Mideast can deliver 8,500bcm gas at $2.5 per MMBtu average breakeven prices by 2030: Report

The Middle East can deliver approximately 8,500bn cubic metres (bcm) of gas with average breakeven prices of $2.5 per MMBtu [Million British Thermal Units] by 2030, a new report has shown.

While recent record low gas prices are due in part to oversupply in the global market, low-cost gas reserves are abundant, and the structural cost competitiveness of gas is improving, a joint report by Boston Consulting Group, Snam and International Gas Union reveals.

The natural gas market in the Middle East is experiencing a substantial growth phase, with its cost of supply remaining competitive in the long-term despite shale revolution. The recent report reveals that the Middle East and Asia-Pacific have demonstrated the strongest growth in gas demand the past ten years – growing at an average of 4.6% per year, double the rate of global primary energy demand.

The potential future for natural gas in the Middle East is

strong, but realising it at full will require consistent support and coordinated action by industry, national governments, and the international community.
Although Middle East gas prices are largely subsidised and pricing structures largely regulated, the downward trajectory of gas prices is making gas more competitive with other fuels on a levelised basis. Costs rising above $2.5 per MMBtu indicate a requirement for subsidies to keep prices low for end users.
The report forecasts that the Middle East could maintain its best-in-class position to 2030 despite an expected rise in production costs. However, infrastructure investment will need to grow faster across gas value chains to meet growth expectations.
Implementing growth levers for gas will require concerted actions from various stakeholders. These include the development of new business models and technologies from gas industry participants, effective policies from governments, and sustained capital commitments from financial institutions.
“The Middle East’s gas market has experienced dramatic growth in the past decade. Our research shows that access to gas and growth faces limitations in terms of local market regulations and infrastructure as well as the scale of investment in cross-border pipelines,” said Pablo Avogadri, partner and associate director at BCG.
“The region could realise enormous benefits through connecting gas reserves with end-use markets at a low cost, infrastructure investment, and policy support and adoption.”

US caves to Europe over broaching climate change at G20

The US gave into pressure from Europeans over environmental concerns, allowing the word “climate” into a joint communique at a conference overshadowed by a viral outbreak that’s shaken the global economy.

Delegates at the G20 meeting in Riyadh spent much of their time talking about a global slowdown exacerbated by the coronavirus outbreak, but struggled to come up with a united response, according to people familiar with the deliberations. Countries such as Japan, and institutions including the Organisation for Economic Co-operation and Development, have been pushing for those with surpluses to spend more.

One of the main addressees of the calls for more spending is Germany. So far, the export-driven country has showed little interest in significantly boosting expenditures, arguing fiscal stimulus can’t bolster foreign demand.

On climate change, differences of opinion in the Saudi capital were more stark. The US, represented by Treasury Secretary Steven Mnuchin, objected to including a reference to the subject, according to four people familiar with the communique-drafting process. The Saudi delegation, which is hosting the event, didn’t show much enthusiasm for it either, according to two of them.

After several days of heated debate, including France finance

chief Bruno Le Maire cornering Mnuchin late on Saturday in Riyadh as the G20 economic leaders dined, the US reluctantly agreed to a mention of climate change, according to two people familiar with the matter.

A Treasury spokeswoman didn't reply to a request for comment.

As of Sunday morning in Riyadh, it was also looking unlikely that representatives would leave Saudi Arabia with any breakthroughs on a global taxation system that would apply to multi-national companies including tech giants like Alphabet Inc's Google and Facebook Inc, according to the people.

