

Oil Drop Below \$80 Vindicates Cautious Investors Trimming Bets



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- Hedge funds cut Brent wagers by most since June 2017
- Saudi Arabia signals OPEC and allies may boost production

Money managers' reluctance to get behind the oil rally is finally paying off.

Hedge funds trimmed their net-long position – the difference between bets on a price increase and wagers on a drop – in

Brent crude by the most in almost a year. The cuts came as the global benchmark capped its first weekly drop since early April, sliding below \$80 a barrel after Saudi Arabia and Russia said OPEC and its allies may boost oil output in the second half of the year.

“Traders thought that the market was in the process of topping out,” John Kilduff, a partner at Again Capital LLC, a New York-based hedge fund, said by telephone Friday. Oil prices had a “swift reaction today to the musings by OPEC to potentially add more supply to the market. We will be very headline-driven over the next few weeks.”



Oil retreated from the highest prices in almost four years as Russian and Saudi energy ministers signaled that the coalition led by the Organization of Petroleum Exporting Countries may gradually raise oil production to assuage consumer anxiety about higher prices. Their comments mark a major shift in strategy for the historic alliance forged in 2016 to erase a global crude glut.

“I think in the near future there will be time to release supply” smoothly to avoid shocking the market, Saudi Energy Minister Khalid Al-Falih said at the St. Petersburg

International Economic Forum in Russia. When OPEC, Russia and other major producers meet in June “we will do what is necessary” to reassure buyers, the minister said.

He spoke after talks with his Russian counterpart Alexander Novak, who said the output boost would start in the third quarter, if it’s approved by other members of the group. Both men said the size of the increase was still subject to negotiation.

Hedge funds lowered their Brent net-long position by 8.6 percent in the week ended May 22 to 501,634 contracts, according to ICE Futures Europe data on futures and options released Friday. That was the biggest decline since June 2017.

Money managers’ net-long position in West Texas Intermediate crude fell by 2 percent to 377,520 futures and options, the lowest since November, according to U.S. Commodity Futures Trading Commission released Friday. Longs slipped less than 0.1 percent, while shorts climbed 23 percent, the biggest jump since April.

“You want to get out of the long positions if you are expecting that OPEC is going to increase production,” James Williams, president of London, Arkansas-based energy researcher WTRG Economics, said by phone. “It makes perfect sense for the folks that are long to say, ‘How much longer can this thing continue to grow?’”

Disruption Threat

Crude had rallied earlier this month on the dual threat of supply disruptions from Iran and Venezuela, which together account for about 14 percent of OPEC’s production. Still, the coalition is weighing the possibility of easing output limits at a time when drillers are pumping record amounts of crude from American shale basins.

“The market kind of overextended itself, ” Gene McGillian,

manager of market research for Tradition Energy in Stamford, Connecticut, said by phone. "With the Saudis now saying they're limiting their production cuts and geopolitical risk already priced in, there is going to be some uncertainty."

A dearth of pipelines in West Texas' Permian Basin, the most prolific U.S. oil play, is leaving supplies trapped in the region. That's expanding the nation's surplus of the fuel as American production tops 10 million barrels a day.

U.S. inventories climbed by 5.78 million barrels to about 438 million barrels in the week ended May 18, data from the Energy Information Administration showed. That was a surprise increase compared with the 2 million-barrel decline predicted in a Bloomberg survey.

But analysts and traders predict that stockpiles may decline in the coming weeks, bolstering prices. Data provider Genscape Inc. was said to report that inventories fell by about 475,000 barrels between May 18 and May 22 at the key pipeline hub in Cushing, Oklahoma.

Oil prices have "been extremely extended for a long period of time," Kyle Cooper, a consultant at brokerage Ion Energy Group LLC, said by phone Friday. The "EIA report was bearish with a nearly 6 million-barrel build in total petroleum. The more important thing is how that was followed up today with OPEC and Russia regarding the possibility of removing some of those supply constraints."

Saudi Arabia and Russia

Discuss Scaling Back Global Oil Cuts



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- Easing output curbs “on the table”; no decision yet: Al-Falih
- OPEC, allies to discuss loosening supply caps in June: Novak

Saudi Arabia and Russia, the oil producers who led the effort to shrink a global glut, said they are discussing easing output curbs for the first time.³⁰

While scaling back the supply caps is “on the table,” no decision has been made, Saudi Arabian Energy Minister Khalid

Al-Falih said in an interview early Friday morning in St. Petersburg. The Organization of Petroleum Exporting Countries and its partners will in June discuss loosening the curbs that began in 2017, Russian counterpart Alexander Novak said at the same interview after a meeting between the two officials.

Speculation is swirling over when and by how much the producers will scale back cuts after they eliminated an inventory surplus that had sparked a price crash about four years ago. Market uncertainty has risen following renewed U.S. sanctions on Iran that may curb the Islamic Republic's exports, and as economic turmoil in Venezuela drives a collapse of the OPEC member's oil industry. Crude's rebound is also spurring concern that demand may falter.

Russia and Saudi Arabia share a common view on "consuming countries' anxiety and concerns over potential supply shortages," Al-Falih said. "We will ensure that the market remains in its trajectory towards rebalancing, but at the same time we will not overcorrect." The two nations will meet at least two more times before OPEC and its partners gather in Vienna next month, he said.

