EU Unveils Plan to Cut Emissions to Zero, in Bid to Save Planet

The European Union unveiled its long-term vision on combating climate change in a push for more ambitious action on the environment just days after U.S. President Donald Trump rejected his government's warning on the economic costs of global warming.

The 28-nation bloc, responsible for 10 percent of global greenhouse-gas emissions, set a 2050 perspective to help give direction to member states, companies and citizens to anticipate costs in fighting temperature increases. The EU's updated strategy comes a week before representatives from almost 200 countries are due to meet in Poland for an annual conference on addressing climate change.

"With this plan, Europe will be the world's first major economy to go for net-zero emissions by 2050," EU Climate and Energy Commissioner Miguel Arias Canete said. "It is necessary to meet the long-term temperature goals of the Paris Agreement. It is possible with current technologies and those close to deployment," he said.

While the new European strategy doesn't propose changing the

bloc’s 2030 goal, it sets seven building blocks for the following decades that could be turned into binding targets later on. These range from energy-efficiency measures, including developing zero-emission buildings and smart infrastructures and greater use of renewable-energy sources.

“Going carbon-neutral will spur investments in European clean-energy solutions of up to almost 300 billion euros ($339 billion) a year,” Arias Canete said. “And overall, it will help grow our economy up to 2 percent of GDP by 2050.”

The steps are aimed at showing how determined the EU is to honor the Paris accord’s targets even in the face of Trump’s decision to take the U.S. out of the 2015 agreement signed by almost all other countries in the world.

The EU currently has a binding target of cutting emissions by at least 40 percent by the end of the next decade. That’s not enough to meet the Paris objective of keeping global temperature growth well below 2 degrees Celsius, a move scientists say is needed to prevent catastrophic effects of global warming.

“There are many challenges on the road. But with climate change, business as usual is not an option and we cannot afford the price of inaction,” Arias Canete said. “Going climate-neutral is necessary, possible and in Europe’s interest.”

For the EU, which wants to lead by example, the long-term strategy is also a political tool to demand more at the next United Nations talks that start next week in Katowice, Poland. Envoys at the meeting will aim to draw up a rule-book to implement the Paris deal and its mechanisms to step up carbon reductions worldwide.

On Wednesday, Arias Canete will discuss the plan with the European Parliament in Brussels. The European Commission, the EU executive, says all relevant national actors should

have policy debates in order to prepare heads of state and government for a meeting on the Future of Europe on May 9, 2019, in Sibiu, Romania.

EU member states are to submit by the end of 2018 their own draft national climate and energy plans, which should take into account the bloc's latest strategy. The EU calls for expanding cooperation with global partners over the years so that all nations, rich and poor alike, submit their own national long-term view. That should also include business associations, regions and cities that are already ironing out their own long-term visions.

"If we do not lead, nobody else will," Arias Canete said. "And if nobody else acts, unrestrained climate change will severely impact Europe, as well as everybody else."

Russia's Arctic LNG project aims to tempt fuel-hungry Japan

US shale revolution spurs Moscow to look east for new markets

TOKYO — Russia's push for Japanese participation in an Arctic energy project comes as the world's largest natural gas exporter, faced with the rise of the U.S. as a rival, looks to Asia to diversify.

Russian gas company Novatek's Arctic-2 liquefied natural gas project is located on the Yamal Peninsula, where conditions are remarkably harsh even for the natural gas industry, which is known for plopping down work sites in jungles and deserts.

The peninsula, whose name means "end of the land" in the indigenous Nenets language, boasts rich gas reserves. But with temperatures approaching minus 60 C at times, extracting it requires dealing with permafrost, and icebreaker ships are needed to transport it.

Novatek's first project there began operating in 2017. The company has asked Japanese trading houses Mitsubishi Corp. and Mitsui & Co. to participate in the second — something the Japanese government has welcomed as an opportunity to encourage progress on a long-running territorial dispute with Moscow.

Russia is a relative latecomer to the LNG business, as most of its gas exports travel to Europe by pipeline. Before the Yamal projects, its only LNG plant was Sakhalin-2 in the Russian Far East, which Mitsubishi and Mitsui are also involved in.

A clue as to the reason for Moscow's sudden enthusiasm for LNG lies in a comment by President Vladimir Putin that development in the Far East is pivotal to Russia's advancement.

To maintain its position as a leading energy producer, the country needs to cultivate Asian markets, which are now driving demand. This requires not only pipelines to directly transport gas to China and elsewhere, but also facilities to liquefy gas for shipment to more distant destinations.

Two trends have encouraged Moscow to look eastward: concerns in European countries about overdependence on Russian gas, which resurfaced after Moscow's 2014 annexation of Crimea, and the rise of the U.S. as a major oil and gas producer.

Facilities for processing shale gas into LNG and petrochemicals have proliferated along the Gulf of Mexico in the U.S. states of Texas and Louisiana. The surge in production of cheap shale gas has transformed America's energy outlook from the days when Washington forecast that the country would need to import 390 million tons of LNG annually to meet its energy needs in 2030.

For natural gas exporters, this development has not only robbed them of an anticipated source of growing demand, but also – with the start of U.S. LNG exports in 2016 – led to the emergence of a rival supplier. LNG from Africa and the Middle East that had been expected to go to America has flowed into Europe instead, threatening Russia's near-monopoly and prompting it to turn to Asian markets.

Faced with sanctions from Western countries over the Crimea annexation, Moscow is seeking support from Asian natural gas

buyers – particularly Japan, the world's largest LNG importer – to ensure the success of its Arctic development.

Tokyo is pressing Mitsubishi and Mitsui to make a decision, but doing so may prove difficult. While the trading houses understand the potential significance of the Yamal project as a new source of LNG, American LNG shipments are also starting to arrive in Asia.

Mitsui and Mitsubishi must examine whether Arctic LNG can be competitive under these conditions. They also have to consider ramping up production at Sakhalin-2, which already has a 10-year track record, as a potentially quicker alternative.

Complicating matters further is Russia's relationship with Saudi Arabia, the world's largest exporter of crude oil, which has also been hit by the shale revolution. Moscow and Riyadh have teamed up to oppose rising shale oil production and to cut output in an effort to stabilize prices.