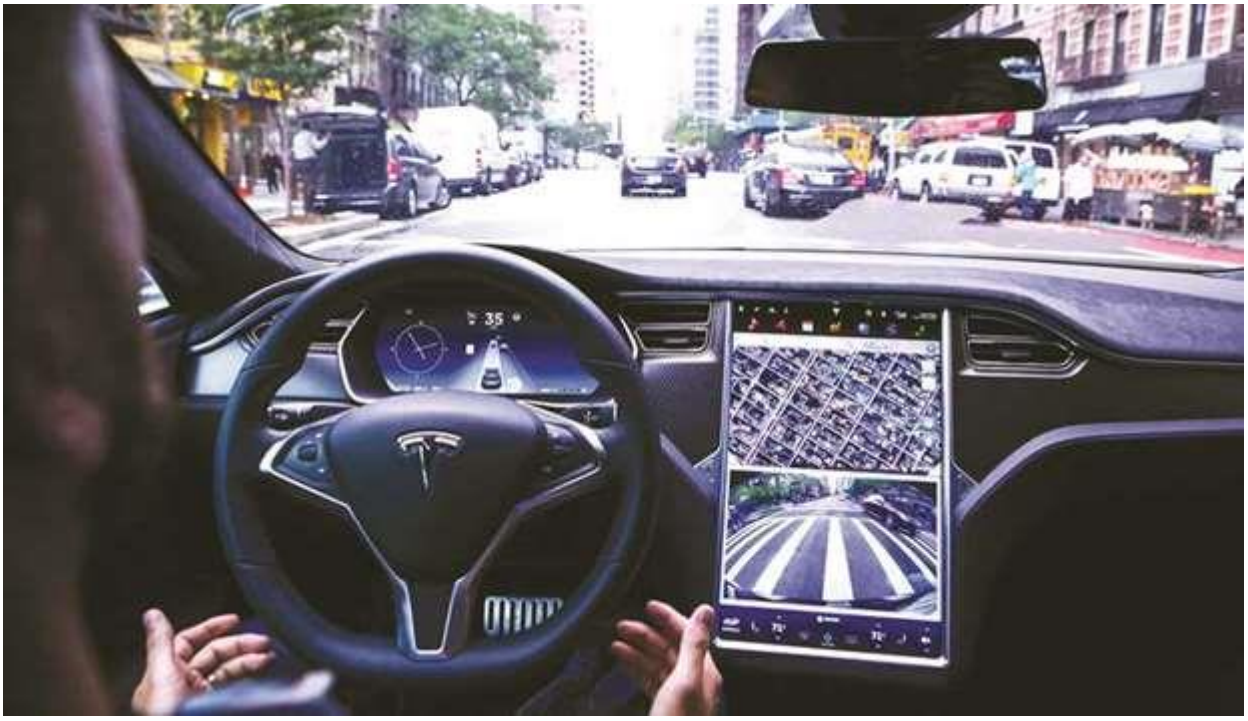
Europeans have baulked at a US proposal that new global rules should be a "safe harbour" regime. Mnuchin sought to reassure his counterpart by insisting such a system would not mean the rules would be optional, but Europeans said they still needed to fully assess the proposal.

If there's no agreement, several European nations will go ahead with taxes on revenues of multinational digital firms. That could spark a transatlantic trade war as the US says such measures are discriminatory and has already threatened France with tariffs.

France and the US have held tense discussions on the subject since France introduced a 3% levy last year on the digital revenue of companies that make their sales primarily online. The move was supposed to give impetus to international talks to redefine tax rules, and the government has pledged to abolish its national tax if there is agreement on such rules.

In introducing a so-called global minimum tax — a measure intended to prevent large companies from shifting profits to low-tax locales to avoid paying them at home — the sides are closer to compromise as there's little difference among current corporate tax rates among major economies, and little concern that the minimum tax would be too low, one person said.

Asian LNG prices rise as buying interest jumps



Asian spot prices for liquefied natural gas (LNG) rose this week after five weeks of declines, as lower prices sparked cargo purchasing interest from various buyers.

The average LNG price for April delivery into northeast Asia was yesterday estimated at around $3.00 per million British thermal units (mmBtu), some $0.30 per mmBtu higher than the front-month price last week, which was assessed for March.

“Many players are trying to buy due to low price levels, there are lots of tenders and bids,” an LNG trader said.

Fears that the coronavirus outbreak in China would weigh on demand are receding, two industry sources said, which has also supported the prices.

Indian buyers who have been active in the market over the past several weeks on an LNG price drop to record low levels, continued issuing spot and multi-cargo tenders.

