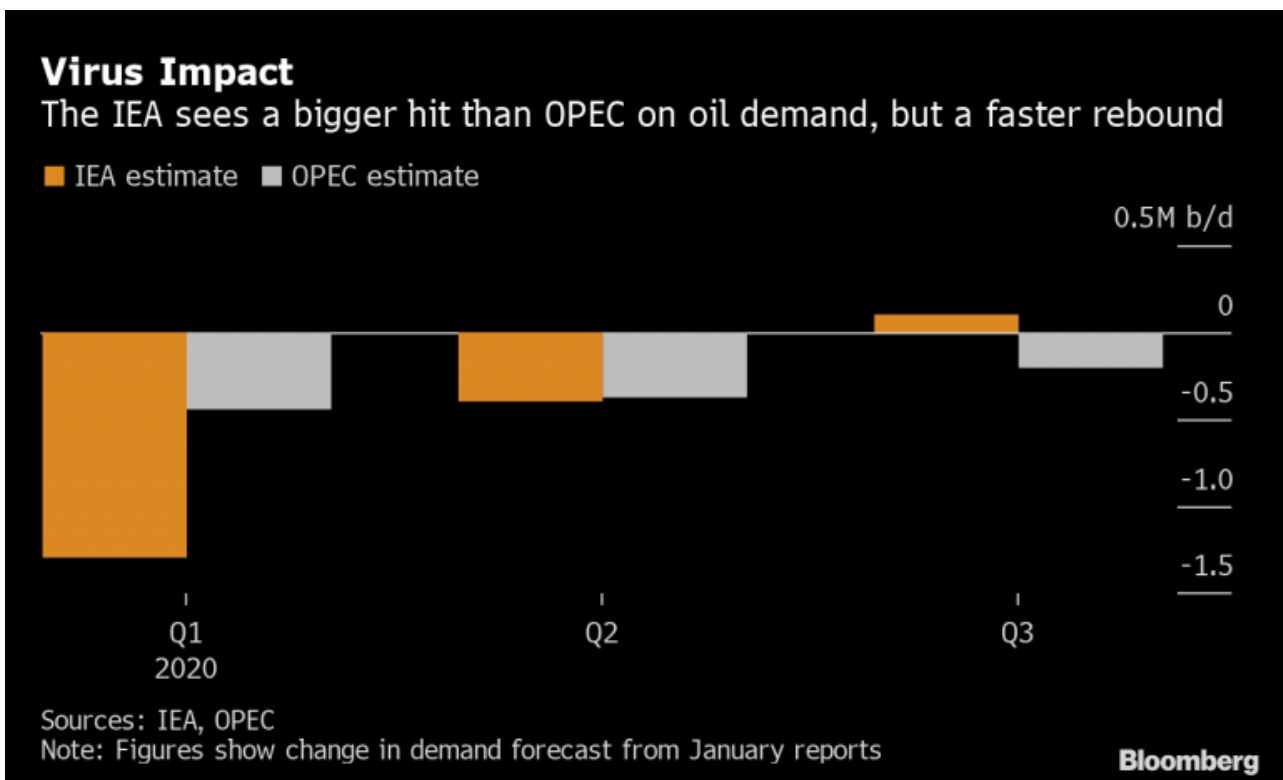
Exxon CEO Darren Woods sees the answer to climate change as essentially a technology problem that has not yet been solved.

The oil giant is working on proprietary technologies that would reduce emissions in areas such as aviation, heavy-duty vehicles and industrial processes. “We can bring more value in the space where we don’t know what the solution is but we need one,” Woods said in an April interview.

This approach probably will come under attack at this year’s round of annual general meetings in May. Both companies are being asked by Dutch activist shareholder group Follow This to align their strategies with the Paris agreement. Exxon is asking the Securities and Exchange Commission to exclude the proposal from the ballot, arguing it “seeks to micromanage” the company.

Chevron shares rose 0.7% on Wednesday. Exxon shares climbed 1.2%.

IEA sees first global oil demand drop in a decade on coronavirus



Global oil demand will drop this quarter for the first time in over a decade as the coronavirus batters China's economy, the International Energy Agency said.

The agency said that the consequences of the outbreak for oil demand "will be significant."

The new estimates show that oil markets face a major surplus despite the latest production cuts by OPEC and its partners. The impact of the epidemic will be felt throughout the year, the agency said.

"Demand has been hit hard by the novel coronavirus and the widespread shutdown of China's economy," the Paris-based IEA

said. "The crisis is ongoing and at this stage it is hard to be precise about the impact."