Their cooperation may not stop there. Saudi Arabia is looking to become an international energy player, focusing initially on building a "global gas" business, Energy Minister Khalid al-Falih told The Financial Times. The Russian Arctic-2 project is a potential candidate for this effort, and al-Falih has indicated that Riyadh is interested in buying a 30% interest from Novatek.

"If Russia and Saudi Arabia take the lead on the project, Japan will be overshadowed," a Japanese source warned. Tokyo, caught in the middle of the battle among Moscow, Riyadh and Washington for energy dominance, is unlikely to emerge unscathed.

Analysis: Low LNG prices, noncommittal Asian investors hit LNG projects

Singapore – A prolonged period of low LNG prices is keeping Asian buyers from committing to offtake agreements to meet future gas demand, which means that many new investment-starved gas projects may not see the light of day.

Traditional projects need committed buyers for their gas, before they can proceed to a final investment decision. As buyers remain on the fence,

LNG projects are starting to fall behind deadlines and some risk being cancelled outright.

The exceptions are some big-ticket projects backed by investors with deep pockets, such as the expansion of Qatar's mega-trains by the middle of the next decade and the Qatar-backed Golden Pass LNG project in the US.

"We expect several further FIDs to be taken in 2019. But this

is a race with clear frontrunners, and the finish line is well in sight," S&P Global Platts Analytics said in its 2019 outlook report. "LNG buyers remain reluctant to sign long-term contracts, and hence project developers that are able to finance a project without firm offtake agreements seem to be in the driving seat," it said.

This means that projects with unconventional business models are more likely to push forward, like LNG Canada, a Shell-operated LNG project in western Canada, where equity owners are Asian national oil companies, who will off take the gas produced.

Another option has been to sign up with commodity trading houses and portfolio players. For 2018, Gunvor delivered around 11 million mt of LNG – the equivalent of 176 shipments, while Trafigura traded roughly 9.9 million mt of LNG in the same year, according to company and regulatory data.

KICKING THE CAN DOWN THE ROAD

Depressed LNG prices are a major reason for the lack of urgency among buyers. Spot Northeast Asia LNG prices this winter failed to hit their seasonal peak.

The Platts JKM for April delivery cargoes was assessed at $6.025/MMBtu on Friday, the lowest in 18 months and the market was still struggling to find a bottom.

"It's really hard to sell your umbrella when it's sunny outside," Texas LNG's chief executive Vivek Chandra said at the LNGgc conference in Singapore last week. Texas LNG is awaiting FID for a 4 million mt/year export terminal in south Texas in two phases.

"Right now you're sitting in the situation where JKM is six bucks and the traders are calling you every day saying–'take my ship take my ship.' And you're thinking, there's a lot of food in the buffet. I'll wait," Chandra said.

LNG markets are expected to see record supply in 2019, with the glut lasting until the early years of the next decade, after which a projected tightening could lead to higher prices. Platts Analytics expected JKM to bottom out in 2020 and 2021 at $7.43/MMBtu and $8.04/MMBtu, respectively.

Bernstein Research projects that LNG supply growth is likely to fall off a cliff post-2020 due to a paucity in new project approval, and requiring at least 50 million mt/year of new capacity to be approved over the next two years to avoid a deficit.

Uncontracted demand by the world's seven largest LNG buyers – CNOOC, CPC, JERA, KOGAS, PetroChina, Sinopec and Tokyo Gas – could quadruple to 80 million mt/year by 2030, according to Wood Mackenzie's research director Nicholas Browne. These suppliers together account for more than 50% of the global LNG market.

TANGLED IN TRADE WAR

Some of the most vulnerable are part of the so called "second wave" of US LNG projects, with exposure to Asian consumers, mainly China.

Their predicament has been complicated by the trade war.

Chinese buyers were unofficially barred from signing long-term agreements with US LNG projects, according to an executive who was part of the Trump administration's trade delegation to Beijing in 2018.

Before the imposition of the 10% retaliatory tariff on US LNG, China was taking nearly 15% of US LNG cargoes. After the tariffs in November, only three or four have reached China.

China spent the last four months swapping US-origin cargoes with non-US cargoes, Tullet Prebon's head of LNG Asia Tobias Davis said at the conference.

Last week, officials said they were ready to shut the $43 billion Alaska LNG project for exporting North Slope gas if customers did not show up.

“All American projects are not getting traction in Asia,” Texas LNG’s Chandra said.

Like other US second-wave projects, Texas LNG has several memorandum of understanding with Chinese customers that have not materialized.

It is unclear if an upcoming US-China trade deal will fully resolve the impasse between the countries.

The prospects of US LNG for Asian customers are further complicated by the long shipping distance, recent volatility in freight costs, the Panama Canal nearing full capacity and competition from Russian pipeline gas in China.

Qatar, EU sign landmark air transport agreement

Qatar and the European Union initialled a comprehensive air transport agreement at the European Commission headquarters in Brussels on Monday.

The first of its kind ever between the EU and a Gulf Co-operation Council (GCC) member state, the agreement allows for open airspace between Qatar and all the EU member states with unlimited access to their respective territories, in addition to daily shipment flights between the two sides.

The agreement was initialled by HE Qatar's Civil Aviation Authority (CAA) Chairman Abdulla bin Nasser Turki al-Subaey and Head of Unit, International Transport Affairs, Directorate-General for Mobility and Transport, Carlos Acosta.

HE the Minister of Transport and Communications Jassim bin Seif Ahmed al-Sulaiti, HE Qatar Airways Group Chief Executive Akbar al-Baker and Qatar's ambassador to Belgium Abdulrahman bin Mohamed al-Khulaifi attended the signing.

HE the Minister of Transport said: "This agreement, which reflects the EU's trust in Qatar's potentials, will allow for the liberalisation of the fundamental mobility rights between Qatar and EU markets – one of the oldest and largest in the world in the realm of air transport."

"This will contribute to increasing the mobility, tourism and trade exchange between Doha and EU capital cities, widening

the partnership with EU countries and developing our national carrier's network, thus supporting economic growth across all sectors," the minister added.