India is estimated to import about 2.36mn tonnes of LNG in

February, record monthly volumes for the South Asian nation.
Among companies which sought cargoes for delivery to India were Reliance Industries with a five-cargo tender for April to June supply, Emirates National Oil Company (ENOC) with April to November delivery eight-cargo tender and Gail India with a swap tender for three cargoes in February to March.
There were single cargo tenders from India's Gujarat State Petroleum Corp (GSPC) who sought a March cargo and Indian Oil who was looking to buy an April cargo.
Prices in some of the tenders were ranging from around$2.50/mmBtu to just below $3.00/mmBtu, several market sources said.
Additionally, Qatargas' Al Hamla LNG tanker is currently on route to India's newly commissioned Mundra LNG Terminal to deliver the first commercial cargo at the facility, Kpler said.
Buying interest also came from Jordan's Nepco who was looking for an April cargo, as well as Turkey's Botas who sought three March cargoes.
Botas awarded all three cargoes, three sources said, and prices could be as low as around $2.50/mmBtu, one of them added.
There was also a tender from Taiwan's CPC in the past fortnight, two sources said, with one adding that the tender was for three cargoes to be delivered from April to June.
The number of bids on S&P Global Platts Market on Close window also grew this week, with some bids reaching $3.00/mmBtu for late March and early April yesterday.
The global LNG market remains heavily oversupplied, however, with spreads between gas prices globally shrinking and market players expecting production cuts.
Spain's Naturgy has cancelled loading of one LNG cargo in the United States in April amid a slump of global gas prices, with several other companies having considered cancellations as well, sources told Reuters.
In terms of supply offers, Gail India was selling three US cargoes as part of a swap tender to sell and buy cargoes.

Angola LNG closed a tender for mid-March delivery and opened another for late March, a market source said.
Royal Dutch Shell said on Tuesday it had temporarily suspended production at its Prelude floating LNG facility off northwest Australia following an electrical trip on February 2.

Electrical tape on speed limit signs tricks Tesla vehicles into violations

McAfee security researchers were able to trick Tesla vehicles into breaking the law by placing electrical tape on speed limit signs, in a demonstration of another vulnerability for self-driving cars.

In findings disclosed by McAfee through its official blog, the security company revealed that it fooled 2016 models of Tesla's Model X and Model S, which used camera systems by

Intel’s Mobileye, into breaking speed limits with the strategic placement of electrical tape.

Researchers applied a single piece of black electrical tape to extend the middle line in the “3” of a 35-miles-per-hour speed limit sign. This tricked the MobilEye camera into reading the sign as 85 miles per hour, forcing the Tesla vehicle’s cruise control system to accelerate the car beyond the true speed limit.

Intel disputes that the trick was an adversarial attack, as the tape may also have fooled some human drivers into thinking that the tampered sign said 85 miles per hour.

Tesla, however, stopped using Mobileye’s camera systems in 2016, which means that the newer Tesla vehicles are not affected by the electric tape trick. In addition, other vehicles using newer versions of Mobileye technology also appear to be resistant to the manipulation.

QP affi liate books 3mn tpy throughput capacity in France’s LNG terminal

Under the agreement, Qatar Terminal Limited (QTL) – a subsidiary of Qatar Petroleum – will subscribe to the

equivalent of almost 3mn tonnes per year (tpy) of the terminal's throughput capacity for the next 15 years.

An affiliate of Qatar Petroleum and the French LNG terminal operator Elengy, a subsidiary of ENGIE Group, have entered into a long-term agreement for LNG receiving, storage and regasification services at the Montoir-de-Bretagne LNG Terminal in France.

Under the agreement, Qatar Terminal Limited (QTL) – a subsidiary of QP – will subscribe to the equivalent of almost 3mn tonnes per year (tpy) of the terminal's throughput capacity for a term up to 2035.

Montoir-de-Bretagne LNG will thereby become a new LNG import terminal position for QP in Europe, facilitating the supply of Qatari and internationally sourced LNG to French and European customers.

The agreement is the result of a formal "Open Subscription Period" process that was concluded during the second half of 2019 pursuant to the rules of the French Energy Regulatory Commission (CRE).

The agreement was signed at a ceremony held in Paris on Thursday by HE the Minister of State for Energy Affairs Saad bin Sherida al-Kaabi, also the president and CEO of QP, and Sandra Roche-Vu Quang, CEO, Elengy, in the presence of Jean-Baptiste Lemoyne, France's Minister of State attached to the Minister for Europe and Foreign Affairs.

At the signing ceremony, al-Kaabi said, "By signing this agreement, we are providing France, and Europe as a whole, reliable energy supplies, as well as increased utilisation of gas as a cleaner and more environmentally friendly source of energy.