World fuel consumption – which had previously been expected to grow by 800,000 barrels a day during the three-month period, compared with a year earlier – will instead contract by 435,000 a day, the IEA said in its monthly oil market report.

For 2020 as a whole, the virus will curb annual growth in global consumption by about 30%, to 825,000 barrels a day, the lowest since 2011. The effects will be more significant than those of the 2003 SARS epidemic because of China's increased importance and integration within the world economy.

The outbreak has shuttered businesses and prompted the quarantine of tens of millions of people in China, which imports the most crude in the world. The country accounted for about 75% of last year's oil-demand growth, according to the IEA, which advises most major economies.

U.S. crude futures have fallen 17% this year as traders assessed the impact of the epidemic. Consumers are unlikely to benefit from the drop in fuel prices because the disease will inflict damage on the wider economy, the IEA said.

The outbreak has prompted Saudi Arabia, the world's largest oil exporter, to push its allies in the Organization of Petroleum Exporting Countries and beyond to consider an emergency meeting and further production cuts. However, Russia, the kingdom's most important partner in managing supplies, has so far resisted the initiative.

Even though the group launched new supply curbs at the start of this year, the slump in demand threatens markets with a surplus of about 1.7 million barrels a day during the first quarter and 560,000 in the second. Last month, OPEC was already pumping the least crude since the financial crisis of 2009, according to the IEA.

The OPEC+ alliance had already faced an oversupply in the first half of 2020 because of the ongoing output surge from

U.S. shale-oil drillers, the agency said. That industry is likely to remain resilient against the price slump until later in the year, it predicted.

Given the abundance of supply, disruptions in OPEC members such as Libya and Nigeria are having little impact on prices, the agency said.

France's Total rejects force majeure notice from Chinese LNG buyer



ABERDEEN/SINGAPORE (Reuters) – French oil major Total rejected a force majeure notice from a liquefied natural gas (LNG) buyer in China, the first global energy supplier to push back

publicly against a firm trying to back out of a contract amid the coronavirus outbreak.

The move by the Chinese buyer is likely to increase concerns that Chinese importers, or even exporters of product parts to global firms, could use force majeure certificates to get out of long-term contracts, trade sources said.

Companies invoke force majeure when they cannot meet their contractual obligations because of circumstances beyond their control.

The effect is being felt in the spot crude oil and LNG market as sales have slowed into China, the world's top energy consumer, increasing supplies and depressing energy prices.

Last week, a Chinese international trade promotion agency said it would offer force majeure certificates to companies struggling with the epidemic to give to their overseas partners.

So far, most of the applications for the certificates had been from Chinese exporters, although there were a few inquiries from importers, a source familiar the matter said.

The outbreak, which has claimed more than 630 lives and infected over 31,000 people, has forced companies to shut factories and stores across China and led to flight cancellations as governments and firms curb travel.

"Some Chinese customers, at least one, are trying to use the coronavirus to say I have force majeure," Philippe Sauquet, head of Total's gas, renewables and power segment, said on Thursday.

"We have received one force majeure that we have rejected."

Sauquet did not disclose the name of the buyer.

Total has about 10 LNG cargoes due to land in China this month

and at risk of force majeure, according to a person familiar with the matter. Among 35 LNG tankers scheduled to land this month, Royal Dutch Shell and Qatargas, a unit of Qatar Petroleum, also have large Chinese exposures, the person said.

Total, Shell and Qatargas did not immediately reply to requests for comment on the cargoes at risk.

China National Offshore Oil Corporation (CNOOC), which sources said is among Total's biggest LNG customers, declared force majeure on some prompt deliveries with at least three suppliers, Reuters reported on Thursday.

CNOOC did not respond to a request for comment.

"This rift has the potential to become quite ugly because of the contractual precedent it threatens to set," said Ira Joseph, head of global gas and power analytics at S&P Global Platts.

Guangxi Nanguo Copper, a smelter in Southwest China, on Friday also declared force majeure on copper concentrate shipments, two sources briefed on the matter told Reuters.

MISUSE?

Prices of LNG supplied from long-term contracts are currently more than double the cost of spot cargoes.

Chinese companies including CNOOC were offering to resell LNG cargoes in the spot market even before the outbreak, as they struggled to shift high inventory amid weak demand due to a slowing economy and a milder winter.