"This agreement," HE al-Sulaiti noted, "is a completion to the pivotal role the State of Qatar has been playing in developing the global air transport industry and also boosts Qatar's ranking as one of the leading countries in the region in air transport."

He added: "The agreement also recognises the key role our civil aviation bodies play and their compliance with global standards as well as the role of Qatar Airways, which is widely recognised as one of the best carriers in the world and the best in terms of efficiency and quality, while consistently reporting the highest growth rates regionally and universally."

HE al-Baker said: "This historic landmark agreement will offer a host of opportunities for airlines in Europe and Qatar to collaborate and co-operate together, ensuring fair access to markets, competing for market share based on products and services that the customer wants and is willing to purchase."

HE al-Subaey noted the significant role the agreement would play in opening up future horizons for broader co-operation between Qatar and the EU member states, as well as boosting their bilateral relations.

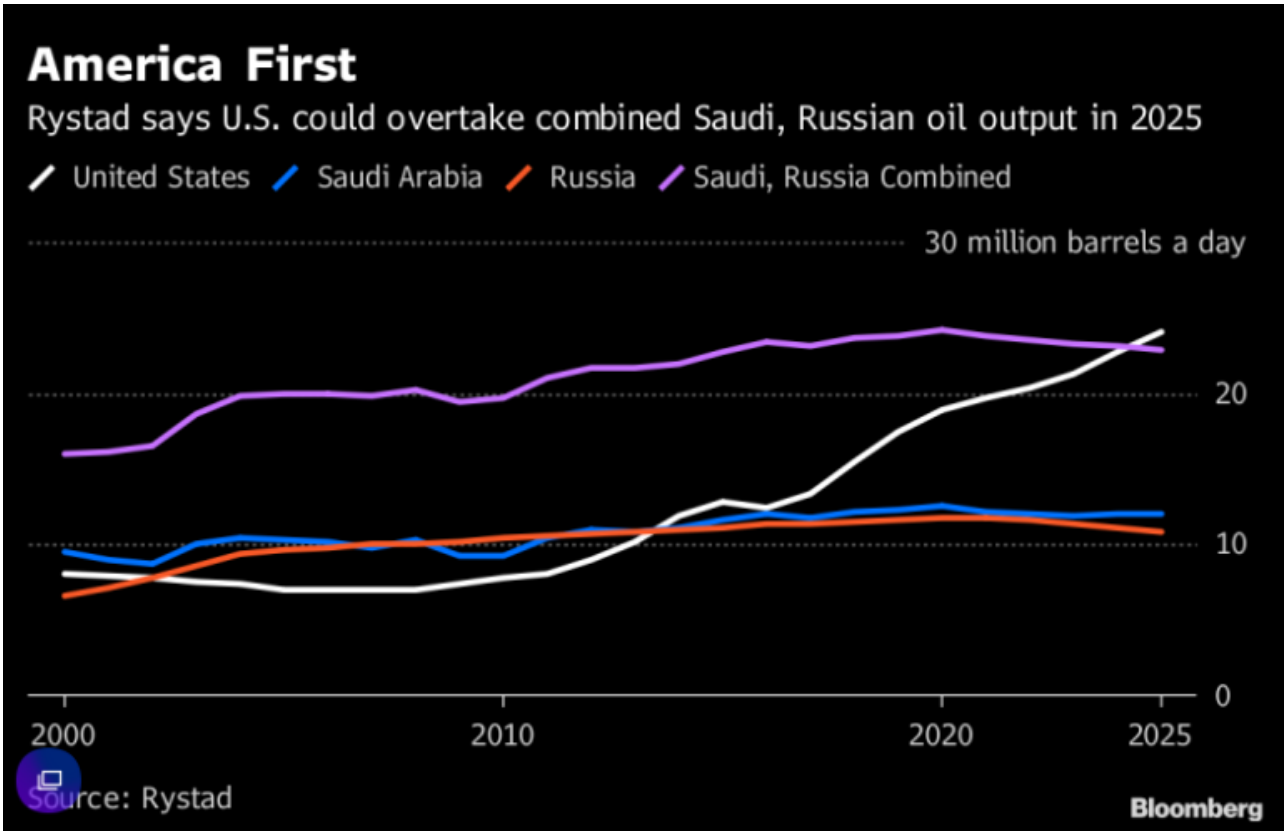
With this agreement in place, he said, Qatar could upgrade its mobility rights and increase its cooperation with the EU member states in all aviation aspects.

He said the agreement was a historic event, particularly under the unjust blockade on Qatar and confirmed that the country is continuing to meet ever more ambitious targets in the aviation industry, which is one of the country's most active economic sectors.

"This event comes in the context of the significant development Qatar's air transport industry has been witnessing. It also fits in our plan for exploring more new opportunities to enable our national carrier to reach as many destinations as it can around the world. In addition, it

enables Qatar Airways to boost its operational processes; something which helps widen Qatar-EU co-operation and secure a common ground for airlines from both parties to explore and find new gateways for broader cooperation and co-ordination.”
The agreement provides a new level of competition for carriers in Europe and Qatar.
Both parties are expected to take bold steps through agreeing upon the terms and conditions relating to fair competition, the environment, consumer protection, social aspects and transparency, in addition to an item relating to doing business under which Qatar will no longer force European carriers to have a local sales agent to be able to operate flights to Doha.
The agreement was initialled following a series of consultative meetings and full-scale discussions that covered the agreement’s terms and conditions and all particulars to conclude a final version.
The parties also discussed matters relating to air safety, aviation and navigation security and environment.

U.S. Shale Can Add a Saudi Arabia and Pay Investors, Rystad Says



(Bloomberg) — U.S. shale-oil companies are on track to add production equivalent to Saudi Arabia's output by 2030, without needing the external financing the industry's boom has relied on so far, according Rystad Energy AS.

"They are going to be very profitable, they are going to be able to return surprisingly good cash amounts to investors and still grow one Saudi Arabia," said Per Magnus Nysveen, senior partner at the Oslo-based consultant.

