

Carbon-Neutral Or Green LNG: A Pathway Towards Energy Transition



LNG producers have started to look for ways to minimise or counterbalance their carbon footprints, says Dr Hussein Moghaddam, Senior Energy Forecast Analyst, Energy Economics and Forecasting Department

According to the latest, 2020 edition of the GECF Global Gas Outlook 2050, the demand for natural gas is expected to rise by 50% from 3,950 billion cubic metres (bcm) in 2019 to 5,920 bcm in 2050, as gas remains the cleanest-burning hydrocarbon. In spite of that, meeting global targets for climate change mitigation is one of the biggest challenges. Significant emissions are released through the combustion of gas to drive the liquefaction process, while any carbon dioxide (CO²)

detached before entering the plant is frequently emitted into the atmosphere.

Subsequently, investors, regulators, and customers exert mounting pressure on the gas industry, as it needs to do more to accomplish climate objectives and focus on reducing emissions.

More than 120 countries have already developed a climate risk strategy that sets target to reduce greenhouse gas (GHG) emissions to net-zero by 2050. As natural gas has a central role to play in mitigating carbon emissions, LNG producers have started to look for ways to minimise or counterbalance their carbon footprints, thus ongoing LNG decarbonisation efforts are likely to expedite. Accordingly, top LNG producers, traders, and consumers have indicated their plans in order to decarbonise the LNG supply chain. This is being done in two ways: by offsetting emissions from individual cargoes retrospectively, as well as by building low-emission liquefaction terminals. As a result, the “Green LNG” term has appeared as a new product within the LNG industry.

The carbon-neutral or Green LNG market is an emerging prospect whereby “Green” indicates either the reduction of GHG, or the offset of GHG emissions, linked to some, or all elements of the LNG value chain – from production of upstream gas and pipeline transportation, to liquefaction, transportation, regasification, and downstream utilisation of natural gas.

Companies in the LNG value-chain can diminish GHG emissions in numerous ways. For instance, by using biogas as feedstock; by decreasing emissions from upstream, pipeline, and liquefaction facilities; by applying renewable energy to power their liquefaction plants; respectively, by using carbon capture, and storage (CCS), or carbon capture, utilisation and storage (CCUS) technologies by reinjection of CO² into the subsurface after it had been detained during the processing of the feed gas before liquefaction.

Therefore, it should be taken into account that carbon-neutral does not mean that the LNG cargo generates zero emissions, rather that LNG sellers can counterbalance their GHG emissions by obtaining offsets to compensate for all or part of their GHG emissions or the utilisation of carbon credits, which reinforce reforestation, afforestation or other green projects.

It is worth noting that last year the leaders of the G20 endorsed the concept of the circular carbon economy (CCE) and the GECF is the part of this process. The CCE aims to include a wide range of technologies such as CCS/CCUS as a way to promote economic growth and to manage emissions in all sectors.

In contrast, Qatar Petroleum (QP) is the company that applies a combination of strategies to reduce its emissions. Its future LNG production will be low-carbon based, as the company is building a CCS facility alongside its 126 mtpa liquefaction capacity expansion by 2027.

As part of its new sustainability strategy, QP has announced that its aim is to reduce the emissions intensity of its LNG facilities by 25% by 2030. The capture and storage of CO² from its LNG facilities of about 7 mtpa by 2027 is another goal. Furthermore, QP aims to drop emissions at its upstream facilities by at least 15%, as well as cut flaring intensity by over 75% by the end of this decade. Additionally, by 2030, QP is attempting to abolish routine flaring, and by 2025, the company would like to minimise fugitive methane emissions along the gas value-chain by establishing a methane intensity target of 0.2% over all of its facilities.

In certain supply contracts of the company, environmental considerations are incorporated as well. In November 2020, QP signed the first long-term deal with “specific environmental criteria and requirements”, which was designed to minimise the carbon footprint of the LNG supplies with Singapore’s Pavilion

Energy, and to provide 1.8 mtpa of LNG over a 10-year period.

In order to fulfil the objectives of decreasing GHG emissions, CCS also helped the case in Australia. Chevron is the operator of the 15.6 mtpa Gorgon LNG offshore Western Australia and has injected more than 4 million tonnes of CO₂ in the CCS facility since its commissioning in August 2019.

