New Opec cuts to tighten markets, widen oil market deficit in H2: Emirates NBD

New Opec cuts may tighten markets considerably and widen the oil market deficit in the second half of this year, Emirates NBD said Monday.

The regional banking group forecasts Brent to average $92.50/barrel in H2, 2023.

Some members of Opec+ have announced a “surprise” production cut to take effect from May and be held until the end of the year. Saudi Arabia will cut output by 500,000 barrels per day (bpd) while several other members will also cut output substantially.

The UAE will cut by 144,000 bpd, Iraq by 211,000 bpd and Kuwait will cut output by 128,000 bpd.

The production changes will mirror “voluntary” cuts of 500,000 bpd that Russia is making in response to sanctions that have been placed on its oil exports.

“Including Russia’s cuts, the total reduction from Opec+ will

be about 1.6mn bpd though as several members of Opec are already failing to hit their output targets, the scale of the cut is likely to be smaller," Emirates NBD said in a report.
"The move surprised markets and analyst consensus. Our own expectation was that Opec+ would keep production unchanged from the levels it set in October last year when it also implemented a supply cut," Emirates NBD noted.
As recently as February this year, Prince Abdulaziz bin Salman, Saudi Arabia's energy minister, said that the "agreement that we struck in October is here to stay for the rest of the year," referring to planned cuts of 2mn bpd announced in October last year.
Since then, financial markets have endured considerable stress due to the collapse of several institutions in the US along with the descent of Credit Suisse.
That strain in financial markets did spill over into oil prices – West Texas Intermediate (WTI) futures recently hit a bottom of $64/b on March 20 – though prices were already on their way higher with WTI ending last week at $75.67/b.
The announced cuts from several Opec members will widen the oil market deficit in the second half of 2023, provided they are held for the full tenure of the agreement.
"Our prior oil market balance assumptions had a deficit emerging in H2 this year as demand was set to recover strongly from Q2 onward as China's oil demand normalised. With the new cuts from Opec+ taken into the baseline, the deficit will near on 3m b/d by Q4 this year and drain inventories down to 53 days of OECD demand. The pre-pandemic average for inventory days of demand had been about 62 days so the cuts will have a meaningful tightening effect on balances," noted Edward Bell, senior director, Market Economics at Emirates NBD.
The cuts from Opec+ ministers reinforce Emirates NBD's view that oil prices will recover from recent lows, particularly in H2.
"For now, we hold our recently revised oil forecasts unchanged – targeting Brent at an average of $92.50/b in H2 – though the cuts do provide some upside risks to that view," he said.

The World’s Most Important Oil Price Is About to Change for Good

After years of wrangling, the world’s most important oil price is about to be transformed for good, allowing crude supplies from west Texas to help determine the price of millions of barrels a day of petroleum transactions.

The shift is because the existing benchmark, Dated Brent, is slowly running out of tradable oil for it to remain reliable. As such, its publisher S&P Global Commodity Insights – better known by traders as Platts – has been forced to make a dramatic overhaul.

Its switchover was fraught with controversy and caused a lot of stress among physical oil traders. But it was necessary. BP Plc at one stage said that Dated Brent was subject

to “increasingly regular dislocations.”

But the future of Dated is now set. From cargoes for June onward, West Texas Intermediate Midland, oil from the Permian will become one of a handful of grades that set the Dated benchmark.

Here’s a look at what matters as the transition gets closer.

1. Why does it matter?

Dated, as it’s commonly known by oil traders, helps to set the price of about two-thirds of the world’s oil and even defines the price of some gas deals.

Oil producing states will often sell their barrels at small premiums or discounts to Dated, so the precise mechanics of how it is formed matter to them. In addition, the benchmark lies at the center of a complex web of derivatives, ultimately shaping Brent oil futures that get traded on exchanges.

Dated affects a host of oil prices, so even crude in Dubai could feel the effects, according to Adi Imsirovic, a veteran oil trader and senior research fellow at the Oxford Institute for Energy Studies.

2. Exactly what’s happening?

Traders will be able to offer WTI Midland for sale from the US Gulf Coast. It will be delivered into Rotterdam and then price will be netted back using a freight adjustment factor as if it’s shipped from the North Sea.

By following a careful process, Platts will evaluate if the oil is being offered at a higher or lower level than five existing grades that set Dated — Brent, Forties, Oseberg, Ekofisk or Troll.

If Platts judges that WTI Midland is the most competitive

price on offer – or actually sold – then it could set Dated.

So WTI Midland might then influence the price a seller of an Atlantic Basin barrel charges a refinery in China.

3. How will price discovery work?

Imagine the existing Dated grades, which go under the acronym BFOET, are at $80 a barrel.

A trader might pick up a cargo of WTI Midland at $79 from a terminal the US Gulf with $2 added delivery cost to Rotterdam – more than 6,000 miles and around 17 days sailing away.