Although the shale revolution has helped American oil production more than double since the start of the decade, its dependence on debt and equity to grow production volumes while offering limited returns to investors has raised doubts about its sustainability.

That trend seems to be reaching a tipping point, with drillers entering a new era of discipline in which they've cut capital spending and launched share buybacks.

The frugality will continue during the shale industry's coming expansion, which will see it add about 1 million barrels a day

of production a year through to the end of the next decade, effectively creating a new Saudi Arabia, according to Rystad.

“The financing party is over,” he said. But drillers “have enough cash from the producing wells to finance quite a lot of capex, so they don’t need this financing any more.”

Companies have been cash-flow neutral this year, and will be “very positive” in 2020, Nysveen said in an interview in London. Drillers learned to squeeze costs during the market downturn in the middle of this decade, slashing the oil-price needed to produce a barrel by half to about $40, Rystad estimates.

Despite the flood of American crude, oil markets are unlikely to become oversupplied as demand is healthy and output is declining at ageing fields around the world, said Nysveen. In fact, markets will become “dangerously tight” as the growth in shale output levels off toward the end of the next decade, Nysveen predicts.

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Qatargas supplies commissioning LNG cargo to

India’s Ennore terminal

Doha: Qatargas has supplied a commissioning Liquefied Natural Gas (LNG) cargo for India’s newest LNG receiving terminal, Ennore, near the southern Indian city of Chennai.

The commissioning LNG cargo was delivered onboard the vessel ‘Golar Snow’ on 25th February 2019 by the Swiss commodity trader, Gunvor, to the state-owned Indian Oil Corporation Limited (IOCL), which owns and operates the five million tonnes per annum (MTPA) terminal. Qatargas sold the cargo Free On Board (FOB) basis to Gunvor.

Ennore will be India’s fifth operational LNG terminal and the first LNG terminal on the East Coast of India. Once fully commissioned, Ennore will provide regasified LNG to anchor customers, including Chennai Petroleum Corporation Limited, Madras Fertilizers Limited, and Manali Petrochemicals.

Qatar has established a strong partnership with India since July 1999 when Qatargas started supplying LNG to Petronet. Since then it has delivered over 1,500 cargoes under its various long term sales and purchase agreements as well as

supplying significant volumes into the short term/ spot market.

India is a key market for Qatargas given its geographical proximity and growth potential. In addition to the Ennore Terminal, terminals located at Mundra and Jaigarh are also due to be commissioned in the near future as well as a host of other gas related infrastructure projects. These additional terminals will increase India's capacity to import LNG from 30 MTPA to 44 MTPA – a 46 per cent increase as India continues to make strides in achieving its ambitious target of 15 per cent gas in the energy mix.

Access to Venezuela's oil fields fuels Putin's support for Maduro

Russian President Vladimir Putin and Chinese President Xi

Jinping have each championed a model of authoritarian capitalism (call it “development with a dictator’s face”). But what neither leader seems to have anticipated is that the Russian and Chinese commercial sectors are becoming political forces in their own right, increasingly bringing pressure to bear on policymaking.

Over the past two decades, Russian and Chinese multinational corporations – many of them awash in cash – have become powerful foreign-policy tools for their respective regimes. But they were once seen as modernising forces that would help open up business and society alike. With energy giants like Gazprom and Rosneft promising to bring commercial values to backward Russia and the newly independent former Soviet states, Anatoly Chubais, a key architect of Russia’s privatisation programme, touted them as the vanguard of a new “liberal empire.” (Insofar as these firms also bound the former Soviet republics closer to Russia, so much the better.)

Likewise, in China during the presidencies of Jiang Zemin (1993-2003) and Hu Jintao (2003-2013), the rise of banks like the Industrial and Commercial Bank of China and the Agricultural Bank of China, and of energy and heavy-industry firms like Sinopec, Sinochem, and the China Railway Construction Corporation, were seen as harbingers of modernisation. Yet today, no one could mistake these firms for the equivalent of an ExxonMobil or a Microsoft. With top executives often parachuting directly into the boardroom from high political office, Chinese mega-corporations have long represented a merger of business and the state.

Moreover, as Gazprom, Rosneft, and the Chinese technology giants ZTE and Huawei have grown more essential to their respective governments, business and state interests have become even harder to disentangle. In the interest of their “national champions,” both the Russian and Chinese governments now seem to be pursuing policies they might not have chosen otherwise.

This dynamic is clearly on display in Venezuela. Through its affiliation with Venezuela’s state oil monopoly, Petróleos de

Venezuela (PDVSA), Rosneft has funnelled upward of $17bn in loans to the Chavist regime over the past decade. Meanwhile, Rosneft gained 3mn tonnes of oil in 2017 from its operations in Venezuela; more generally Russia has invested in many Venezuelan industries, from banking to bus assembly. At the same time, Venezuela has been one of the largest buyers of Russian weapons among Latin American countries.

Owing to these debts and other economic ties, Putin has little choice but to back the Venezuelan strongman Nicolás Maduro's crumbling regime, even as public support in Russia for the Kremlin's foreign interventions declines. Rosneft's interests in Venezuela are simply too deep for it to withdraw, especially now that Western sanctions have crippled the firm's ability to secure financing in international markets.

Russia's support for Maduro does not rise to the same level as its commitments in Syria, where its relationship with the Assad family goes back decades. Rather, its continued engagement in Venezuela reflects a cold, hard business calculation. According to Reuters, private security contractors with close ties to the Kremlin have been sent to defend Maduro. At the same time, there have been unverified (but plausible) reports of Russian planes departing Venezuela with shipments of gold, as payment for the country's debts. Putin knows that if National Assembly President Juan Guaidó takes power, those who stood with Maduro will likely be ousted, and Russia's privileged access to Venezuela's oil fields revoked.