"We are also taking another step into the future by establishing a long-term partnership with Elengy well into the

next decade. And, we look forward to further strengthen this relationship in the future."

Al-Kaabi also highlighted the strong Qatari-French partnerships in general and especially in the energy sector, as well as QP's commitment to Europe's energy security.

"Qatar Petroleum has long invested in and anchored LNG receiving terminal capacity in Europe. We have also played a key role in supporting the development of vital energy network infrastructure in Europe. As the largest LNG producer, we are committed to supporting the advancement of EU energy policy and to strengthening the security, reliability and flexibility of gas supplies into Europe," al-Kaabi noted.

Roche-Vu Quang said, "Today is a key milestone for Elengy. As pioneers in the LNG industry, we are extremely proud of this agreement with our Qatari partners, a major step which hopefully will result in an even closer co-operation in the coming years. This contract secures long-term activity at the Montoir-de-Bretagne terminal.

"Our LNG hub for North West Europe offers customers optimum flexibility and an evolving range of services, from historical LNG regasification to small scale LNG, to meet the energy transition needs."

Located on France's Atlantic coast, the Montoir-de-Bretagne LNG Terminal was commissioned in 1980 and is fully regulated by the CRE. The terminal currently has 360,000 cubic metres of LNG storage capacity spread across three tanks and an annual throughput capacity of 10bn cubic meters of natural gas.

The terminal is operated by Elengy, which has over 50 years of LNG experience and operates two other terminals in France- Fos Tonkin and Fos Cavaou on the Mediterranean coast.

The ceremony was attended among others by senior executives from QP and Elengy.

The Rich World Must Take Responsibility for Its Carbon Footprint

China and other developing economies are instinctively wary of developed-country proposals to combine domestic carbon prices with “carbon tariffs” imposed on imported goods. But such policies may be the only way for rich-world consumers to take responsibility for their carbon footprint in other countries.

LONDON – The climate activist Greta Thunberg has accused developed economies of “creative carbon accounting” because their measures of greenhouse-gas (GHG) emissions, and of achieved and planned reductions, fail to consider the gases emitted when imported goods are produced in other countries. As Chinese officials quite rightly point out, about 15% of their country’s emissions result when goods are made in China but consumed in other, usually richer, economies.

China and other developing economies also are instinctively wary of developed-country proposals to combine domestic carbon prices with “carbon tariffs” imposed on imported goods. But such policies may be the only way for rich-world consumers to take responsibility for their carbon footprint in other countries.

The “creative accounting” charge would be unfair if it were meant to imply deliberate concealment; the United Kingdom’s government, for example, publishes an easily accessible carbon-footprint report. But the figures certainly support Thunberg’s point. In 2016, the UK emitted 784 million tons of GHGs on a consumption basis, versus 468 million tons on a production basis. And from 1997-2016, the UK’s consumption-based emissions fell by only 10%, compared to a 35% decrease in production-related emissions.

Likewise, the European Union’s total consumption-based emissions are about 19% higher than those related to production. And while the United States’ gap of 8% is smaller in percentage terms, on a tons-*per–capita* basis it is just as large.

China is easily the biggest counterpart to this developed-economy gap, with consumption emissions of about 8.5 gigatons per year, versus ten gigatons on a production basis. And while China’s *per capita* emissions have already overtaken the UK’s on a production basis, it will be several years before the country’s *per capita* consumption footprint exceeds that of the UK.

So, if the developed world is serious about limiting potentially catastrophic climate change, it must take responsibility for emissions that its consumption generates abroad.

There are only two ways to do this. One is for the rich world to consume less. But although more responsible lifestyles –

buying fewer clothes, cars, and electronic goods, or eating less red meat – should certainly play a role in making zero-carbon economies possible, such changes alone will not get us close to zero emissions. Nor will they necessarily close the consumption-versus-production gap, because consumption of domestically produced goods could fall as much as that of imports. And reduced imports by developed countries mean reduced exports for poorer economies, creating challenges for economic development.

The alternative is to ensure that imported goods are produced in a low- and eventually zero-carbon fashion. The ideal policy to achieve this would be a globally agreed carbon price, which would encourage producers in all countries to adopt low- or zero-carbon technologies. Absent this ideal, there are now growing calls in Europe and the US for a second-best solution – domestic carbon prices imposed in particular countries plus "border carbon adjustments," meaning carbon-related tariffs on imports from countries that do not impose an equivalent carbon price on their producers.