Platts would need to make that delivered cargo like-for-like against the existing BFOET grades, which are transacted on a so-called Free on Board, or FOB, basis in the North Sea.

To do that, it will use what it calls a freight adjustment factor, deducting the estimated cost of transportation across the North Sea to Rotterdam. If that were to be $1 a barrel, then the implied FOB price of WTI Midland in the North Sea would be about $80.

The process will place an emphasis on Platts's assessments of tanker costs.

4. What's the timeline?

Some changes are already getting underway. In February, Platts began assessing forward prices based on the new assessment. Real cargoes of crude from the US will be allowed for inclusion from early May.

The expiry of the May Brent futures contract at end-March will rely on some trades of a June Brent exchange of futures for physical contract, which will take the changes into account.

Those key derivatives tools, along with the futures market, will determine the basis price of physical Dated Brent for

June.

An important detail in the coming weeks is just how much trading of forward Dated Brent will pick up. So far, twelve entities have conducted transactions based on the new terms, according to Platts.

Ultimately these deals will define something called the Brent Index, a once-a-month price published by ICE Futures Europe that's used for the cash settlement of futures.

"Without a forward market, there's no way to financially settle the ICE Brent contract," said Kurt Chapman, a veteran oil trader and ex-head of crude at Mercuria Energy Group, who retired in 2018 after almost three decades on the front lines of global oil trading.

5. Will the Dated be better?

Assuming traders take to the adjustments, it will be transformative in terms of the underlying volume of oil that can be transacted.

In March alone, around 60 tankers hauling around 1.8 million barrels a day of oil were expected to arrive in Europe, the highest since 2016, according to data compiled by Bloomberg.

Something like 1 million barrels a day of WTI Midland will theoretically be eligible for inclusion in Dated, although the volumes may be marginal until the trading of new Dated picks up.

6. What are the main concerns?

No two crudes are identical and eventually Platts will have to evaluate precisely how WTI Midland compares with other grades within BFOET.

Some say it is superior because of its density and sulfur

levels.

However, some European traders have also expressed worries that the properties of WTI Midland cargoes may not match up to what was stipulated when it traded. That's because WTI is actually a blend of different crudes.

It would be a problem if a cargo of oil – bought or sold with a view to setting a global benchmark underpinning prices globally – were found to have a flaw.

US terminal operators say there's not much to be concerned about. They say that the 11 terminals approved by Platts that will send crude are all able to assure consistently high quality to suit Dated.

Another issue is the cargo sizes that will be allowed to be included. At 700,000 barrels, they do not match up to the reality of current oil trading of US oil.

There has been a flood of supertankers bringing 2-million-barrel cargoes across the Atlantic. Those wouldn't qualify for inclusion in setting the Dated.

Finally, the BFOET grades all come with their own loading programs with each consignment given its own unique identifier. That gives traders clear visibility on the supply of oil. That's not yet the case for WTI Midland and could cause some uncertainty about how many cargoes are being offered.

– With assistance by Sherry Su and Sheela Tobben

The High Cost of Carbon Pricing

Amid the growing enthusiasm for carbon border taxes, Western policymakers have largely ignored the negative impact on the world's poorest countries. For carbon-pricing policies to succeed, developed countries must show their commitment to shared prosperity by enabling knowledge-sharing and fostering equitable climate finance.

NEW DELHI – Carbon pricing is all the rage these days, at least in the developed world. But while global leaders and experts – most of them from rich countries – increasingly embrace the idea of putting the "right price" on carbon, the concept remains vague and ill-defined. Worse, its growing acceptance and increasingly protectionist bent may have the perverse effect of impeding efforts to decarbonize the global economy.

The idea of carbon pricing seems like a no-brainer. Meeting even the least ambitious climate goals requires decarbonizing developed and developing economies alike. Changing the relative prices of carbon-intensive activities would encourage investors to finance renewable sources of energy and the

technological innovation needed to achieve net-zero emissions.

Fossil fuels account for most of the world's greenhouse-gas emissions, so hydrocarbons seem like a good place to start. But how? Should policymakers consider the relative price of fossil fuels, or production based on consuming them?

The two most commonly discussed forms of carbon pricing – cap-and-trade schemes and carbon taxes – are based on the carbon intensity of production. A cap-and-trade system is designed to limit greenhouse-gas emissions by dividing the total target amount into allowances that can be traded among high and low emitters. While this supposedly establishes a market price for carbon dioxide emissions, it does not consider their negative social and environmental externalities. A carbon tax, by contrast, sets a price on carbon by taxing emissions-heavy activities.