In monetary terms, Maduro's fall could mean even larger losses for China, which has investments in Venezuela estimated to be worth around $60bn – at least three times more than Russia's. Like Russia, China got into bed with the Venezuelan regime in the 2000s, when the country was flourishing under former President Hugo Chávez. While China secured a sorely needed source of oil for its fast-growing economy, Chávez was able to reduce Venezuela's reliance on the US as one of its leading export markets. In the meantime, Chinese tech giants have aided the Maduro regime in its domestic surveillance efforts,

and (like Russia) China has sold Venezuela expensive weapons. Still, should Maduro fall, China may be less exposed than Russia. The Chinese have been careful to cultivate contacts among various elements of Venezuelan society, including the opposition. And while China still supports Maduro officially, it has not followed Russia in accusing the US of an attempted coup.

This suggests that China wants to avoid the kind of radical steps that Russia is taking. The Kremlin is now actively competing with the US to influence the course of events in Venezuela, and has described the US attempt to deliver humanitarian aid across the Colombia-Venezuela border as a ruse to smuggle in weapons for the opposition.

China's moderate behaviour no doubt owes something to its ongoing trade negotiations with the US. Before extending his deadline for imposing higher tariffs on Chinese imports, US President Donald Trump indicated that Huawei and ZTE might be included in a final Sino-American trade deal. That would certainly please Xi, whose paramount interest is to protect both firms' economic might.

With the ability to bar US companies from selling crucial inputs to Chinese firms, the Trump administration could inflict serious harm on both ZTE and Huawei. Huawei already stands accused of conspiring to violate US sanctions on Iran, leading to the arrest of its chief financial officer, Meng Wanzhou, in Canada this past December. And ZTE has pled guilty to similar charges, paying penalties of $1.4bn in 2017.

At the end of the day, Venezuela can't hold a candle to the strategic importance of these two firms. And for the Kremlin, the calculus is the same: the prerogatives of business define the national interest. But, perhaps to Putin's chagrin, in Venezuela that calculus has produced the opposite outcome. – Project Syndicate

* Nina L Khrushcheva is Professor of International Affairs at The New School. Her latest book (with Jeffrey Tayler) is In Putin's Footsteps: Searching for the Soul of an Empire Across

Russia’s Eleven Time Zones.

Renewables super grid proposed to solve Europe’s energy dilemma

A pan-European electricity system powered by decentralised renewable energy supply and connected across a high-volume super grid has been described as the least-cost option to provide an optimal pathway to achieving the goals of the Paris Agreement while at the same time solving key obstacles towards developing a functional European Energy Union.

Researchers from Lappeenranta University of Technology (LUT)

in Finland have for several years now been developing 100 per cent renewable energy super grid models for global regions, and in 2016 even developed a first-of-its-kind planetary renewable energy model.

Further, in November 2017, on the sidelines of the United Nations Climate Change Conference COP23 in Bonn, Germany, LUT researchers showcased how a 100% global renewable energy grid is not only a viable option but the most cost-effective option.

Focusing their attention on the European Union, LUT researchers recently published an article in the journal *Renewable Energy* entitled *Flexible electricity generation, grid exchange and storage for the transition to a 100% renewable energy system in Europe*which reveals the results of two scenarios: the first depicts a scenario made up of 20 European regions acting as independent energy "islands"; the second scenario depicts those same 20 regions connected through a pan-European super grid.

This second option, labelled as a "SuperSmart" energy system – as it acts as a compromise between two European Energy Union approaches that have been floated in recent years; a decentralised renewable energy Smart Grid approach, and a centralised and regulated Super Grid – would utilise decentralised renewable energy generation across the European Union combined with a super grid to facilitate pan-European energy trade.

"The results clearly show that the least cost solution is based on domestic and decentralised supply with cross-border trade, as this reduces the total electricity system cost from 69 €/MWh in 2015 to 51 €/MWh in 2050," said Christian Breyer of the LUT Solar Economy group who coordinated the research.

"A substantial economic benefit through cross-border trade is worth 26 b€ per year, by trading only 12% of total end user

electricity demand in Europe.”

“A SuperSmart approach respects the unique contributions that different regions of Europe can make while adhering to a clearly defined target of net-zero greenhouse gas emissions by 2050” added Michael Child, LUT researcher and lead author of the research.

The study modelled the two scenarios out to 2050 and considered the current capacities and ages of power plants, as well as project increases in future demands. Further, the LUT study weighs important elements of the European power sector which are not always taken into account by other modelling studies.

Specifically, the study looked at prosumers – those who both produce and consume energy – and the impact they have on the amount of energy that flows through a centralised grid and found that up to 6% less peak interconnection capacity would be necessary when considering prosumers, which naturally leads to lower costs.

Germany Set to Draw More Russian Gas, Regardless of What Trump Says

Germany is preparing one of its biggest sustained increases in natural gas consumption in almost two decades, regardless of U.S. admonitions that it shouldn’t draw so much of its energy from Russia.

Gas will be one of the main beneficiaries from Chancellor Angela Merkel’s effort to close coal and nuclear plants, which generate half of the nation’s electricity. While the government is seeking to spur renewables, industry executives, energy forecasters and investors say that more gas will be needed to balance the grid when power flows ebb from wind and solar farms.

That outlook helps explain why Merkel is allowing construction of the Nord Stream 2 pipeline from Russia and encouraging new facilities to import liquefied natural gas. In the years ahead, Germany may need much more gas to make up for closing power stations if it falters in its 500 billion-euro ($568 billion) effort to shift toward cleaner fuels.

“Natural gas demand has to go up at least in the short term to make up for the loss of coal,” said Trevor Sikorski, head of natural gas, coal and carbon at Energy Aspects Ltd., an industry consultant in London. “That is probably why Germany’s government is keen for Nord Stream 2.”