While Saudi Arabia has shown a desire for higher prices to bankroll domestic economic reforms and underpin the valuation of its state oil company in a planned initial public offering, the top OPEC member and its allies are facing pressure from consuming nations as well as crude producing companies.



High Enough

Indian Petroleum Minister Dharmendra Pradhan said earlier this month that he expressed concern about rising crude and its impact on consumers to Al-Falih. He added that the Saudi energy minister had assured him that the Middle East nation and other producers would ensure that adequate supplies are available and that prices remain reasonable. In developing countries from Brazil to the Philippines, drivers are complaining about high fuel costs.

In Russia, some of the largest oil producers called for more flexibility after almost 17 months of output curbs. The cuts have achieved their goal and crude prices near \$80 a barrel are high enough, according to the bosses of Lukoil PJSC and Gazprom Neft PJSC. Novak said that he will hold talks with the nation's crude producers next week or the week after to discuss the deal with OPEC.

"Earlier we said that we will monitor the market situation, now we can say that we are looking into the issue" of a smooth recovery in output to meet growing demand, Novak said in the interview on Friday. He added that he and Al-Falih discussed prices and the market situation, including Venezuelan

production and risks related to Iran.

The Saudi minister said he'll meet Novak again in Moscow on June 14, adding that another meeting between the two is possible before that.

U.S. Supply

In Washington, Democrats are using high gasoline prices, approaching \$3 a gallon for the first time since 2014, as a political tool, accusing the White House of not doing enough to shield consumers.

Recent price gains have been driven by American actions such as President Donald Trump's withdrawal from a 2015 deal between Iran and world powers that had eased sanctions on the Persian Gulf state in exchange for curbs on its nuclear program. Earlier this month, Al-Falih and United Arab Emirates Energy Minister Suhail Al Mazrouei said recent moves in oil prices have been driven by geopolitics and that global supply remains ample.

Additionally, record production in the U.S., which is not part of the deal among global producers to cut output, is a key issue that's complicating strategy for OPEC and its allies.

Brent crude, the benchmark for more than half the world's oil, was down 0.4 percent at \$78.49 a barrel at 7:31 a.m. in London. Earlier this month, prices had traded above \$80 a barrel for the first time since November 2014. U.S. West Texas Intermediate futures were at \$70.49 a barrel in New York.

"We will be coordinating closely, monitoring the market almost on a daily basis," Al-Falih said on Friday. "We'll consult with other countries. Each of them has a voice and their voices matter to us."

'Gulf crisis threatens E Africa peace efforts'



Diplomatic tensions between countries in the Gulf are threatening peace efforts in East Africa, particularly in the Horn of Africa, the EU's special envoy has warned.

The crisis, which erupted nearly a year ago, has pitted Saudi Arabia, the UAE, Egypt and Bahrain against Qatar, with Riyadh and its allies accusing Doha of fostering close ties with Iran and backing Islamic extremists. Qatar has denied all the allegations and the accusers have failed to submit any evidence to support their claims.

But the fallout has had direct repercussions in the Horn of Africa where it has exacerbated already-existing tensions, notably in Somalia, said Alexander Rondos, Europe's special envoy to the region.

In particular, tensions have escalated steadily between Somalia and the United Arab Emirates, which has sought to extend its influence there as the war in Yemen rages on.

Although the two countries have been traditionally close, Mogadishu's attempts to remain neutral over the Gulf divisions have not gone down well.

One of the EU's "most important objectives" is to make sure that East Africa "is as well protected as it can be from what is a rapidly shifting geopolitical environment" in the Gulf, he said on Friday following a two-day seminar of EU envoys to

the region.

Political strife between Gulf states and their alliances with east African players was “the biggest strategic issue because it could easily undermine all of the efforts to overcome East Africa’s own particular crises, whether it’s South Sudan or Somalia,” Rondos said.

Sanctions aren't stopping Russia's LNG ambitions



Despite the imposition of US and EU sanctions in the energy sector, new projects continue to flourish in Russia. Already the world’s largest exporter of traditional natural gas, the country is gaining a foothold in the liquefied natural gas market. For the last 3 years, Russia’s LNG capacity has been

growing substantially.

Competition from Qatar, Australia, and the US, the world leaders in LNG exports, coupled with the impact of political tensions after the Ukraine crisis, have made Russia reconsider its traditional pipeline exports. After Lithuania and Poland built their own LNG terminals with gas from Norway, Qatar and most recently the US, Gazprom's conventional gas intake was significantly diminished in both countries. Despite Gazprom's cheaper price, Lithuania and Poland preferred to pay a premium for their LNG to reduce the dependency on Russia's energy resources.