But these two models reflect a very narrow (and possibly even distorted) view of how carbon should be priced into the economic system. A 2017 report by the High-Level Commission on Carbon Prices, chaired by Joseph E. Stiglitz and Nicholas Stern, provided a much more nuanced analysis. In addition to cap-and-trade and carbon taxes, the report recommended reducing or eliminating fossil-fuel subsidies and creating new financial incentives for low-carbon projects; offsetting the negative distributional impact of carbon pricing by using the proceeds to finance policies to protect poor and vulnerable populations; and complementary policies, such as investment in public transport and renewable power. Perhaps most important, the authors noted, countries must be able to choose instruments that fit their specific circumstances, resources, and needs.

Amid the growing enthusiasm for carbon pricing and border adjustment measures, policymakers and experts have largely ignored these points. The European Union's Carbon Border Adjustment Mechanism is a case in point. When the CBAM takes

effect in October, it will impose a tax on carbon-intensive imports in order to “put a fair price on the carbon emitted during the production of carbon-intensive goods that are entering the EU” and to “encourage cleaner industrial production in non-EU countries” (emphasis added).

The CBAM will initially apply to imports of cement, iron and steel, aluminum, fertilizers, electricity, and hydrogen. At first, firms will simply have to report the (direct and indirect) emissions embedded in the goods they import. But, beginning in 2026, the EU will impose tariffs on these emissions based on the weekly average auction price of cap-and-trade allowances.

The stated purpose of this measure is to eliminate so-called “carbon leakage” and ensure that the EU’s climate efforts are not undermined by production moving to countries with lower emission standards. Effectively, it protects European firms from competitors in such countries.

By taxing imports to the EU, the CBAM imposes on exporters in other countries the nearly impossible task of measuring emissions. Most developing countries (and many developed ones) lack granular data on firm-specific emissions, not to mention the ability to track the emissions of all the inputs used. Even if such data were available, the costs of collecting and analyzing it over time would be enormous. As the United Nations Conference on Trade and Development noted in 2021, the CBAM attempts “to impose on developing countries the environmental standards that developed countries are choosing.”

The EU wants to be viewed as a global leader on climate change, but it is difficult to see the CBAM as anything but a protectionist device. While the CBAM purports to encourage countries outside the bloc to reduce emissions by imposing their own carbon taxes, the EU has done nothing to help exporting countries attract new green investment or gain

access to new technologies. In fact, it has persistently reneged on its (paltry) promises on climate finance and the commitments European leaders made as part of the 1992 Rio Agreement, restricting access to green technologies controlled by EU-based companies.

For decades, advanced economies have exported their emissions to developing countries by offshoring carbon-intensive production and then importing those goods. Now that greener technologies are available to (and largely controlled by) Western companies, developed countries promote reshoring without sharing knowledge or finance, thereby undermining low- and middle-income countries' economic prospects and ability to achieve a green transition.

In February, Republican US Senator Bill Cassidy said he would unveil an emissions tariff bill in the coming months, following similar proposals by Senate Democrats. Meanwhile, lawmakers on both sides of the Atlantic have done little to limit fossil-fuel production and trade – by far the biggest sources of CO2 emissions. The CBAM does not cover trade in fossil fuels, and neither would the proposed tariffs in the United States. If decarbonization is the real goal, rather than protecting domestic industries, then regulation and reducing direct and indirect fossil-fuel subsidies are far more promising policies.

For carbon pricing to succeed, developed countries must demonstrate their commitment to shared prosperity by enabling knowledge-sharing and fostering equitable climate finance. If they continue to focus on border taxes on goods produced (mostly) in developing countries, their carbon-pricing efforts will fail. Worse, they will exacerbate global inequality and reinforce the perception that all their lofty rhetoric about the need for international cooperation to fight climate change is merely a fig leaf for cynical and self-serving policies.

QatarEnergy enters into ‘farm-in’ agreement with ExxonMobil Canada for two offshore exploration licences

QatarEnergy has entered into a farm-in agreement with

ExxonMobil Canada for two exploration licences offshore the province of Newfoundland and Labrador in Canada.

Pursuant to the agreement, QatarEnergy holds a 28% working interest in licence EL 1167, where the Gale exploration well and associated activities are planned.

ExxonMobil Canada (operator) holds 50% while Cenovus Energy holds 22%. QatarEnergy also holds a 40% working interest in licence EL 1162, while ExxonMobil Canada (operator) holds the remaining 60%.