Meanwhile, NOVATEK has embraced a long-term methane emissions reduction target by 2030 in Russia, mainly to diminish methane emissions per unit of production by 4% in the production, processing and LNG segments. Moreover, the company aims to decrease GHG emissions per tonne of LNG produced by 5% [5]. In this regard, NOVATEK and Baker Hughes, which provides engineering and turbomachinery at Yamal LNG, signed an agreement to introduce hydrogen blends rather than solely running methane from feed gas into the main process for natural gas liquefaction to reduce CO₂ emissions from NOVATEK's LNG facilities.

Bio-LNG will have a significant role in the coming years to form the heavy road and water transport in the Netherlands. The construction of the first Dutch bio-LNG installation was launched in Amsterdam last November. Renewi (the waste management company), the Nordsol (for processes the biogas into bio-LNG) and Shell (to sell this bio-LNG at its LNG filling stations) have developed this project. Biogas is made up of roughly 60% methane and 40% CO₂. An additional CO₂ cutback takes place due to the recycling of the CO₂ by-product in the market, which results in a 100% CO₂ neutral fuel [7].

Inpex, which is Japan's biggest oil and gas producer, has recently disclosed its strategy to become a CO₂ net-zero company by 2050 by developing its renewable and hydrogen energy together with the utilisation of carbon capture technologies. Japan has also stated in October 2020 that the country would become carbon-neutral by 2050.

Two major LNG importer regions, namely Asia-Pacific and Europe, have already set policies regarding long-term decarbonisation targets. It is worth noting that most of the carbon-neutral LNG cargoes have been supplied by companies are in Asia to a certain extent, where carbon policies and investor pressure are fairly fragile.

According to the 2020 Edition of the GECF Global Gas Outlook 2050, it is forecasted that LNG imports to Asia will increase to about 800 bcm (585 mt) by 2050, and with 71% of global LNG imports, the region is set to be the driving engine for global LNG demand growth. As concerns with air quality rise in numerous Asian countries, the most realistic solution to attain a decarbonised society in the future by minimising the level of CO₂ on a global scale, is the combination of natural gas and renewable energy. Thus, emissions and cleaner-burning fuels are going to be the centre of attention.

Europe could be the predecessor for carbon-neutral LNG in the long-term, by sticking to its new methane strategy, which was revealed by the European Commission (EC), and in accordance with their 2050 carbon-neutral goal. Importantly, the EC suggested LNG producers to engage with their international partners to explore possible standards, targets, or incentives for energy supplies to the EU.

Which part of the LNG value-chain should take responsibility?

An LNG seller will probably need to diminish and offset GHGs, which emphasises the need for robust offset markets in order to be completely carbon-neutral through the entire LNG value-chain.

Accordingly, this highlights challenges for legacy LNG projects with limited means to decrease carbon, making them dependant on expensive market mechanisms. LNG producers have to keep the balance between the competitive fuel pricing and the expensive emissions reduction initiatives. Therefore, the

question of who pays the additional costs to produce Green LNG is yet to be decided.

As noted, the balance of carbon emission is feasible for any LNG facility and can lead to carbon-neutral LNG cargoes. Although, this is probably not a sustainable long-term process and does not directly cope with the project's emissions, it is a good transformation for general LNG decarbonisation.

However, the GECF proposes that both sellers and buyers have to contribute to achieving emission targets. The discussions with respect to these issues should involve all LNG industry players, such as sellers, buyers, traders and policymakers, respectively. A more focused perspective that targets minimising emissions in upstream and liquefaction might be more feasible for LNG producers. This will also associate with the already ongoing efforts from them, as they have to control their carbon footprints under more pressure from the public and investors.

In conclusion, as LNG demand keeps expanding, the demand for Green LNG will grow as well. Green LNG can help ensure that natural gas preserves its role as a crucial part of the energy mix, supporting climate goals over the energy transition period. As stated in the 2019 Malabo Declaration, at the 5th GECF Summit of Heads of State and Government in Equatorial Guinea [10], the GECF Member Countries, reiterate the strategic role of the development, deployment and transfer of advanced technologies for more effective production, and the utilisation of natural gas to enhance its economic and environmental benefits.