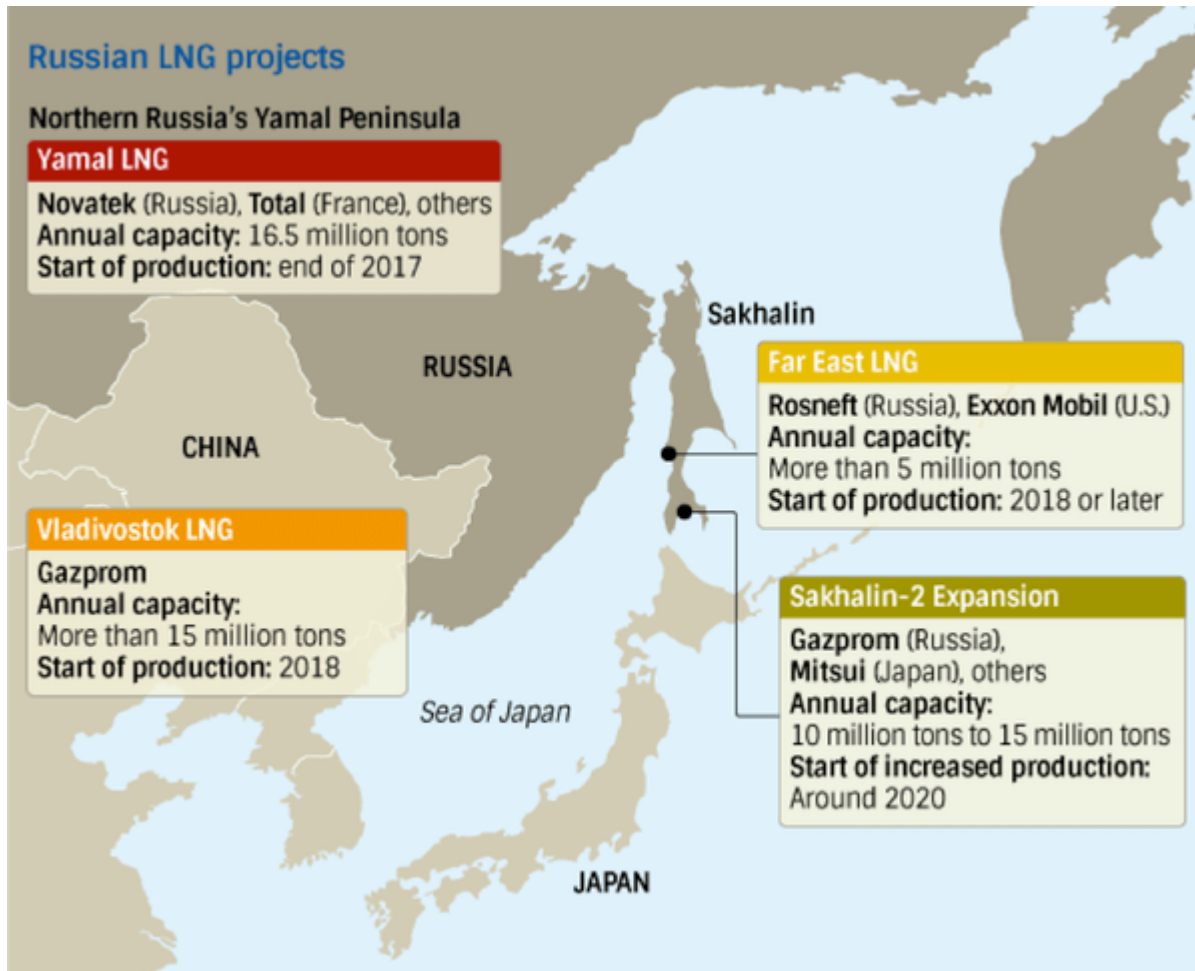
Gaining a foothold

Novatek, Rosneft and Gazprom each set out to develop their own unconventional gas resources. Novatek's Yamal LNG is Russia's most ambitious project. Based on the Kara Sea in the Arctic Circle, gas extraction is conducted under the permafrost, which makes it incredibly challenging. Funded by Russia's Novatek, France's Total, China National Petroleum Corporation, and China's Silk Road Fund, Yamal LNG is a \$27 billion facility that will start full operation in 2018. It will produce 16.5 million tonnes of LNG per year. Yamal LNG's gas plant will be finished in November. As a symbolic gesture, Russia will send the first shipments to China, which supported the project. Another four shipments will follow in December.

Rosneft is developing its Far East LNG project in Sakhalin, which aims to produce 5 million tonnes of LNG gas. Its goal is to deliver supplies to the Asia-Pacific region, in particular to Japan and South Korea.

Gazprom is pushing LNG as in-house transport fuels. Russia's gas giant signed agreements with Avtodor, the Russian highways state company, and Gazprom Gazomotornoye Toplivo, a Gazprom subsidiary, to grow a network of LNG and compressed natural gas filling stations for locomotives and trucks. Expanding its reach, Gazprom also launched small-scale LNG projects abroad

in places like Vietnam, Belarus, Ghana and Bolivia.



Bypassing Western sanctions

The impact of Western sanctions on Russia's LNG development proved to be rather limited. Despite the restrictions on financial borrowing and export of Western technologies (e.g. drilling and hydraulic fracturing), Russia managed to keep its LNG projects afloat. Loopholes in the sanctions regime and new partners allowed Russia to bypass legal implications and to find new funding.

While both oil and gas exploration projects were prohibited under US sanctions, the EU sanctions exempted gas projects. This allowed European investors to further participate in the development of Russia's LNG gas plants. Both French Total and Dutch Shell preserved their 20% and 27% shares in the Yamal and Sakhalin projects, respectively.