Range of Views on Germany's Gas Demand

Forecaster	Increase	Change	View
Energy Aspects	Maximum 4 BCM by 2022	4%, in comparison to 90.2 billion cubic meters consumed in Germany in 2017, according to BP's report	Sees intense competition from other energy sources like solar and wind
Oxford Inst. For Energy Studies	5-10 BCM by 2022	Maximum 11%,in comparison to 90.2 billion cubic meters consumed in Germany in 2017, according to BP's report	Gas has opportunity to grab market share as coal and nuclear plants shut
Bloomberg Intelligence	5 BCM by 2022	5.5%,in comparison to 90.2 billion cubic meters consumed in Germany in 2017, according to BP's report	Renewables likely to capture the majority of the energy gap
German LNG Terminal	100 BCM a year	111%, in comparison to 90.2 billion cubic meters consumed in Germany in 2017, according to BP's report	Coal and nuclear leaving the grid, plus declining gas production in Germany and Netherlands, will create a shortfall that gas can fill
Zukunf Erdgas (industry group)	50-81 TWh a year by 2022	From 5% to 7%, in comparison to Zukunft Erdgas estimates on the current consumption	Expects coal exit will double the use of gas for electricity generation
BloombergNEF	From 63 TWh in 2030 to 91 TWh in 2040	44%, considering that gas will maintain relative stable level of generation through the 2020s	Sees surge in gas use to balance variable power flows from renewables
Wood Mackenzie	119 TWh by 2022	56%, in comparison o the 76 TWh supplied in 2018	Expresses outlook in terms of gas supply, which will rise with new pipelines and LNG

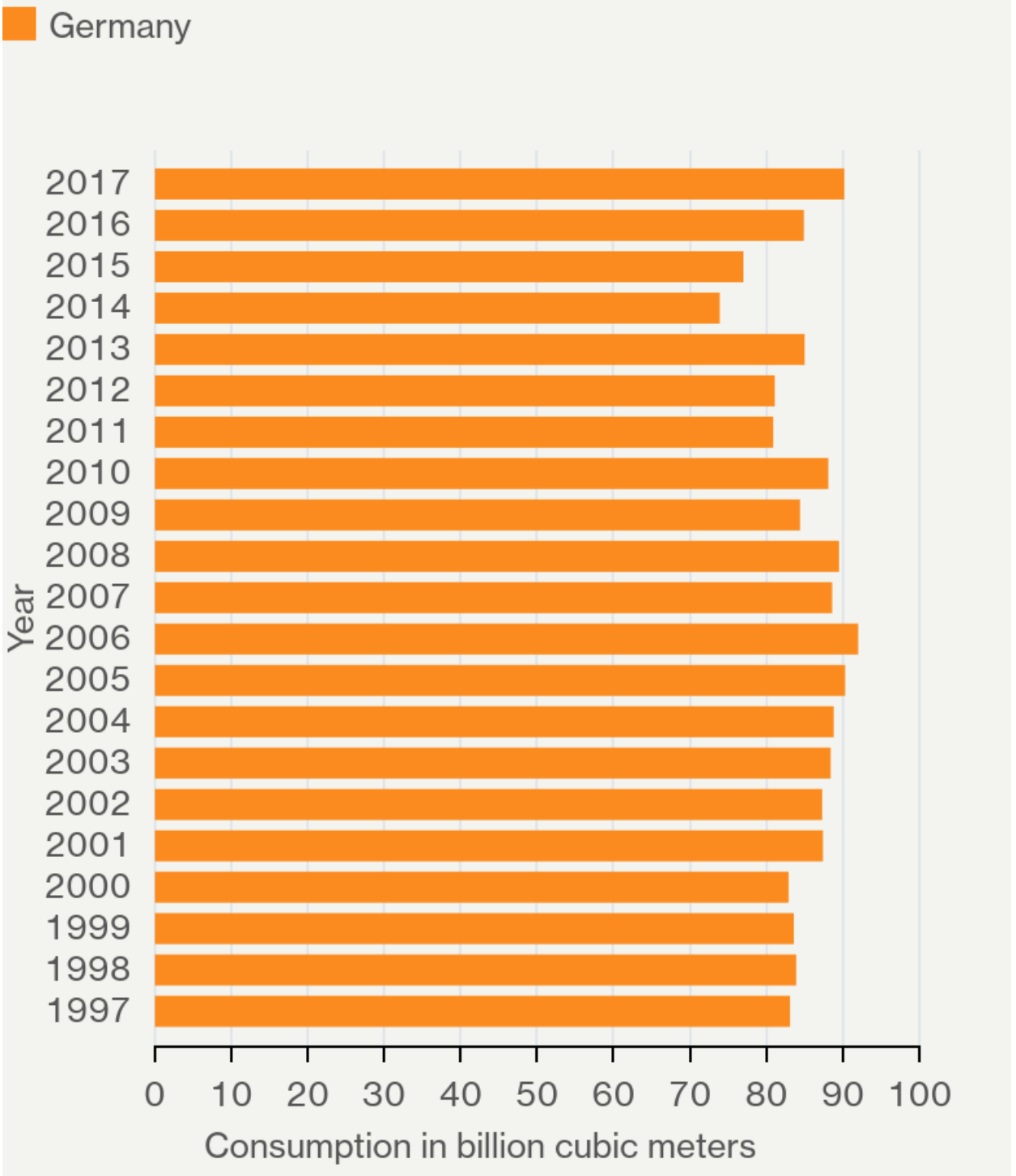
There’s a number of issues clouding the outlook for how much new gas Germany will need and when. Those include a lack of clarity on which coal plants will close and when, what restraints the government imposes on the spiraling cost renewables and whether Germany can rely on neighboring nations to make up for temporary shortages on the grid.

A further complication is the assessment forecasters are making, including differences in their forecasting horizons. Even so, almost all of them are looking for gas demand in Germany to grow — some like Energy Aspects see a few percentage points of expansion and others like the import plant promoter German LNG Terminal anticipate demand doubling.

“It is very much moving to the gas-plus-renewables power future that we advocate as opposed to the coal plus renewables situation,” Steve Hill, executive vice president at Shell Energy, said at an event hosted by the unit of Royal Dutch Shell Plc in London on Feb. 25.