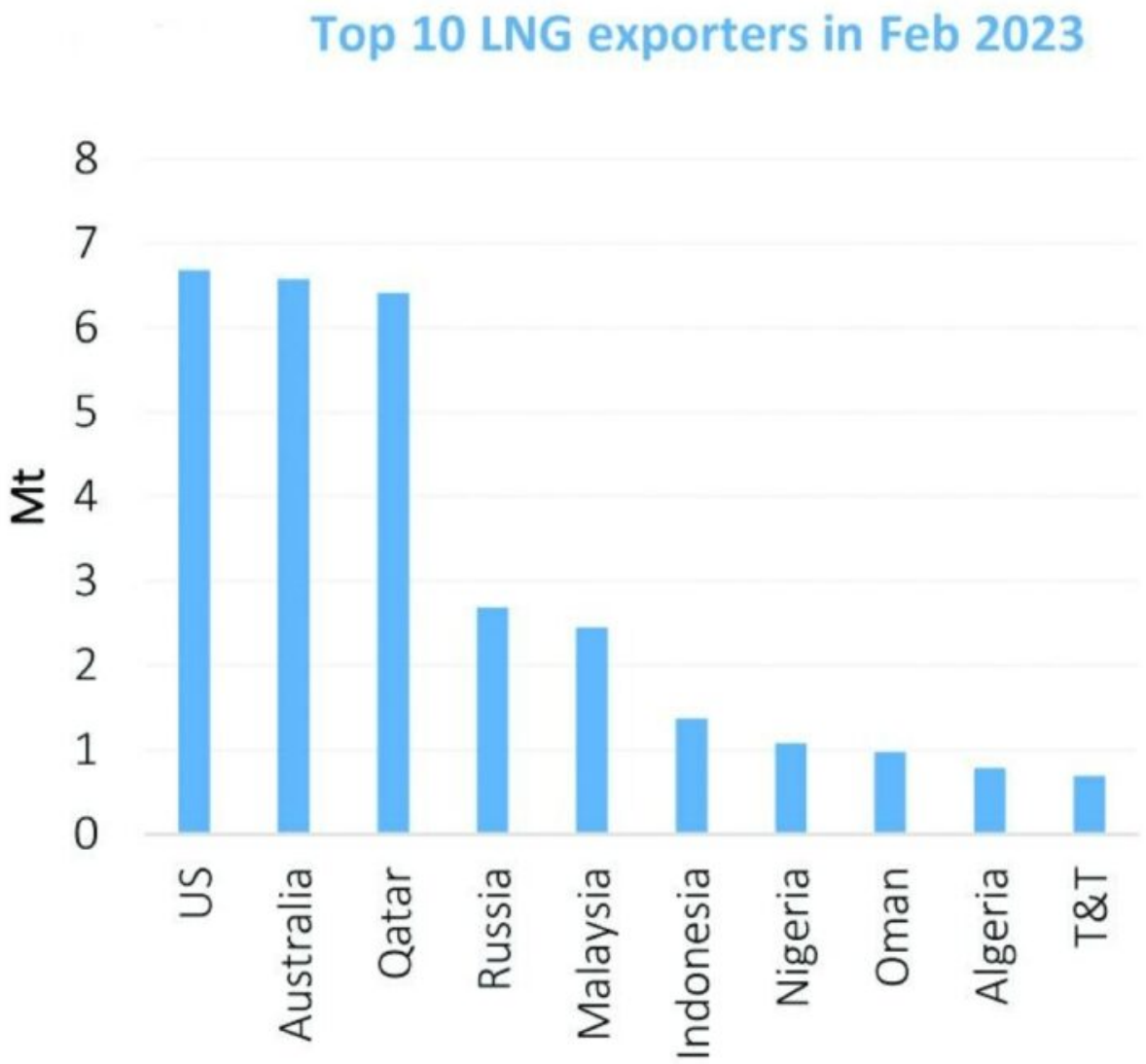
The transaction has completed all necessary formalities with the Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB).

Commenting on this occasion, HE the Minister of State for Energy Affairs, Saad bin Sherida al-Kaabi, also the President and CEO of QatarEnergy, said: “We are pleased to sign this agreement with our strategic partner, ExxonMobil, to further grow our offshore Atlantic Canada portfolio as part of our international growth drive, and look forward to continue working within Canada’s transparent and stable regulatory environment.”

Al-Kaabi added: “I would like to take this opportunity to thank the Canada-Newfoundland and Labrador Offshore Petroleum Board, which has been very supportive of this process, and look forward to a successful exploration campaign with our partners.”

Located offshore Eastern Canada, EL 1167 and EL 1162 lie in water depths ranging from 100 to 1,200 metres and cover an area of approximately 1,420 and 2,400 square kilometres, respectively.

Qatar drives GECF LNG exports to 16.45mn tonnes in February



GECF LNG exports have jumped 12% (1.74mn tonnes) year-on-year (y-o-y) to 16.45mn tonnes in February, driven by Qatar, which is the forum's top liquefied natural gas exporter, Doha-headquartered Gas Exporting Countries Forum said in its latest monthly report.