The immediate reaction of policymakers in China, India, and many other developing countries may be to condemn such policies as yet more protectionism in a world already destabilized by US President Donald Trump's tariff wars. And anti-Chinese political rhetoric in the US – sometimes including the absurd accusation that China is an irresponsible polluter even though its *per capita* emissions are half those of the US – creates a difficult environment for rational policy assessment.

But in most industries, the combination of domestic carbon prices and border carbon tariffs poses no threat to the competitiveness and growth prospects of exporting companies in developing economies. Imagine that European steel producers were subject to a new carbon tax of €50 ($54) per ton of CO_2 within Europe, which also applied to imports of steel from

China or anywhere else. In that case, the relative competitive position of European and foreign steel producers seeking to serve European customers would be unchanged compared to the no-tax starting point. And Chinese or Indian steelmakers, or companies in other high-emission sectors, are as well placed as their European or US peers to adopt new technologies that reduce the carbon content of their exports (and thus their liability to border carbon taxes).

Indeed, domestic carbon prices plus border adjustments are simply an alternative route to achieving the international level playing field that ideally would be secured through a global carbon price applied simultaneously in all countries. There is one crucial difference, though: if carbon taxes are imposed at the importing country's border, rather than within the exporting country, then the importing country gets to keep the tax revenue.

That fact increases the incentive for exporting countries to impose equivalent domestic carbon taxes, rather than leaving their companies to pay taxes at the importing country's borders. As a result, domestic carbon taxes with border adjustments could well prove to be an effective stepping-stone toward common global carbon prices, even if explicit international agreement on a global regime cannot be achieved.

Furthermore, such an approach suggests a potentially attractive way to encourage wider acceptance of border tariffs as being legitimate, necessary, and unthreatening. To be sure, the revenues from any carbon taxes levied on domestic producers should be used within the domestic economy – whether to support investment in low-carbon technologies or as a "carbon dividend" returned to citizens. But there is a good argument for channeling the revenues from carbon tariffs to overseas aid programs designed to help developing countries finance their transition to a zero-carbon economy.

Thoughtful developing-economy negotiators should argue for

such revenue transfers, rather than opposing a policy that developed countries will have to deploy. After all, richer economies must not only drive down their own industrial emissions, but also take responsibility for those that their consumption is generating elsewhere in the world.

Gas demand in transport sector to rise 3.5% annually to 478bcm in 2050: GECF

Gas demand in the transport sector has been forecast to rise at an annual pace of 3.5% over the GECF outlook period (until 2050), much faster than in other sectors, achieving about 478bcm in 2050. Transport utilisation will account for 8% of global gas consumption, Doha-based Gas Exporting Countries Forum (GECF) said in its latest outlook. In 2018, natural gas

demand in the transport sector totaled 157bcm, constituting 4% of global gas consumption. Nearly 56% (87bcm) was related to the usage in pipeline transport, 44% to the road (58bcm) and marine (11bcm) segments, GECF said in its 'Global gas outlook 2050' released in Doha recently. GECF forecasts show that this robust gas demand growth rate will be encouraged by important progress in natural gas vehicles (NGVs), partially through policy initiatives aimed at offsetting transportation emissions, which account for more than 24% of global GHG emissions. The International Maritime Organisation (IMO) regulations are also forecast to have an impact on gas demand in transport, as the maritime industry begins to switch to Liquefied natural gas (LNG). "In spite of the growing interest of gas applications in the railway industry, demand volumes in this segment are forecast to develop at a moderate pace, while road transport will drive consumption," GECF noted. About 214bcm of incremental gas volumes to 2050 are expected to stem from the development of the global NGV market. The use of LNG as a marine bunkering will be another promising area with additional consumption of 76bcm within the forecast horizon. Overall, global gas demand in the land and marine transport segments (excluding gas used in pipeline transport) is projected to rise by about 300bcm, from 70bcm in 2018 to over 370bcm by 2050. It will correspond to a growth rate of 5.4% per year, GECF noted. The increasing availability of natural gas, together with its economic and environmental advantages, make NGVs a very prominent alternative to diesel and gasoline-based engines in road transport. Liquefied petroleum gas (LPG) is also widely used across the world. However, being a mixture of propane and butane it is not as clean as natural gas, whose main chemical component is methane. Over the last decades natural gas, predominantly in the form of compressed natural gas (CNG), has made remarkable progress in various sub-markets – passenger buses, light commercial vehicles (LCVs) as well as heavy-good vehicles (HGVs) and special mining and haulage company trucks. Surging by almost 17% per year, natural gas demand in the road transport segment increased from 4bcm in