"There is a strong temptation from some long-term customers to try to play with the force majeure concept," Total's Sauquet said. "To say I cannot take my cargo under the long-term contract, but I would like to buy spot is contradictory."

LNG contracts are typically governed by English law which

spell out events constituting a force majeure and some may include the epidemic clause, lawyers told Reuters. Serving the force majeure notice is the first step in a drawn out process, they said.

Also, the onus to demonstrate a force majeure is on buyers to prove that they are not physically able to receive the cargo. For instance, if there are port closures or if workers are unable to get to the ports due to the virus.

“Force majeure is usually aimed at dealing with events such as unforeseen operational outages, rather than changes in broader economic circumstances, such as LNG demand or exchange rates,” said Rob Patterson, partner at law firm Haynes and Boone.

Commodity chaos deepens as China LNG buyer invokes force majeure

SINGAPORE: The turmoil engulfing global commodity markets deepened as China's biggest buyer of liquefied natural gas (LNG) told suppliers it won't honour some contracts because of the coronavirus.

In a dramatic and rare step, China National Offshore Oil Corp (CNOOC) declared what's known as force majeure, meaning it won't take delivery of some LNG cargoes, because the virus is constraining its ability to import the fuel. It's among the first known cases of the legal clause being invoked in commodity contracts as a result of the epidemic.

While global markets bounce back from initial fears over the

impact of the virus, CNOOC's move shows the fallout is only deepening in the world of raw materials, which is dominated by China's enormous appetite. Beijing's efforts to contain the disease by shutting down swathes of the country and restricting travel are disrupting supply chains and hammering demand in the world's biggest consumer.

The impact is reverberating around the world. Copper buyers are requesting Chilean miners postpone shipments because of port shutdowns while China's biggest oil refiner, Sinopec Group, is likely to ask Saudi Arabia to reduce supplies of crude oil next month. Soybeans from Brazil and the United States are being held up on arrival in eastern China and Indonesian palm oil shipments are also being delayed.

For LNG, CNOOC's force majeure hurts a market already buffeted by rising US supplies and weak demand after a mild winter in Europe and Asia. Even before Chinese buyers walked away from supply contracts, spot prices have fallen to a record low, crippling the profitability of energy giants like Royal Dutch Shell Plc and Exxon Mobil Corp.

CNOOC sent the force majeure notice to suppliers including Shell and Total SA, according to people familiar with the matter, who asked not to be identified because the matter is confidential. Shell declined to comment while Total's press office didn't respond to a request for comment. The French company's chief executive said he hadn't received the force majeure notice.

China said last week that it would offer support to companies seeking to declare force majeure on international contracts. The clause allows a company to opt out of obligations without legal recourse because of reasons beyond its control.

CNOOC isn't the only Chinese LNG buyer affected. The country's largest oil and gas firm, PetroChina Co, was forced to delay discharge timings for multiple cargoes because it can't get

enough workers to its Rudong, Dalian and Caofeidian LNG terminals to run them at full capacity. The company hasn't invoked force majeure because of the delays. – Bloomberg

Europe's top economies falter as new virus clouds outlook



Tumbling industrial production in Germany and France in December rounded off a year blighted by trade war tensions for Europe's top economies, official data showed Friday, while the novel coronavirus outbreak threatens hopes of a 2020 revival. Growth in both nations sputtered in 2019, with output actually shrinking for Germany in the April-June quarter and for France in October-December.

German growth overall slowed from 1.5 percent in 2018 to just 0.6 percent in 2019, according to preliminary data, while France did better but still slipped from 1.7 to 1.2 percent.

In December, manufacturing output was down 3.5 percent month-on-month in Germany and off 2.8 percent in its western neighbour.

In Germany, “there are very few positive elements to find in the December industrial data,” ING bank economist Carsten Brzeski said, adding that the figures point to Europe’s top economy having shrunk in the fourth quarter.

In the final months of last year, there was still widespread uncertainty about whether the US and China would bury the trade hatchet, after months of tough negotiations and tit-for-tat tariffs.

Figures released Friday showed Germany’s trade surplus – the amount exports outweigh imports – shrank slightly from 228 billion euros (\$250 billion) in 2018 to 224 billion euros in 2019.

The US and China last month signed a “phase one” trade pact, designed to ease the commercial tensions whose knock-on effects last year battered European manufacturers. Meanwhile Britain’s departure from the European Union – pushing the risk of a fresh “no deal” cliff-edge back to December – also helped brighten the mood.