The surge in GECF's LNG exports was driven by Qatar (+0.84mn tonnes), Norway (+0.36mn tonnes), Malaysia (+0.33mn tonnes), Egypt (+0.15mn tonnes), Mozambique (+0.15mn tonnes), Angola (+0.14mn tonnes), Algeria (+0.10mn tonnes), Trinidad and Tobago (+0.08mn tonnes), Russia (+0.05mn tonnes) and Peru

(+0.02mn tonnes).
In contrast, LNG exports declined in the United Arab Emirates (-0.26mn tonnes) and Nigeria (-0.21mn tonnes), GECF noted.
Looking at Qatar and Angola, lower maintenance activity at LNG facilities in both countries compared to a year earlier boosted the countries' exports.
In Norway, the continued ramp-up in production from the Hammerfest LNG facility, following its restart in June 2022, drove the increase in exports.
Furthermore, higher feedgas availability for LNG exports in Malaysia, Egypt, Algeria and Trinidad and Tobago supported the increase in exports from these countries.
With regard to Mozambique, the ramp-up in production from the Coral South FLNG facility supported the rise in LNG exports.
On the other hand, the decline in LNG exports from the UAE was attributed to maintenance activity at the Das Island LNG facility.
In Nigeria, lower feedgas availability for LNG exports contributed to the lower LNG exports.
NLNG declared force majeure on feedgas supply to the liquefaction facility in January 2023, which remained in effect in February, GECF noted.
In February 2023, global LNG exports rose sharply y-o-y by 11% (3.48mn tonnes) to 34.00mn tonnes.
Stronger LNG exports from GECF member countries, non-GECF countries and higher LNG reloads drove the growth in global LNG exports.
Non-GECF countries were the largest LNG exporters during the month with a share of 49.5% in global LNG exports, followed by GECF (48.4%) and LNG reloads (2.1%).
In comparison to February 2022, the shares of GECF member countries and LNG reloads increased from 48.2% and 0.8% respectively while the share of non-GECF countries declined from 51.0%, the monthly report showed.
At a country level, the US was the largest exporter in February 2023, followed by Australia and Qatar.
For January and February of this year, combined, global LNG

exports rose by 6.7% (4.33mn tonnes) y-o-y to 69.44mn tonnes, GECF noted.

LNG fleet expansion helps Nakilat eye robust global growth

Nakilat, whose liquefied natural gas (LNG) carriers account for about 10% of the global LNG carrying capacity, has said its greater fleet capacity and increased operational efficiency provide it with a “competitive” edge as its expands its international shipping portfolio through the recent strategic expansion of Nakilat’s fleet with an additional four LNG carriers, and the improved performance of its joint ventures and support services operating in the shipyard,
Nakilat has achieved sustainable and long-term growth over the past year, demonstrating its commitment to innovative

sustainability and operational excellence, its chairman Abdulaziz al-Muftah told shareholders yesterday at the annual general assembly meeting, which approved the 2022 results and 13% dividend.

“This commitment has provided Nakilat with a greater fleet capacity and increased operational efficiency, providing us with a competitive edge in the LNG shipping sector, as the company expands its international shipping portfolio,” he said.

With a fleet strength of 74 vessels – one of the largest LNG shipping fleets in the world, Nakilat’s portfolio comprises 69 LNG carriers, four liquefied petroleum gas carriers and one floating storage regasification unit – the company is backbone of the transportation link in Qatar’s LNG supply chain, according to him.

“Our LNG fleet has a combined carrying capacity of over 9mn cubic metres, which is about 10% of the global LNG fleet carrying capacity,” he said, adding the majority of Nakilat’s vessels are fixed with long-term charters to reputable counterparties, creating a “steady and healthy” cash flow for the company.

Nakilat followed through its expansion plans with the delivery of “Global Sealine”, a technologically advanced LNG carrier new-build during 2022, demonstrating commitment to innovation, sustainability, and operational excellence.

“This allowed Nakilat to provide greater fleet capacity and flexibility to its customers and gave the company a significant competitive advantage in the energy transportation sector,” al-Muftah said, adding this also contributed towards the company’s efforts at reducing its carbon footprint and operating sustainably apace growing its international shipping portfolio.

He said the company’s resilience and the convergent efforts have enabled its sustained growth momentum and business continuity, creating immense value for both its customers and shareholders.

With a solid sense of direction from the company’s long-term

expansion strategy and opportunities that re-emphasised its importance in achieving its targets, Nakilat has been smoothly sailing towards making significant contributions and notable accomplishments during 2022, al-Muftah said in the latest board report.
Supported by its Erhama Bin Jaber Al Jalahma Shipyard, Nakilat's joint venture companies continue adding strategic value to its operations through dedicated services, including ship repair, offshore fabrication, as well as a range of maritime services, all of which contribute towards establishing Qatar as a shipping and maritime hub, in support of the Qatar National Vision 2030, according to him.