Stable Consumption

Germany's natural gas demand eased with economic slump early in the decade then shot up in the past three years as nuclear reactors closed



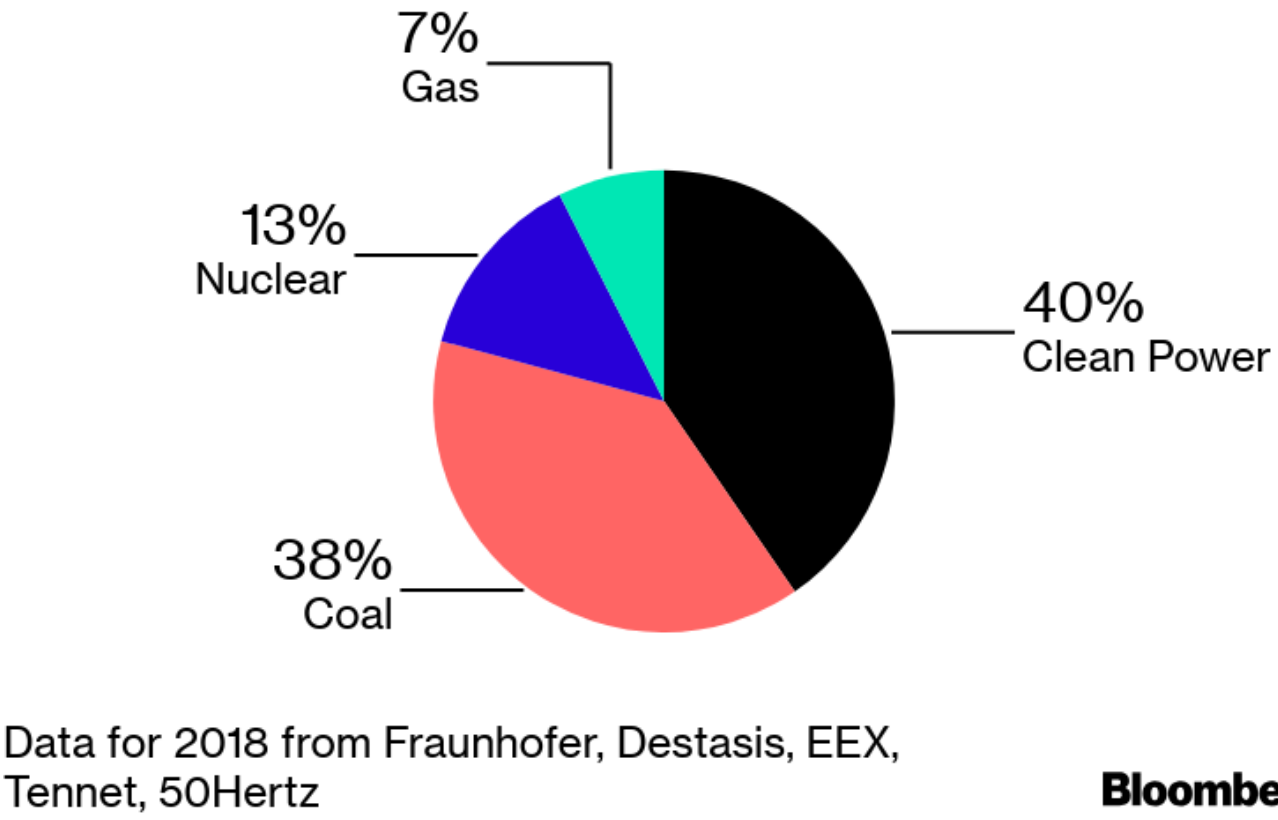
BP Statistical Review of World Energy 2018

Bloomberg

Those forecasts mark a departure from the past two decades, when the solar industry took off and left demand for gas broadly steady. Gas use surged 22 percent in the past three years as atomic sites closed in the wake of the 2011 meltdown at the Fukushima plant in Japan. That largely returned flows to the levels prevailing since 2000, making up for a dip earlier in the decade when the economy slowed.

Now, Germany is starting to think about additional sources of electricity as it winds down its coal plants to meet its climate commitments under the Paris agreement at the same time as it is shuttering the atomic units. While renewables have been gaining rapidly in recent years and will continue to do so, the grid needs a source of supply that can make up for when wind and solar don’t work.

Natural gas is the most obvious choice. It burns cleaner than coal and can feed plants that start and stop when grid dispatchers ask.



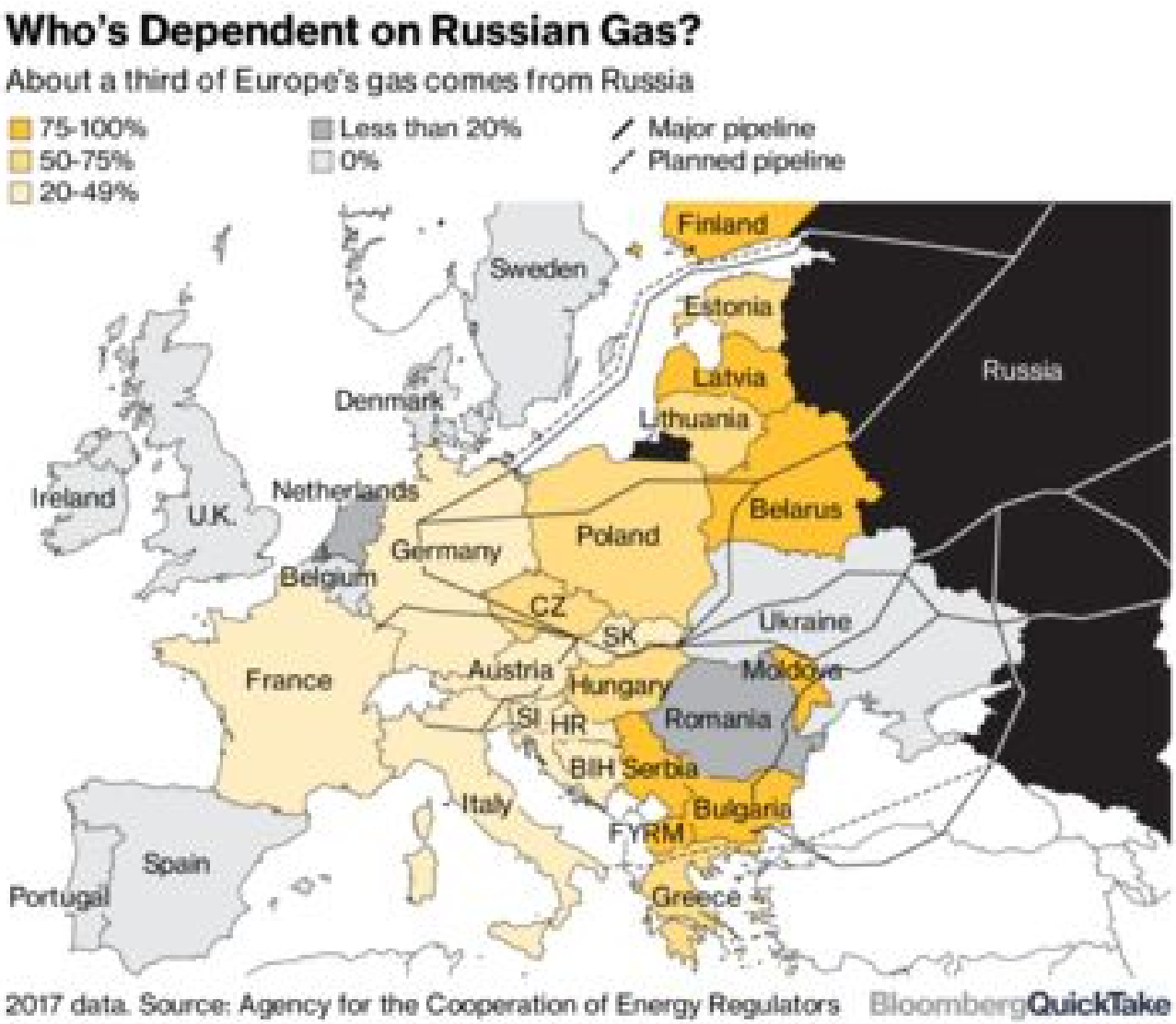
“There is certainly more room for natural gas,” said Jean-Baptiste Dubreuil, senior natural gas analyst at the International Energy Agency in Paris. “Coal is baseload, and the question now is to what extend that baseload can be replaced by renewables. Where it is not possible, it will be for gas to step in.”