2000 to about 58bcm in 2018. Major contributions to this growth came from Asia Pacific (China, India, Pakistan) and the Middle East (particularly, Iran), while Latin America countries (mainly, Argentina and Brazil) experienced moderate rise, staying around the same volumes from 2005 to 2018. In spite of the impressive growth rate, natural gas represents less than 2.5% of the total energy consumed in the global road transport market, which is currently dominated by oil-based products – gasoline and diesel – with a 96% share. As many countries are adjusting legislation to reduce the environmental impact of transportation modes and setting targets to mitigate air pollution, GECF anticipates that the role of methane in this segment will grow over the forecast period, assuming a higher uptake of NGVs and a corresponding level of gas demand. Favourable government policies and regulatory frameworks are expected to be the forces driving increasing penetration of natural gas in road transport. The natural gas share of energy demand in the global road transport market (estimated to grow from 2,154mn tonnes oil equivalent – Mtoe in 2018 to 2,420Mtoe by 2050) – is forecast to rise from 2.5% in 2018 to 10% by 2050, while petrol and diesel will go down from 96% to 83%. Over the same period, electricity use is projected to increase from 0.3% to 6%, a much more impressive growth. Given that EV penetration into all vehicle classes is underway, they are considered to be a more realistic option for the passenger, public transport and LCV segments, while the potential of NGVs could be much higher in the HGV segment, where transport costs are more vital. Moreover, environmental regulations are set to be stricter, propelling fuel replacement in oil-based products. In this context, GECF noted the future prospects of natural gas will be mostly concentrated in HGVs, driven by anticipated restrictions on the use of diesel trucks in a range of countries. The majority of gas demand is expected to come from LNG powered trucks thanks to their high annual mileage. It is worth mentioning that governments of more than 10 countries in 2017-2019 introduced forward-looking sales bans on new diesel

or petrol vehicles for 2025-2040, which represents an additional push for gas usage, GECF said.

Asian LNG prices fall on declining Chinese demand

* Several cargoes trade below $3 per mmBtu – sources

* Four Asia-bound LNG tankers divert destination – sources

* Fifteen LNG tankers floating cargoes at sea – Kpler (Updates to add graphic)

By Jessica Jaganathan

SINGAPORE, Feb 14 (Reuters) – Falling demand from China drove Asian spot prices for prompt deliveries of liquefied natural

gas (LNG) to new lows this week of around $2.70 per million British thermal units (mmBtu).

China’s transport, commercial and industrial sectors have all been affected by the fast-spreading coronavirus outbreak, traders said.

The average LNG price for March delivery into northeast Asia LNG-AS fell to $2.70 per mmBtu this week, down 25 cents from the previous week, several industry sources said.

Prices for cargoes delivered in April are estimated to be $2.80 per mmBtu, they added.

Several cargoes exchanged hands this week at below $3 per mmBtu, traders said, indicating there was too much supply in the spot market.

Russia’s Sakhalin 2 plant has sold a cargo for loading on March 16 to Japan’s Mitsui at $2.70 to $2.80 per mmBtu, industry sources said.

Gail (India) bought a cargo for delivery into Dabhol, India, on a delivered ex-ship (DES) basis for Feb. 23 to 28 delivery at $2.40 to $2.50 per mmBtu, they said.

It separately sold a cargo from the Cove Point plant in the United States on a delivered ex-ship basis into Europe for a February to March delivery, and likely did not award another cargo it had offered for loading in April from Cove Point, one of the sources said.

India’s Reliance bought a cargo for delivery into Hazira in March at $2.50 per mmBtu, the sources added.

India’s GSPC bought 7 cargoes for delivery over April to October at prices ranging from $2.50 to $3.30 per mmBtu, they said.

The spot deals for February to March are the lowest the

cargoes have ever traded, traders said.