Another honour for Ashghal

Qatar Deserves The Best

Yet another feather in the cap for the Public Works Authority (Ashghal). In recognition of its distinguished health and safety performance, and wellness initiatives, Ashghal has been declared the overall winner of two International Safety Awards

2020 by the British Safety Council, in recognition of its commitment to keeping workers and workplaces healthy and safe during the 2019 calendar year. The awards reflect Ashghal's commitment to health and safety in its construction projects and the leading position that Ashghal plays in the Qatari construction industry in terms of spreading awareness and best H&S practices.

Ashghal is one of the very few organisations to be crowned the overall winner in the following categories: "Wellbeing Initiative" for protecting its employees from the risk of injury and ill health at work, and "Best Team of the Year" for the Roads and Infrastructure project in West Muaither (Package 3) in recognition of its commitment to keeping its workers and workplaces healthy and safe in 2019.

Engineer Yousef Al-Emadi, Director of Projects Affairs, said: "The International Safety Awards are part of numerous awards won by Ashghal during the past few years. They are a result of well-implemented strategies set by Ashghal's leadership and nurtured at every level across the organisation."

In 2019, Ashghal succeeded in undertaking the health screening of 78,197 workers, or 96.5% of the entire workforce. The British Safety Council commended Ashghal on the achievement, which is in line with the Council's vision that no one should be injured or made ill through work – anywhere in the world

In March this year, Ashghal won the Government Sustainability Initiative Award presented by the Qatar Green Building Council (QGBC), a member of the Qatar Foundation, for applying best environmental practices in project implementation works. The Award comes in recognition of Ashghal's efforts in the field of environmental sustainability, and in the context of several initiatives by the authority within the roads and infrastructure projects implemented by the Roads Projects Department.

Under the five-year plan (2018-2022), Ashghal will implement 25 plans related to the evaluation and follow-up of road safety, including achieving safety at work sites, managing traffic congestion and building an intelligent transportation

system.
Ashghal continues to implement sustainable infrastructure for the State of Qatar. The achievements come within the framework of the State's interest in the infrastructure, construction and reconstruction sector in line with the aspirations of its National Vision 2030 and to serve its hosting of the 2022 FIFA World Cup Qatar.

Warning to polluters: 3.6bn people are now climate vulnerable

While the world population reached 8bn on November 15, 2022 according to the United Nations, nearly 3.6bn people are now

climate vulnerable. It is in this context that one should analyse the news that the Intergovernmental Panel on Climate Change (IPCC) Synthesis Report under the Sixth Assessment Cycle will be released on March 20 following negotiations this week by governments on the 'Summary for Policymakers'.

The report will gather and distil scientific evidence from the IPCC working group reports and special reports published between 2018 and 2022. It will be the last such report from the IPCC in this cycle until further reports are published under the next assessment cycle, which could be only in 2027 or 2028.

Culminating with this Synthesis Report, the science from the IPCC is crucial evidence to governments for this decade on the current state of the climate crisis. It must serve as a warning to polluters that their time is up. The window of time to keep global temperatures below 1.5ºC is fast closing in. Current climate targets put the world on a 2.8ºC pathway by 2100. A rapid equitable fossil fuel phase out must be top priority for all governments while scaling up investments in renewables and energy efficiency measures. Wealthy nations must substantially increase their international climate finance based on their fair share, the Climate Action Network (CAN) has urged in a statement last Friday.

Past reports under this assessment cycle have underlined the dire situation and stated unequivocally that greenhouse gases – from the reliance on fossil fuels, industrialisation and land-use – is driving up emissions and causing unprecedented levels of global heating. Human actions have caused the last decade to be the warmest decade in the last 125,000 years. Sharpening inequities show that the richest 10% of households contribute about 36%-45% of global greenhouse gas emissions. Communities in many vulnerable regions will experience the limits of adaptation even before 1.5ºC warming and sea-level rise poses an existential threat to some small islands and low-lying coastal areas.

"The forthcoming IPCC report should mobilise governments to envision and act towards transitioning into a fully renewable-

energy powered society supported by strong energy efficiency measures, based on principles of justice and the protection of human rights," stated Stephan Singer, senior global specialist on climate science and energy, CAN International, and head of delegation for CAN at IPCC. Investing in renewables means rapidly divesting from fossil fuels and nuclear energies and phasing them out by mid-century to ensure the least damaging pathway towards climate stability. The IPCC Synthesis Report must reiterate its recent findings that renewable energy, particularly solar and wind, are technologically, financially and economically the key means to fight climate change, he said.

Dr Stephen Cornelius, Global Deputy Lead for Climate and Energy, World Wide Fund for Nature, stated that leaders must heed the science and act immediately with the pace and scale necessary to decarbonise the economies in time. An accelerated phase-out of fossil fuels is needed to limit global warming to below 1.5ºC and avoid the worst climate change risks. As he explained, nature is our secret ally in the fight against climate change. Natural systems have absorbed 54% of human-related carbon dioxide emissions over the past decade and have slowed global warming and helped protect humanity from much more severe climate change risks. We can't hope to limit warming to 1.5°C, adapt to climate change and save lives and livelihoods, unless we also act urgently to safeguard and restore nature, a non-negotiable part of the solution to the climate crisis, as Dr Cornelius said.