Despite Western restrictions on capital, Russian energy

companies still manage to attract European investments. Italy's Saipem is set to be a subcontractor for Arctic LNG 2, Novatek's second gas plant on the Kara Sea. In 2015, Shell agreed to invest in the expansion of Gazprom's Sakhalin II, while in 2017, a Dutch company set up a joint venture with Gazprom to design and construct the Baltic LNG project in the Leningrad Region. However, Rosneft's Far East and Gazprom's Vladivostok LNG projects were delayed until 2020 due to a lack of funds and low fuel prices. Partnered with ExxonMobil in 2014, the Far East project was stalled due to looming Western sanctions over the Ukraine crisis. Recently, Rosneft announced that it may build the LNG plant using its own resources exclusively.

Russia's pivot to Asia and the Middle East lessened the country's dependence on Western lending. In March 2017, having difficulties raising funds from Western banks, Novatek sold a 9.9% stake to China's Silk Road Fund. Similarly, Rosneft turned to Chinese investors after Glencore and the Qatar Investment Authority cut their stakes. A 14% stake of Rosneft was bought by CEFC, China's Energy conglomerate, for \$9 billion. Recently, investors from Japan and the Middle East showed interest in Gazprom's Baltic and Novatek's Arctic 2 LNG projects.

Making strides in the LNG market

With the latest reports predicting 13% growth in the LNG market by 2025 and an overall 53% share in long-distance gas trade by 2040, Russia is under further pressure to develop its LNG projects on time. Currently, Russia exports 10.8 million tonnes and has a 4.2% market share.

Following the completion of the Arctic 2 LNG project, the country might challenge the dominance of Qatar, which currently occupies 30% of the market. By building the second gas plant on the Gydan peninsula, Russia could produce up to 70 million tonnes of LNG annually, just below Qatar's 77 million. The construction of Arctic 2 is slated to commence in

2019, with the first shipments due on the market in 2023.

Challenging Qatar's dominance in the LNG market would make Russia not only the world's largest exporter of conventional natural gas, but also of liquefied gas. The conditions for that are favourable. With funding from China and Saudi Arabia, Russia can bypass Western restrictions on capital. Russia's LNG exploration sites are strategically close to the Asian market. Located in the Far East, LNG would be easy to transport via sea to Japan and South Korea, the world's largest LNG importers.

EU settles seven-year Gazprom dispute without imposing fine



The EU has settled a seven-year dispute with Gazprom after the Russian state-controlled energy giant agreed to change its

operations in central and eastern Europe.

The deal, announced on Thursday by the EU's competition commissioner, Margrethe Vestager, comes at a time of tensions between Russia and Europe over Ukraine, Syria and the poisoning of the Skripals in Salisbury, which has taken British-Russian relations to a new low. Meanwhile there is division within the EU over the construction of the Nord Stream 2 pipeline between Russia and Germany.

Vestager sought to isolate the case from the political turmoil. "This case is not about Russia, this case is about European consumers and European businesses and making the market serve them," she said. "This is about what rules to play by, no matter your flag, no matter your ownership."

Under the terms of the deal, Gazprom will be banned from imposing restrictions on how its customers in central and eastern Europe use gas. Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland and Slovakia will no longer be banned from exporting gas to another country.

The deal aims to answer concerns that customers in five countries were being over-charged for their gas. From now on, customers in Bulgaria, Estonia, Latvia, Lithuania and Poland have the right to demand a price in line with those in Germany and the Netherlands.

If Gazprom fails to respond, these customers can take their complaint to an arbitration body in the EU, which is empowered to impose a lower price.

Some governments are unhappy about the commission's decision not to fine Gazprom for its past behaviour. Lithuania's prime minister, Saulius Skvernelis, described the proposed settlement as "strange", Reuters reported.

Acknowledging that some would have liked to have seen Gazprom fined, Vestager said that option was not in the best interests

of European consumers.

“With today’s decision, Gazprom has accepted that it has to play by our common European rules, at least if it wants to sell its gas in Europe. It has accepted to play by a rulebook that is tailor-made to ensure that European customers can benefit from the free flow of gas this very day.”

She said failure to comply could lead to a fine of up to 10% of global turnover, a step that can be taken without another lengthy legal investigation.

“This is not empty theory,” she said. “In 2013 we fined Microsoft over half a billion euros when the company broke its obligation. In other words, the case doesn’t stop with today’s decision. Rather, it is the enforcement of the Gazprom obligations that starts today.”

Gazprom’s deputy chief executive, Alexander Medvedev, said he was satisfied with the settlement, describing it as “the most reasonable outcome for the well-functioning of the entire European gas market”.

Europe Awakens for LNG to Rival China as Own Gas Runs Out



Europe is starting to steal some of the limelight from China's booming liquefied natural gas demand as imports pick up after several lackluster years.

Europe and China will be comparable in significance as importing regions in the coming years, Cheniere Energy Inc. said, citing data from Wood Mackenzie Ltd. That follows "absolutely phenomenal" growth in China last year, Andrew Walker, vice president for strategy at the company that pioneered the transformation of the U.S. shale boom into global exports, said in Amsterdam.

China's LNG consumption leapt 42 percent last year to almost match European imports, which climbed 20 percent. Whereas the Asian nation needs the fuel mostly to replace dirtier coal, Europe needs it to offset rapidly declining domestic production.