The coronavirus outbreak that started in China and has affected more than 60,000 people globally has had a wide impact on LNG demand which had already been depressed from mild weather.

Four LNG tankers, including three Qatari vessels bound for North Asia, have changed destination or diverted after the coronavirus outbreak hit gas demand in China, sources said.

In addition, 15 LNG tankers are also flagged as “floating storage” globally, with 11 of them scattered across Asia, Rebecca Chia, LNG analyst with data intelligence firm Kpler told Reuters on Thursday.

Traders appear to have shrugged off cargo loading disruptions in Western Australia after a powerful cyclone that swept across parts of the region last weekend.

Supply was still ample with Angola LNG offering a cargo for March delivery, an industry source said. Colombia’s Calamari LNG is seeking late February delivery while Thailand’s PTT is seeking up to 2 cargoes, industry sources said.

Business must come clean quickly on climate: Carney

LONDON, Feb 14 (Reuters) – Bank of England Governor Mark Carney called on the world's businesses to publish strategies for cutting carbon emissions and adopting cleaner power sources by November, when world leaders meet in Scotland for U.N.-led climate talks.

"It's not just green assets and divestment campaigns or certain things are so brown or black. Every company ultimately has to have a plan for a transition and what the opportunities are and where the risks are," Carney said in an interview.

"For Glasgow that must be well on the path. That that is the norm. That the question doesn't even have to be asked because companies are answering that question as part of their strategy.

"And the answer is, it's the transition, stupid," he said, referencing a phrase coined by former U.S. President Bill Clinton's election strategist in reference to the U.S. economy.

Carney was speaking to Reuters a month before he leaves his

nearly seven-year posting at the helm of Britain’s central bank to take a new role as the United Nations’ envoy for climate.

The Canadian banker, who disarmed the British insurance industry in 2015 when, in a speech called “Tragedy of the Horizon,” he warned of their exposure to climate-related events, has been one of the most vocal public figures to push for better supervision and disclosure of climate risk.

The Task Force on Climate-related Financial Disclosures (TCFD), which he launched in 2015, has become a global standard that more than 1,000 companies, financial firms, governments and other organizations have adhered to.

The intentions behind it also chime with a shift of emphasis by another leading central banker, European Central Bank President Christine Lagarde.

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The intentions behind it also chime with a shift of emphasis by another leading central banker, European Central Bank President Christine Lagarde.

Carney said November's COP26 climate talks would also be a good deadline for regulators to map out how to make the TCFD framework compulsory.

"One of the things we will look at ahead at for the COP26 is 'should we have pathways to make the TCFD mandatory?' Not overnight, but through listing requirements or securities regulation disclosure standards," he said.

Such an effort needs to be global, Carney said, encompassing regions laying out their own plans for cutting emissions. The European Union recently announced a 1-trillion-euro ($1.08 trillion) effort become carbon neutral by 2050, a strategy that includes introducing a new climate law by next month.

"It would be productive if other jurisdictions that potentially will have mandatory disclosure standards… used more conventional routes than legislation, such as securities regulations or listing standards. Let's have that conversation," Carney said.

Carney could play an outsized role at November's summit, especially in view of a reshuffle of government and other senior positions by Prime Minister Boris Johnson.

Johnson last month sacked former energy minister Claire O'Neill from her role as president of the COP26 talks. Newly appointed Business Minister Alok Sharma was named to the position on Thursday.

Efforts by businesses, investors and financial institutions to disclose climate risk are gathering pace.

BlackRock BLK.N, the world's largest money manager with nearly $7 trillion in assets under management, said this month that it would take a tougher view of companies that are not properly disclosing their climate risk.

This week, BP <BP.L> set out one of the oil sector's most

ambitious targets for curbing carbon emissions, saying it would reduce its greenhouse gas emissions to net zero by 2050. BP plans to give details later this year.

“Last week, very few people would have said BP was Paris-aligned,” said Carney, referring to the 2015 global climate agreement, signed in the French capital. “They’ve jumped from towards back of the queue to the front of the queue.”

($1 = 0.9225 euros)

(editing by John Stonestreet)

Landing a Blow Against Climate Change

For the last decade, bioenergy has been confined to the sidelines of climate-policy debates, owing to the environmental problems associated with its production. But recent innovations have made this option for supplying sustainable, renewable energy not just viable, but necessary.