Climate, ice sheets and sea

level: The news is not good

PARIS – Parts of earth's ice sheets that could lift global oceans by metres will likely crumble with another 0.5 deg C of warming, and are fragile in ways not previously understood, according to new research.

The risk, which will play out over centuries, may also be greater than expected for a significant portion of the world's population in coastal regions.

New research suggests that the number of people threatened by sea-level rise has been underestimated by tens of millions because of poorly interpreted satellite data and a lack of scientific resources in developing countries.

Ice sheets in Greenland and Antarctica have shed more than half a trillion tonnes annually since 2000 – six icy Olympic pools every second.

These kilometres-thick ice cubes have replaced glacier melt as

the single biggest source of sea-level rise, which has accelerated three-fold over the last decades compared with most of the 20th century.

A 20cm increase since 1900 has boosted the destructive wallop of ocean storms made more powerful and wide-ranging by global warming, and is driving salt water into populous, low-lying agricultural deltas across Asia and Africa.

Up to now, climate models have underestimated how much ice sheets will add to future sea-level rise because they mostly looked at the one-way impact of rising air temperatures on the ice, and not the complicated interaction between atmosphere, oceans, ice sheet and ice shelves.

Using so-called active ice sheet models, scientists from South Korea and the United States projected how much ice sheets would raise global oceans by 2150 under three emissions scenarios: swift and deep cuts as called for by the United Nation's Intergovernmental Panel on Climate Change, current climate policies, and a steep increase in carbon pollution.

Looking only at a 2100 horizon is misleading, because oceans will continue to rise for hundreds of years no matter how quickly humanity draws down emissions.

If rising temperatures – up 1.2 deg C above pre-industrial levels so far – can be capped at 1.5 deg C, the additional impact of ice sheets will remain very small, they found.

Doomsday glacier

But under current policies, including national carbon-cutting pledges under the 2015 Paris Agreement, Greenland and Antarctica would add about half a metre to the global watermark.

And if emissions increase – from human or natural sources – under a "worst-case" scenario, enough ice would melt to lift

oceans 1.4m.

Perhaps the most striking finding from the study, published this week in Nature Communications, was a red line for runaway ice sheet disintegration.

“Our model has a threshold between 1.5 deg C and 2 deg C of warming – with 1.8 deg C as a best estimate – for acceleration of ice loss and sea-level increase,” co-author Fabian Schloesser from the University of Hawaii told Agence France-Presse.

Scientists have long known that the West Antarctic and Greenland ice sheets – which together could lift oceans 13m – have “tipping points” beyond which complete disintegration is inevitable, whether in centuries or millennia. But pinpointing these temperature trip wires has remained elusive.

A pair of studies this week in Nature, meanwhile, showed that Antarctica’s Thwaites “doomsday glacier” – a slab the size of Britain sliding towards the sea – is fracturing in unsuspected ways.

Thwaites is one of the fastest moving glaciers on the continent, and has retreated 14km since the 1990s. Much of it is below sea level and susceptible to irreversible ice loss.

But exactly what is driving the march to the sea has been unclear for lack of data.

Misinterpreted data

An international expedition of British and US scientists drilled a hole the depth of two Eiffel towers (600m) through the thick tongue of ice Thwaites has pushed out over the Southern Ocean’s Amundsen Sea.

Using sensors and an underwater robot, called Icefin, threaded through the hole, they examined the ice shelf’s hidden

underbelly.

There was less melting than expected in some places, but far more in others.

The stunned scientists discovered up-side-down staircase formations – like an underwater Escher drawing – with accelerated erosion, along with long fissures being forced open by sea water.

“Warm water is getting into the cracks, helping wear down the glacier at its weakest point,” said Dr Britney Schmidt, lead author of one of the studies and an associate professor at Cornell University in New York.

A fourth study, published last week in the American Geophysical Union journal Earth’s Future, found that rising oceans will destroy farmland, ruin water supplies and uproot millions of people sooner than thought.

“The time available to prepare for increased exposure to flooding may be considerably less than assumed to date,” Dutch researchers Ronald Vernimmen and Aljosja Hooijer concluded.

The new analysis shows that a given amount of sea-level rise – whether 30cm or 300cm – will devastate twice the area projected in most models to date.

Remarkably, a misinterpretation of data is mostly to blame: Radar measurements of coastal elevations used until recently, it turned out, often mistook tree canopy and rooftops for ground level, adding metres of elevation that were not in fact there.

Most vulnerable will be tens of millions of people in the coastal areas of Bangladesh, Pakistan, Egypt, Thailand, Nigeria and Vietnam.