Drawing more gas risks angering the U.S., which wants Germany along with the rest of Europe to develop alternatives to Russian flows. Russia currently feeds a significant share of Germany’s gas needs and is building the Nord Stream 2 pipeline underneath the Baltic Sea to add to the ways it can bring in supply.

The 1,220 kilometer (758-mile) Nord Stream 2 undersea link to Germany initiated by Russia in 2015 is due to be complete in 2019.

The state pipeline champion Gazprom PJSC has been pumping at near record rates into Europe and will bring on that new route as early as the end of this year. Gazprom isn’t the only company gearing up to supply more.

Three German towns — Brunsbuettel, Stade and Wilhelmshaven — are lobbying hard to win federal support to build Germany’s first LNG terminal. That would allow countries from Qatar to Algeria and even the U.S. to send ships with the super-chilled fuel to Germany. And tapping LNG to balance the grid raises separate concerns about security.



2017 data. Source: Agency for the Cooperation of Energy Regulators

“The more Europe bets on LNG, the more dangerous its reliance on imports can get,” said Manfred Leitner, executive board member overseeing downstream at the Austrian oil company OMV AG, which is helping finance the Nord Stream 2 link. “LNG is simply the flexibilization of gas in terms of destination, which means more competition among geographical regions. It is more expensive and less reliable than pipeline natural gas.”

A number of risks could slow or even halt the gas expansion — starting with unseasonably warm weather across the northern hemisphere that depressed demand for heating in Asia and Europe this winter. To refine their forecasts, analysts are watching:

- Whether more homes shift toward gas and away from electricity for heating
- How quickly electric cars spread, which will have a big impact on power demand
- Goals that Germany sets for use of renewables, currently envisioning 65 percent of electricity supply by 2030
- Competition for gas coming from renewables as the cost of wind and solar falls
- Which coal plants close first, since the most polluting units using lignite also are in economically depressed areas where the government needs voter support
- Whether Germany moves to limit gas use either because of pollution or climate concerns

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IEA Holds Workshop on the Role of Nuclear Power in a Clean Energy System

With the aim of identifying the key issues and exploring the future of nuclear power, the International Energy Agency held a workshop on 25 February on the role of nuclear power in a clean energy system.

The event brought together representatives from IEA member countries, industry leaders and experts to examine the role of nuclear energy in mature power markets and the implications of an uncertain future for nuclear energy for energy security, the economy and the environment.

“Nuclear energy plays a major role in both energy security and sustainability in today’s energy mix,” said Dr Fatih Birol, the IEA’s Executive Director, in his opening remarks. “However without appropriate policy attention, its contribution will shrink, creating challenges for meeting our energy policy goals in the future.”

The workshop featured Jean Bernard Lévy, the Chairman and Chief Executive Officer of Électricité de France, Michal Kurtyka, Poland’s Deputy Minister of Environment and President

of COP24, and John Parsons from the Sloan School of Management at MIT.

Other speakers included Minister of State Peter Kaderják from Hungary, Deputy Commissioner Shin Hosaka from Japan, Deputy Minister Rene Nédela from the Czech Republic and Assistant Secretary Ted Garrish from the United States Department of Energy.

The workshop focused on four themes: the outlook for nuclear power in advanced economies; the economic position of nuclear power in mature power markets; the role of nuclear power in power systems requiring more flexible resources; and the investment challenges for new nuclear power, including Small Modular Reactors.

With limited investment in new plants, the contribution of nuclear to the power mix in mature markets is set to decline significantly under current policy frameworks. In the IEA's New Policies Scenario, nuclear power production grows as two countries, China and India, are responsible for over 90 percent of net growth to 2040. By contrast, outside of Japan, nuclear power generation in developed economies is set to decline by 20 percent by 2040. This decrease will be far greater if expected investments in plant life extension or new facilities do not take place.

The IEA is preparing a special report, "Nuclear Power in a Clean Energy System" which will examine these issues and develop policy recommendations. The report will be launched at the 10th Clean Energy Ministerial meeting, held in Vancouver, in May.

Source: **International Energy Agency**
Date: **Feb 27, 2019**