More positive “soft” indicators like German business sentiment surveys in Germany have prompted some analysts to see clearer skies ahead for manufacturers.

Despite December’s data, “forward-looking indicators continue to point to a modest cyclical rebound in the near term,” said Frederik Ducrozet, strategist at Pictet Wealth Management.

With Brexit and trade tensions less prominent for now, two of

the main risks to growth cited by institutions like the European Central Bank have ebbed. Against that backdrop, “the coronavirus comes at a particularly bad moment,” BNP Paribas analyst William de Vijlder said.

“The global economy was showing tentative signs of a growth pick-up and, in all likelihood, this momentum will now be stopped or even reversed”.

Global efforts to contain the coronavirus will likely brake activity at companies around the world for whom China is a vital link in global supply chains – including Germany’s massive car industry.

Given that, “we doubt this will be the last of the run of negative quarters,” said analyst Andrew Kenningham of Capital Economics.

There is also little prospect that the ECB will step in to shore up growth by further opening the money sluices, analysts said.

Policymakers are already divided over its unprecedented low and negative interest rates and “quantitative easing” (QE) bond-buying scheme, and the bank has just kicked off a year-long rethink of its strategy and goals.

Low rates and meagre inflation have “significantly reduced the scope for the ECB and other central banks worldwide to ease monetary policy,” ECB president Christine Lagarde told European Parliament lawmakers in Brussels Thursday.

Instead, governments should use tax and spending changes to buttress their economies where they can, she said.

In the ECB’s assessment of the eurozone economy, “the balance of risks to the outlook will likely remain tilted to the downside until the effects of the coronavirus are better known,” Pictet economist Ducrozet said.

That “may prompt a more cautious tone from the ECB” when policymakers meet next month, he added.

Russia says it needs time to decide on oil output cuts



MINERALNYE VODY/MOSCOW, Russia, Feb 7 (Reuters) – Russia said on Friday it needed more time to decide whether to join any additional oil output cuts by OPEC, saying U.S. crude production growth would slow and global demand remained solid.

Energy Minister Alexander Novak was speaking as the Organization of the Petroleum Exporting Countries pushes Moscow to make a decision on whether to cut output more in response to the coronavirus outbreak that has hit the global economy.

A technical panel that advises OPEC and its allies, led by Russia – a grouping known as OPEC+ – proposed on Thursday a

provisional cut of 600,000 barrels per day (bpd), three sources told Reuters.

Producers in OPEC+ are scheduled to meet in Vienna on March 5-6, although the meeting could be brought forward depending on how the coronavirus outbreak affects oil prices.

Novak said Moscow needed more time to assess the situation, stopping short of giving a clear Russian position on the proposal. Oil prices have come under pressure recently in the absence of a Russian response to calls for more output cuts.

"I can't tell you about my position right now, maybe we will say it next week," Novak said when asked about Moscow's position. "Russia needs a few days for market analysis."

Crude prices fell on Friday following Novak's comments. They had rallied earlier on remarks from Russian Foreign Minister Sergei Lavrov that were initially seen as being more upbeat about the proposal to cut output.

Speaking at a news conference in Mexico City on Thursday, Lavrov said via interpreters that Moscow supported "the idea", when asked about the proposal.

However, a foreign ministry transcript of his comments suggested he was speaking in general terms.

Lavrov was asked: "Is Russia planning to support the call by OPEC+ to cut oil production, as was suggested at a recent emergency meeting?"

He replied: "We are actively supporting cooperation within the framework of OPEC+ and collaboration between oil exporting countries, including both OPEC and non-OPEC countries."

On Friday, Novak said global oil demand might fall by 150,000 to 200,000 bpd this year due to the virus outbreak and other negative factors, lower than other forecasts.

Novak said his estimate was “an insignificant volume, taking into account that the volatility in consumption also depends on many factors, such as Libya, Iran, Venezuela, where supply is also quite volatile”.

Others have suggested a much bigger impact. BP said a global slowdown was expected to reduce 2020 oil demand growth by 300,000-500,000 bpd, or up to 0.5% of total demand.

Novak also said U.S. oil output was not expanding as fast as before.