The re-emergence of Europe as an LNG market has caught the eye of the coming wave of U.S. fuel producers. Venture Global LNG, Inc., which is developing export terminals in Louisiana, sees Europe as "one of the biggest surprises," it said at the Flame conference in Amsterdam.

Europe's location may give it an edge over generally higher-

priced markets in Asia when it comes to attracting the increasing volumes produced in the Atlantic. North America and Russia were seen providing most of the new supply from 2025 to 2030, according to a poll at Flame.

Demand growth in China and South Korea, the second and third biggest LNG importers, will cool during the rest of this year after continued expansion through April, according to Cedigaz, a Paris-based industry research group. With less appetite also from Japan, the biggest buyer, northern Europe will step in to balance the markets, Cedigaz's secretary general Geoffroy Hureau said at Flame.

U.K. supply this summer may be low but the Netherlands will see a pick up as it rushes to offset lower own production and higher demand for storage, Nick Boyes, a senior gas and LNG analyst at Axpo Trading AG, said by email. France will also need more for storage, he said.

The Netherlands is taking the lead also because of lack of storage demand in Britain after the closure of the Rough facility. The Dutch market is so hot that the country's Title Transfer Facility hub will be the main reference for LNG trading in the next three to four months, Ruben Tomas, lead LNG trader at Germany's Uniper SE's commodity unit, said on a panel.

"We see a well-supplied Atlantic Basin this summer" as Russia's Yamal LNG and U.S. projects fill the market with cargoes, Axpo's Boyes said. Trinidad & Tobago and Angola are also boosting supply, while demand in southern Europe and Egypt is declining, he said.

While the usage rate of LNG terminals in Europe was just 23 percent last year, things are looking up, according to Arturo Gallego Diaz, head of LNG trading and operations at Centrica Plc.

"There are more and more people looking at northwest Europe as an opportunity to deliver volumes that are produced in the

Atlantic basin,” he said.

Declining production in the North Sea and the Dutch Groningen field as well as the closing of coal plants in Europe have a “big impact on LNG production” and are “a very big demand surprise,” Venture Global LNG Chief Commercial Officer Tom Earl said at Flame. The company recently signed a supply contract with Portugal’s Galp Energia SGPS SA.

‘Fairly Stable’

Creditworthy counterparts, liquid hubs and physical demand help make Europe attractive for LNG, according to Gallego Diaz.

Uniper expects “fairly stable” demand for gas in Europe, while seeing growth in gas-to-power and potentially transport, said Gregor Pett, executive vice president for market analytics.

Russia, Europe’s biggest gas supplier, sees higher demand for its pipeline gas, undermining the region’s efforts at diversification, according to Sergei Komlev, head of the contract structuring and price formation directorate at Gazprom PJSC’s export unit.

While Russia will continue to pipe natural gas to Europe in competition with LNG, both can co-exist, the Centrica and Uniper executives said.

“I don’t think they exclude each other,” Uniper’s Pett said. “Everyone has a place.”

Higher oil prices offer 'temporary relief' to Mena exporters: IIF

Higher oil prices offer "temporary" relief to the oil exporters of the Middle East and North Africa (Mena) whose economic prospects are improving, according to the Institute of International Finance (IIF), the Washington-based economic think tank.

Oil prices rose rapidly in the past six months on unanticipated sharp output fall in Venezuela, the extension of the producers' pact on production cuts to the 2018- end, the escalation of tensions in the Mena, which enhanced risks of oil supply disruption; and higher global oil demand. We have revised upward our average Brent oil price assumption to \$72 per barrel for 2018 (33% increase from 2017)," IIF said.

With the projected \$18 increase in average oil prices in 2018 against last year, it expects the cumulative current account surplus for the nine Mena oil exporters (Saudi Arabia, the UAE, Kuwait, Qatar, Oman, Bahrain, Algeria, Iraq and Iran) to increase from \$56bn in 2017 to \$233bn (9.5% of gross domestic product) in 2018. "The fiscal situation for Mena oil exporters (except Bahrain and Oman) is now on firmer footing. The respective authorities in the region have implemented serious fiscal adjustment in recent years," it said.

Higher oil prices, combined with additional non-hydrocarbon revenue, should more than offset the 7% average increase in public spending, leading to narrower deficits (excluding investment income), according to the IIF. "We expect the consolidated fiscal deficit for the nine Mena oil exporters to decrease from 7.5% of GDP in 2017 to 3% in 2018," it said, adding when included investment incomes, which are very large

in Kuwait, the UAE and Qatar, the cumulative deficit will be much smaller.

Highlighting that gross public foreign assets will resume its rise to \$2.9trn by end-2018; it said about 70% of these assets are in the form of sovereign wealth funds. With relatively little public external debt, the region's net public external assets position of \$2.6bn (108% of GDP) is substantial, the report added. Expecting non hydrocarbon growth to accelerate from 2.3% in 2017 to 2.8% in 2018 (still well below the average growth of 6.2% in 2001-2014); IIF said the growth pickup will be supported by the shift to fiscal expansion following three years of consolidation. A tighter monetary stance in the six GCC countries and Iraq, whose currencies are pegged to the US dollar, could offset some of the gains from expansionary fiscal stances. "We expect a cumulative increase of 100 bps in key policy rates, in line with the four Fed hikes of 25 bps each," it said.