Earlier research taking into account more accurate elevation readings found that areas currently home to 300 million people

will be vulnerable by mid-century to flooding made worse by climate change, no matter how aggressively emissions are reduced. AFP

Development banks must embrace nuclear energy

Multilateral development banks (MDBs) have historically been reluctant to invest in nuclear energy, and the World Bank has not financed a nuclear power plant since 1959. In the absence of MDB funds, the majority of international financing for such projects has come from state banks in Russia and China, establishing Russian and Chinese companies as the primary suppliers of nuclear technology to low- and middle-income countries.

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While this approach has allowed MDBs to avoid controversy, they must acknowledge that the world has changed. The urgent need to curb greenhouse-gas emissions, together with Russia's war in Ukraine and subsequent surge in oil and gas prices, has increased global demand for nuclear power. With the 2011 Fukushima disaster fading in the rearview mirror, even Japan is planning to restart its reactors. France, The Netherlands, and the United Kingdom have all announced plans to build new nuclear power plants, Sweden is considering it, and the European Union now allows nuclear energy to be labelled as a green investment. In the United States, the federal government is expected to pump about $40bn into the sector over the coming decade, and private investment in nuclear energy is surging.

This change in sentiment coincides with rapid technological advances. The development of smaller and safer reactors has made nuclear power cheaper, faster to deploy, and easier to maintain. Whereas the construction of traditional nuclear power plants has historically been a major national undertaking, with costs frequently running into the dozens of billions of dollars, so-called small modular reactors allow for a more tailored approach and more manageable financing packages.

This is particularly important for developing countries, which must figure out how to expand their power supply while curtailing greenhouse-gas emissions as they become increasingly industrialised and urbanised. The International Energy Agency estimates that demand for energy in Africa will jump by one-third by the end of the decade, owing to

population and income growth, as well as improved access.

While increased MDB support for renewable energy has helped put developing economies on the path toward carbon neutrality, most countries still rely on coal-fired power plants and natural gas for baseload electricity production. To complete the shift away from fossil fuels, governments must complement wind and solar energy with low-carbon sources that are not dependent on weather conditions.

But without nuclear power (or hydroelectricity, but not all countries have that option), governments will find it difficult to replace their fossil-fuel baseload. While it may be possible to achieve this by combining renewable energy with utility-scale battery storage, the costs are prohibitive, and modern batteries come with their own sustainability issues. Geothermal energy could also play this role, but currently it is limited to areas where geothermal heat is available close to the Earth's surface. New technologies could expand access to geothermal power, but they are costly.

By abandoning their reticence about nuclear power, MDBs could help scale up low-carbon energy supply while enhancing global security. Western countries' withdrawal from nuclear energy over the past few decades has enabled Russia to establish itself as the leading international provider of reactors, services, and financing for nuclear-power projects. At a time of heightened geopolitical tensions, it is in the interest of MDBs' democratic shareholding governments to establish an alternative for emerging countries interested in nuclear power but hesitant to make their energy security dependent on Russia. Simultaneously, MDBs would promote better safety and sustainability standards.

Given that international development agencies tend to follow MDBs' lead, and that private financing of energy infrastructure projects in developing countries often depends on multilateral lenders' risk-mitigation policies, MDBs should reverse their position on nuclear power. Otherwise, Russia and China will remain the world's primary suppliers of such projects.

To be sure, MDBs must carefully assess proposed nuclear energy projects to ensure that they meet appropriate technological and sustainability standards. While some under-resourced countries with weak institutions might not be ready to pursue nuclear power, MDBs are uniquely positioned to support emerging economies seeking alternatives to Russian and Chinese technologies and financing.

The climate crisis, too, has created unprecedented momentum for reform. The US, Germany, a G20 expert panel, and Barbadian Prime Minister Mia Mottley have all called for strengthening MDBs' capacity to support developing countries in mitigating and adapting to climate change and in mobilising private financing for this purpose. Meanwhile, the World Bank recently published an "evolution roadmap" that aims to increase its capacity to respond to climate change.

Reforming MDBs' financing structures and energy policies is crucial to supporting developing countries in mitigating the worst effects of climate change. Moreover, Russia's war against Ukraine has revealed the critical role of the multilateral financial system as a bulwark against tyranny. Since the start of the war, the World Bank has disbursed $16bn in financial support to Ukraine, with other multilateral finance institutions providing comparable amounts. By explicitly permitting MDBs to finance nuclear power, their shareholding governments could weaken Russia's still-considerable influence in emerging countries.

The momentum generated by nuclear energy's renaissance, the geostrategic imperative to reduce Russia's role as the dominant international provider of nuclear energy infrastructure, and the looming climate crisis, has presented MDBs with a unique opportunity to update their nuclear energy policy. To fight climate change and achieve a safer, more sustainable future, they must seize it. – Project Syndicate

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