BONN – In the face of climate change, providing reliable supplies of renewable energy to all who need it has become one of the biggest development challenges of our time. Meeting the international community's commitment to keep global warming below 1.5-2°C, relative to preindustrial levels, will require expanded use of bioenergy, carbon storage and capture, land-based mitigation strategies like reforestation, and other measures.

The problem is that these potential solutions tend to be discussed only at the margins of international policy circles, if at all. And yet experts estimate that the global carbon budget – the amount of additional carbon dioxide we can still emit without triggering potentially catastrophic climate change – will run out in a mere ten years. That means there is an urgent need to ramp up bioenergy and land-based mitigation options. We already have the science to do so, and the longer we delay, the greater the possibility that these methods will no longer be viable.

Renewable energy is the best option for averting the most destructive effects of climate change. For six of the last seven years, the global growth of renewable-energy capacity has outpaced that of non-renewables. But while solar and wind are blazing new trails, they still are not meeting global demand.

A decade ago, bioenergy was seen as the most likely candidate to close or at least reduce the supply gap. But its development has stalled for two major reasons. First, efforts to promote it had negative unintended consequences. The incentives used to scale it up led to the rapid conversion of invaluable virgin land. Tropical forests and other vital ecosystems were transformed into biofuel production zones, creating new threats of food insecurity, water scarcity, biodiversity loss, land degradation, and desertification.

In its *Special Report on Climate Change and Land* last August,

the Intergovernmental Panel on Climate Change showed that scale and context are the two most important factors to consider when assessing the costs and benefits of biofuel production. Large monocultural biofuel farms simply are not viable. But biofuel farms that are appropriately placed and fully integrated with other activities in the landscape can be sustained ecologically.

Equally important is the context in which biofuels are being produced – meaning the type of land being used, the variety of biofuel crops being grown, and the climate-management regimes that are in place. The costs associated with biofuel production are significantly reduced when it occurs on previously degraded land, or on land that has been freed up through improved agriculture or livestock management.

Under the 1.5°C warming scenario, an estimated 700 million hectares of land will be needed for bioenergy feedstocks. There are multiple ways to achieve this level of bioenergy production sustainably. For example, policies to reduce food waste could free up to 140 million additional hectares. And some portion of the two billion hectares of land that have been degraded in past decades could be restored.

The second reason that bioenergy stalled is that it, too, emits carbon. This challenge persists, because the process of carbon capture remains contentious. We simply do not know what long-term effects might follow from capturing carbon and compressing it into hard rock for storage underground. But academic researchers and the private sector are working on innovations to make the technology viable. Compressed carbon, for example, could be used as a building material, which would be a game changer if scaled up to industrial-level use.

Moreover, whereas traditional bioenergy feedstocks such as acacia, sugarcane, sweet sorghum, managed forests, and animal waste pose sustainability challenges, researchers at the University of Oxford are now experimenting with the more

water-efficient succulent plants. Again, succulents could be a game changer, particularly for dryland populations who have a lot of arid degraded land suitable for cultivation. Many of these communities desperately need energy, but would struggle to maintain solar and wind facilities, owing to the constant threat posed by dust and sandstorms.

In Garalo commune, Mali, for example, small-scale farmers are using 600 hectares previously allocated to water-guzzling cotton crops to supply jatropha oil to a hybrid power plant. And in Sweden, the total share of biomass used as fuel – most of it sourced from managed forests – reached 47% in 2017, according to Statistics Sweden. Successful models such as these can show us the way forward.

Ultimately, a reliable supply of energy is just as important as an adequate supply of productive land. That will be especially true in the coming decades, when the global population is expected to exceed 9.7 billion people. And yet, if global warming is allowed to reach 3°C, the ensuing climatic effects would make almost all land-based mitigation options useless.

That means we must act now to prevent the loss of vital land resources. We need stronger governance mechanisms to keep food, energy, and environmental needs in balance. Failing to unleash the full potential of the land-based mitigation options that are currently at our disposal would be an unforgiveable failure, imposing severe consequences on people who have contributed the least to climate change.

Bioenergy and land-based mitigation are not silver bullets. But they will buy us some time. As such, they must be part of the broader response to climate change. The next decade may be our last chance to get the land working for everyone.