UK could face court action over air pollution after EU warning: 'We can delay no more'



Proposals made on Tuesday are 'not substantial enough to change the big picture'

Nine European countries including the UK could face legal action if they fail to make progress on reducing air pollution, the EU's top environment official has warned.

The intervention came as legal air pollution limits for the whole year were reached within a month in London.

Brixton Road, Lambeth, has seen levels of pollutant nitrogen dioxide exceed average hourly limits 18 times so far this year, the maximum allowed under European Union air quality rules.

Inaction by national governments over the issue prompted the European Commission's environment commissioner, Karmenu Vella, to warn of legal action after talks with ministers from nine EU countries including Britain, France, Germany, Spain

and Italy – all of which regularly flout the bloc's air quality standards.

"Every year, an astonishing number of citizens' lives are cut short because of air pollution," Mr Vella said.

"We have known this for decades, and the air quality limit values have been in place for almost as long.

"And yet, still today, in 2018, 400 000 people are still dying prematurely every year because of a massive, widespread failure to address the problem."

He continued: "The deadlines for meeting the legal obligations have long elapsed... we can delay no more."

Poor air quality caused by vehicle emissions, industry, power plants and agriculture is known to cause or exacerbate asthma and other respiratory problems.

Air pollution also has significant economic impacts, increasing healthcare costs, reducing employees' productivity and damaging crops, soil, forests and rivers, according to the European Environment Agency's latest annual report.

It has taken the London longer to reach the air pollution limit this year than last year when legal levels were breached less than a week into the new year.

But while campaigners welcomed action by London Mayor Sadiq Khan to tackle pollution, they warned the relative delay in reaching the limit this year could be down to weather conditions dispersing the dirty air.

Environmental groups called for the Government to take urgent steps, including creating and funding clean air zones in pollution hotspots across the UK where 85% of areas still break air quality rules which should have been achieved in 2010.

Government estimates suggest compliance for levels of nitrogen dioxide, much of which comes from road transport, particularly diesel, will not be met until 2026.

The most recent data shows that around 7 per cent of the urban population within the EU was exposed to fine particulate levels higher than the EU-stipulated limit in 2015.

If the stricter World Health Organisation limits are applied, that rises sharply to 82 per cent.

The countries represented at Tuesday's summit have been given ten days to submit new proposals for meeting EU air quality standards regarding particle levels.

In Mr Vella's opinion, the proposals offered by the nine offending countries were "not substantial enough to change the big picture".

He insisted that the only way to avoid court action was to take "all possible measures without delay".

Reacting to the outcome of the summit, ClientEarth lawyer Ugo Taddei said: "Commissioner Vella was evidently unimpressed.

"The European Commission should now follow this blatant inaction through to its legal consequences and trigger court actions without further delay.

"The people of Europe have waited long enough to breathe clean air."

EU Commission warns members it will get tough on pollution



BRUSSELS (Reuters) – The European Commission said on Tuesday it would get tough on air quality and penalize members that breached EU rules on pollutants such as nitrogen oxide and particulate matter.

The Commission estimates that 400,000 people die every year as the result of airborne pollution, and targets introduced for 2005 and 2010 are still being exceeded in 23 of 28 EU countries.

After a meeting with the environment ministers of nine countries which face legal action because of air quality problems, including the bloc's largest economies Germany and France, EU Environment Commissioner Karmenu Vella said his

patience was running thin.

“The deadlines for meeting the legal obligations have long elapsed, and some say we have waited already too long, but we can delay no more, and I have made this very clear to ministers this morning,” Vella told a news conference.

He added that while countries had made some suggestions during the meeting, air quality standards would still be breached well beyond 2020 unless new measures were taken.

“In our exchange, there were some positive suggestions, but I have to say that at first sight, these were not substantial enough to change the bigger picture,” Vella said, adding members had until next week to improve on their proposals.

The EU Commission can take countries to Europe’s top court if they breach EU law. Poland as well as Bulgaria have already faced legal action over air quality issues.

Rethink Gas for the Future EU



The degree to which Europe increases its use of gas will depend on the regulations put in place, on the efficiency of the emissions trading system and on the ability to prove the benefits brought by its use

This year Europe is facing a real winter, and many European households keep themselves warm with natural gas. Gas consumption in power generation is also growing and is a strong backup for the increasing levels of intermittent renewable energy. All told, more than a fifth of energy consumption in the EU comes from the use of gas. According to the Agency for the Cooperation of Energy Regulators (ACER) gas demand in 2016 rose by 7 percent compared to 2015, reaching 4962 TWh (terawatt hours). Gas is a cost-effective part of Europe's energy mix, as the global market is well supplied and prices remain competitive with other fuels. The International Energy Agency (IEA) in its "Global Gas Security Review 2017" notes that natural gas is the cleanest and least carbon intensive fossil fuel and that it is expected to play a key role in the transition to a cleaner and more flexible energy system. In its World Energy Outlook's central scenario, the IEA anticipates that natural gas will be the only fossil fuel that will maintain its share in the energy mix in the coming decades. The EU is an integral part of an increasingly

globally interconnected gas market, but its own production, while significant, in 2016 supplied only 27 percent of demand, with a resultant huge reliance on both pipeline and LNG importation.