“Growth is slowing down in the United States. It was 1.3 million bpd last year ... This year, we expect less than 1 million,” he said. “Oil production growth is slowing down there due to lower prices.” (Reporting by Olesya Astakhova; Writing by Vladimir Soldatkin; Editing by Edmund Blair, Katya Golubkova and David Clarke)

US says it has thwarted \$6bn Russia-Germany gas pipeline



Bloomberg/Munich

President Donald Trump's top energy official said he's confident that Russia won't be able to complete the Nord Stream 2 gas pipeline in the Baltic Sea – and signalled that the US will press forward with its opposition to the project. Asked about Russian efforts to circumvent US sanctions on the pipeline by completing it on its own, US Energy Secretary Dan Brouillette said “they can't” – and dismissed claims that project owner Gazprom PJSC will face only a short delay.

“It's going to be a very long delay, because Russia doesn't have the technology,” Brouillette said in an interview at the Munich Security Conference on Saturday. “If they develop it, we'll see what they do. But I don't think it's as easy as saying, well, we're almost there, we're just going to finish it.”

The pipeline, which would pump as much as 55bn cubic metres of natural gas annually from fields in Siberia directly to Germany, has become a focus for geopolitical tensions across the Atlantic. Trump has assailed Germany for giving “billions” to Russia for gas while it benefits from US protection.

Nord Stream 2's owners had invested €5.8bn (\$6.3bn) in the project by May 2019, according to company documents.

US sanctions in December forced Switzerland's Allseas Group SA, which was laying the sub-sea pipes, to abandon work, throwing the project into disarray. The US has said Europe should cut its reliance on Russia for gas and instead buy cargoes of the fuel in its liquid form from the US.

"It's distressing to Americans that, you know, Germany in particular and others in Europe would rely upon the Russians to such a great degree," Brouillette said, adding that he is unaware of additional sanctions should Russia move to defy the US.

Even as he spoke, signs emerged that Gazprom's attempts at completion may be underway. A Russian pipe-laying vessel, the Akademik Cherskiy, left the port where it had been stationed in Nakhodka on Russia's Pacific coast last Sunday. Russian Energy Minister Alexander Novak last year mentioned that vessel as an option to complete the pipeline in Denmark's waters. The vessel is now expected to arrive in Singapore on Feb. 22, according to ship-tracking data on Bloomberg.

Akademik Cherskiy pipe-laying vessel started moving, only to indicate Singapore as its next indication.

While Gazprom has said it's looking at options to complete the pipeline, it hasn't given any details on where it will find the ship to do the work. One of the pipeline's financial backers, Austrian gas and oil company OMV AG, has predicted that the Russians will follow through. "From my point of view, they will find a solution," Rainer Seele, OMV's chief executive officer, told Bloomberg on Saturday.

The pipeline was just weeks away from completion, with 94% already constructed, when US sanctions halted work. There's a small section in Denmark's waters that needs to be finished. Before the halt, Nord Stream 2 hoped to finish construction by the end of 2019 or in the first few months of this year. That would allow gas deliveries in time to supply Europe by winter 2020-2021.

Besides OMV, Nord Stream 2's other European backers

Permian poised for 'aggressively negative' gas amid supply swell



Natural gas prices in America's biggest shale basin are going negative again as production surges faster than pipelines can be built to take it away. Gas for March delivery at the Waha hub, located in the Permian Basin of West Texas, has been trading below zero over the past week, Bloomberg Fair Value prices show. The rout is poised to get even worse as supplies swell, according to commodities broker OTC Global Holdings.

Permian gas prices went negative for the first time in the spring of 2019, rebounding when Kinder Morgan Inc's Gulf Coast Express pipeline started up in the fall. History is repeating itself this year as gas output from the basin continues to soar, with the next major conduit not expected to enter service until later in 2020. Permian explorers extract the fuel as a byproduct of oil drilling, making them less responsive to tumbling gas prices.

“We just have an ocean of gas and there is just nowhere to go with it,” said Campbell Faulkner, chief data analyst for OTC. “I think we are going to see aggressively negative spot prices. That just puts a real chill around the gas market.” The dearth of Permian pipelines has contributed to an uptick in flaring, the process of burning gas off instead of capturing it from the well. Flaring, which produces carbon dioxide, has come under increasing scrutiny amid growing concern about climate change. Weaker prices in the basin, though, could be a boon for would-be exporters like Tellurian Inc and NextDecade Corp that plan to tap Permian supply and ship it to Europe and Asia. Gas for next-day delivery at the Waha hub dropped as low as minus \$4.63 per million British thermal units last spring, according to the Bloomberg Natural Gas Composite price.

While spot gas is still in positive territory, trading at \$1.58 on Wednesday, prices for March delivery suggest that won't last long. “The forward curve this time last year wasn't great, but it wasn't as bearish,” Faulkner said. “I'm looking at this and thinking this isn't bearish enough.”