An efficient and liberalized interconnection

A clear asset of the European gas industry is its infrastructure network. Gas pipelines, distribution networks, LNG import terminals and underground storage provides necessary flexibility to the European energy system's variable seasonal demand. After 30 years of progressive liberalization an interconnected gas market has emerged and continues to develop in the EU. A good indicator of this is the fact that 75 percent of its gas is priced to within EUR1/MWh of the gas trading hub in the Netherlands. Also significant gas flow fluctuations are accommodated smoothly, and that results in market participants being flexible in their response to changing market fundamentals. Developments in the LNG market, such as new supply routes like the Southern Corridor, additional interconnections in the internal energy market and new focused legislation have fundamentally improved the EU's supply security. The fact that Russia has increased its market share to 34 percent doesn't create worries, because this increase is happening in the competitive environment created by the third energy market legislation package. New gas discoveries close to the EU's borders in the eastern part of Mediterranean and the final investment decisions made for the production from these sites provide an additional guarantee for a secure gas supply. Still the question is asked whether gas is a transition or destination fuel? Some voices are calling for an urgent phase-out of all fossil fuels, including natural gas.

On the positive side, while methane can leak if not properly handled from well to wheel, natural gas is the fossil fuel that emits the least greenhouse gases—about half the CO₂ produced by burning coal if properly produced, transported and

used. Gas is also well placed to supply back-up to intermittent renewable electricity because of its flexibility and short start-up times. Because of these qualities gas is sometimes referred to as a renewables best friend.

Nevertheless, on the negative side, natural gas is a fossil fuel that emits substantial amounts of greenhouse gases—with the risk that venting, flaring and leaking can more than offset gas advantages. According to Climate Action Tracker, full lifecycle emissions, including the fuel chain and also the manufacturing of energy conversion technology, implies emissions in the range of 410-650 g CO₂ eq/kwh for combined cycle plants as the most effective combustion plants.

How to look at this contradiction? From one side, the use of gas leads to good public acceptance, a vibrant internal market and extensive infrastructure, all of which could provide for Europe's future energy system. From the other side gas leads to greenhouse gas emissions that aren't consistent with the fight against climate change. Industry wants policymakers to avoid picking winners in the fuel mix and instead focus on setting frameworks for fuels to compete on the basis of the three objectives: sustainability, affordability and security of supply.

Renewables increasingly in focus

Today the EU is clearly focused on the promotion of renewable energy. In 2015, renewable energy contributed 17 percent to total final energy consumption. There are indications that the stated objective of 20 percent of renewable energy in the EU's energy mix will be reached by 2020. The European Commission in the "Clean energy for all Europeans" legislative package proposes an objective of 27 percent of the renewable energy share in total final energy consumption by 2030. The International Renewable Energy Agency (IRENA) in February 2018 published a study "Renewable energy prospects for the European Union." It concludes that the EU could double the share of the renewable energy in the energy mix from 17 percent in 2015 to

34 percent in 2030 with existing technologies if the right enabling framework is established. The study emphasizes that all EU countries have the cost-effective potential to use more renewables and that to achieve this goal a yearly investment of USD 73 billion would be required. But even using all this renewable potential a majority of the energy supply in 2030 will be provided by fossil fuels. IRENA's model shows that gas will be the most used fossil fuel in 2030, but the presence of coal will still be strong.

The EU, which accounts for about 10 percent of global GHG emissions, is firmly committed to fighting climate change under an ambitious reading and implementation of the Paris Agreement. The target is to cut the EU's emissions by 80-95 percent by 2050, and that change requires that the EU's electricity, transport and heating and cooling sectors be carbon free by that time. Achieving such objectives while reusing part of the existing infrastructures and changing much, but not all, of the existing energy system suggests that the strategy has to mobilize all existing assets in the most efficient way possible.

Blue gold as the route to low carbon transition...

Gas offers substantial potential to replace higher carbon emitting fuels to work in partnership with renewables to satisfy energy demand and flexibility needs. Increased electrification will drive some change in the role of gas in the energy mix and increased coordination between power and gas will be required to ensure the most efficient interaction to deliver baseload and peak energy demand.

For a successful future of gas use it is important that carbon pricing and trading are put on the right track. The revision of the EU Emission Trading System (ETS) for the period after 2020 anticipates that sectors covered by the ETS have to reduce their emissions by 43 percent compared to 2005. To this end the overall number of emission allowances will decline at an annual rate of 2.2 percent from 2021 onwards. This is a

considerable increase from the existing phase, where an annual decline rate is 1.74 percent. We could expect a considerable increase in carbon prices, accelerating departure of coal use in the EU. Also, for gas as a fossil fuel carbon capture, usage and storage will be important. Demonstrating that all of this could be economically implemented and supported by an appropriate regulatory framework and favorable public opinion is crucial for the long-term future of natural gas use.