**Energy markets need winter,
and climate change is taking
it away**



Even before the deadly virus struck, another menace confronted the global energy industry: the warmest winter anyone can remember. Russia's winter was so balmy that snow was trucked into downtown Moscow for New Year, and bears came out of hibernation. In Japan, ski competitions were cancelled and the Sapporo Snow Festival had to borrow snow. On the shores of Lake Michigan, Chicago residents watched playgrounds and beaches disappear under the waves as warm weather swelled the water level. Norwegians basked in T-shirts in January. London's spring daffodils have already flowered.

For global energy markets it's a disaster – and as the world continues to get hotter it's something producers, traders and government treasuries will have to live with long after the acute dislocation of the coronavirus has passed. The industry relies on cold weather across the northern hemisphere to drive demand for oil and gas to heat homes and workplaces in the world's most advanced economies. Climate activists might find a certain poetic justice in energy markets suffering from the global warming caused by fossil fuels. Burning oil and other fuels to heat homes and businesses accounts for as much as 12%

of the greenhouse-gas emissions blamed for raising the world's temperatures. The loss in global oil demand due to mild temperatures is probably about 800,000 barrels a day in January, according to Gary Ross, chief investment officer of Black Gold Investors LLC and founder of oil consultant PIRA Energy. That's the equivalent of knocking out Turkey's entire consumption. The natural gas market has taken a similar hit. "The oversupply keeps coming and winter so far hasn't really showed up," said Ron Ozer, chief investment officer of Statar Capital LLC, an energy-focused hedge fund in New York. Last month was the hottest January ever in Europe, the Copernicus Climate Change Service reported. Surface temperatures were 3.1 degrees Celsius (5.6 degrees Fahrenheit) warmer than average. Northern Europe was particularly hot, with some areas from Norway to Russia more than 6 degrees above the 1981-2010 January average. Temperatures in Tokyo took until February 6 to hit freezing point, the latest date on record. Globally, the last five years have been the hottest for centuries, as greenhouse gases change the Earth's ecosystem. Natural gas prices have collapsed globally as the weather crimped the need for heating. US futures are trading at the lowest levels for this time of the year since the 1990s. Asian spot prices for liquefied natural gas have crashed to a record low as demand slumps in the world's three biggest importers—Japan, South Korea and China. Based on weather-driven demand data, the US and Asia are having their warmest winters on record and Europe is having its second warmest, according to Joe Woznicki, a meteorologist for Commodity Weather Group LLC. A key measure of heating demand, known as heating degree days, is 12% below the 10-year average in the US, 14% lower in Asia and 13% in Europe. And it's not just markets that are reeling. It's also an issue for government treasuries. Russia, for example, relies on its oil and gas companies for around 40% of budget revenues. Oil exports have been holding steady, but gas exports are dropping. Sergei Kapitonov, gas analyst at Moscow-based Skolkovo Energy Center, estimates Gazprom's exports to Europe and Turkey fell in January by about a quarter from a

year earlier. Gazprom stock is down 11% this year. The collapse in oil prices – spurred by the coronavirus but pushed along by the warm weather – prompted a push to urge Opec+ allies for a production curb last week. Three days of wrangling in Vienna didn't produce a clear result. From Algeria to Venezuela, similar dynamics are in play. This year's especially warm winter was triggered by events in the Arctic. An intense weather pattern there kept the cold locked in the Arctic region, leaving North America and Eurasia relatively mild. "When the winds are stronger they act as a barrier to keep Arctic air focused over the pole and keeps them from spilling southward," said Bradley Harvey, a meteorologist with Maxar in Gaithersburg, Maryland. "That is likely to continue for the balance of the month and even into March." Rain patterns have also been unusual– and that's added to volatility too. In Norway, the biggest source of electricity comes from running water through turbines. The wettest January since records began turned a deficit of water in reservoirs in December to a huge surplus in January–and sent prices crashing in the Nordic power market. The abnormal winter could hardly have come at a worse time for the US gas market, which is already suffering a glut. US shale drillers have delivered two years of unprecedented production growth and in the Permian Basin of West Texas and New Mexico there's so much gas – the byproduct of drilling for oil – that producers are even paying to get rid of it. Europe and Asia were set to become important export outlets for American gas. Then the weather changed. "It's unfortunate that we're making all this LNG that's not worth very much around the world," Corey Grindal, senior vice president of supply at Cheniere Energy Inc, said.