An interesting and promising avenue for the future of gas is decarbonization by increased use of renewable (green) gas. Renewable gas—biomethane and hydrogen notably—can be transported in existing gas pipes, even if with some adaptations. This would be at a fraction of the cost to carry the same amount of energy in the form of electrons, a ratio as much as one to ten in favor of gas. There is also clear political support for renewable gas. A good example is the recent announcement by France's President Emmanuel Macron to support green gas production with a fund of 100 million euros. Macron has also promised to remove some administrative bottlenecks related to this project. Actually France's energy transition law has a very ambitious target to provide 30 TWh from renewable gas in final energy consumption by 2030. Some experts believe that with appropriate support, the ambition could be even greater.

The EU has some experience in producing and using biomethane and hydrogen, but it is fair to say that there is a long way to go before renewable gas becomes a significant part of the energy mix, as volumes of biogas and biomethane have been very modest. In 2015 EU member countries—most notably the northwestern countries—produced biogas equivalent to less than 20 bcm of natural gas, thereby covering a mere 4 percent of total EU demand for gas. Only in Germany, which accounts for half of total EU production, can this be considered a significant resource at this stage. For reasons of cost and technical constraints, only a small part of the gas thereby

produced has been injected into the natural gas grid, most of it being used to produce heat and power locally. To understand how ambitious objectives could be in the years to come, one must consider a variety of bottlenecks in the production, transport, storage and application of renewable gas.

... And the near future is in biogas

To start with what already works, sufficient knowledge and techniques are presently available to produce biogas from landfills and sewage mostly using anaerobic digestion technology. CO₂ needs to be removed from produced biogas and other purification must be carried out to get biomethane that meets the necessary standards to be injected into the natural gas grid. Such upgrading is, of course, costlier if applied to the relatively small volumes available from given farm or landfill. The gasification of woody biomass could produce higher volumes and help scale up installations, but so far such technology is still used only in pilot projects.

A lot of expectations are put on producing renewable gas from renewable electricity. The surplus of intermittent solar and/or wind energy could be stored in the form of hydrogen by running at least part of such surplus through electrolyzers. Today, such a surplus translates into negative prices in the wholesale power market. Doing so on a large scale is being considered in connection with large North Sea offshore-wind projects. Breakthroughs are still needed, however, in power-to-gas technologies, as electrolyzers able to work intermittently are presently costlier to build and operate. The significant capital costs also need to be spread over enough hours and days of operation to make the per gas-unit cost acceptable.

Renewable gas could be transported by trucks, dedicated pipelines and the EU-wide natural gas grid. It would be especially convenient to use the existing grid for transporting renewable gas. Hydrogen can be injected into the natural gas grid, but it influences combustion behavior and

materials integrity, which sets limits. Also, a higher flow rate is required to meet demand, because hydrogen's volumetric energy density is substantially lower than natural gas. As for biomethane, its injection is less constrained than that of hydrogen, provided that gas quality checks have been carried out. Today each EU country has established its own limitations, and regulations related to injections of hydrogen can differ widely even between neighboring countries. Challenges also exist when one envisions the storage of significant volumes of renewable gas, notably hydrogen. Methanization can then appear as an attractive alternative, as hydrogen can also be turned into methane when combined with CO₂, and this does away with technical constraints regarding transport and use. The challenge then arises as to which sources of CO₂ would be acceptable and/or preferable to produce biomethane.

Biomethane could substitute natural gas in almost every sector and application. In industry, renewable gas could serve both as an energy source and a feedstock. It could be used for residential sector heating. By contrast, hydrogen today is used mostly in industry. A hydrogen-driven economy will therefore require a more profound transformation. In mobility the potential use of renewable gas is substantial with the exception of air transport. While some countries have developed very significant fleets of gas-powered vehicles, in many others use of renewable gas in transport is hampered by the lack of refueling infrastructure. The interesting breakthrough for the use of renewable gas could come with decreasing costs for hydrogen fuel cells vehicles.

The decarbonization of the gas sector could develop step by step. In this respect certificates, whether Guarantee of Origin (GoOs) certificates for green gases or CO₂ certificates used as offsets could play a role in facilitating acceptance and lowering costs. Altogether, it is correct to say that measures to promote renewable gas are relevant to all elements

of the gas value chain.

A key role in Europe's energy economy

Gas—both natural and renewable— clearly has a place in Europe's future energy economy. The part of it in the EU's energy mix will depend on political frameworks put in place, from the efficiency of an improved emission trading system and from the gas industry demonstrating the benefits of gas use in decarbonized energy system. It is difficult to speculate about the part of gas in the EU's energy mix by 2050. We could try to extrapolate the results of the aforementioned study by IRENA: "Renewable energy prospects in the European Union." At the level of 27 percent in the EU's energy mix by 2030, fossil fuels will have a share of 62 percent. The part of natural gas from this share is roughly 40 percent and that would mean 25 percent for natural gas in the energy mix. Renewable gas could grow in the period to 2030 to 8-12 percent from the current 4 percent level of natural gas consumption. With the growth of the renewable component of the energy mix, fossil fuels will decline, but the part of natural gas in the fossil fuels is increasing. All this could bring an increased share of gas in the EU's energy mix.

Andris Piebalgs

Politician and diplomat, he is a councilor of the President of Latvia and he was European Commissioner for Energy (Barroso I) and for Development (Barroso II). He was also a minister of Finance and Public Education of Latvia, in addition Chairman of the commission for the budget and finances of Parliament. Finally, he was a Latvian ambassador at the EU.