QP sees LNG bunkering a promising solution for shipping industry



Qatar Petroleum is actively pursuing to replace its existing bunker fuel for ships with LNG in a phased manner, which will significantly reduce QP's total shipping emissions in the LNG value chain by around 28%. Once the fleet is converted to LNG, the total CO₂ reduction through this initiative will amount to approximately 1.9mn tonnes of CO₂ equivalent per year, QP said in its Sustainability Report.

With a growing population, the demand for transport is anticipated to expand. More emissions also cause poor air quality, causing adverse effects on the environment and human health.

Meeting the increasing demand for transport while reducing emissions will only be achieved with a variety of solutions and technologies, such as lower-emissions liquid fuels, biofuels, and natural gas.

"More than ever, we are committed to decarbonise the transport sector by shipping LNG to destinations in a cost-effective,

efficient and environmentally friendly way,” QP said.

In 2019, QP and Shell entered into an agreement to establish an LNG bunkering venture. The creation of a joint venture company, owned equally by both parties, demonstrates QP’s firm commitment to curbing emissions from the transport segment.

On the role of natural gas in power generation, the report said the electricity share of total energy demand is around 19% but is responsible for 40% of the overall energy sector’s GHG emissions. When generated from lower-carbon energy sources, increased use of electricity will support emission reduction in the power sector, as well as in end-use industries through indirect emissions.

In addition, the combustion of fossil fuels and coal releases several pollutants that negatively affect air quality. QP monitors pollutants at affiliated power plants via a continuous emissions monitoring system (CEMS).

As of 2019, natural gas remains the only fuel to be burnt in gas turbines in Qatar, where pollutant levels are significantly lower than from oil or coal, making natural gas the key to maintaining good air quality.

“We strive to further enhance the environmental benefits of gas-fired plants, eg through lowering NOx emission,” the report noted.

“We consider the industrial sector to be crucial for providing vital products for daily lives, from aluminium, steel, and cement to food packaging, paints, and others. However, metals, cement, chemicals and transport industries are also significant consumers of energy and hence emitters of GHG emissions.

“In 2019, the industrial sector accounted for 52% of domestic gas consumption and 19% of total CO2 emissions in Qatar (metals and petrochemicals only). Reducing energy demand and emissions from the industrial sector over the long term, without impacting economic and social development goals, will require effective implementation of energy efficiency strategies, switching to lower carbon fuels and raw materials, and leveraging the best available technologies for GHG

reduction.

“Our use of cleaner gas in these industries offers an unrivalled advantage to operate at significantly lower GHG emission and pollutant levels compared to those in coal or oil-based industries. Besides, the use of natural gas in industry has other significant benefits: gas almost completely combusts, while coal produces large volumes of ash and slag, which require costly handling and disposal and gas boilers supplied by pipelines do not require on-site fuel storage, loading, or waste disposal,” QP said.

Biden's green push gives Detroit the cover to go electric



General Motors CEO Mary Barra just stomped on the electric-vehicle accelerator pedal. Call it the Biden effect.

Six months ago the automaker backed the Trump administration in a legal battle that could have neutered California's longstanding right to set its own tougher carbon-emission rules. About two weeks after Trump lost, GM withdrew from that fight and two weeks after he left office, it pledged to match the state's mandate to sell only electric vehicles starting in 2035 – and do that all across the U.S.

Why the 180? Barra is getting a jump on President Joe Biden's policies, which are expected to help GM and its rivals build and sell more EVs in the U.S. He wants to restore the \$7,500 tax incentives that companies including GM and Tesla Inc. exhausted under Trump's watch, and Biden plans to build 500,000 charging stations across the country. That could make EVs more affordable and ease concerns of would-be buyers about battery-powered cars' driving range.

Some see GM's about-face on the politics of clean cars as less a calculated policy move than a recognition of longer-term global forces at work.

"They would not make an announcement this substantial just for political purposes," said Joe Britton, executive director of the Zero Emission Transportation Association, a Washington-based lobby group pushing for full adoption of EVs by 2030. "This is a clear sign that electric vehicles are going to be the future and that we're in a bull market for innovation right now."

Believe it or not, Biden's position has been met with a collective sigh of relief in some quarters of Detroit. The rest of the world is moving toward electric vehicles, and the Trump administration had no interest in easing that transition in the U.S.

While Trump was trying to prolong the era of combustion engines by watering down clean-air rules and resisting efforts to expand the EV tax credit, China's government has adopted

rules and incentives that boosted EV sales in the world's largest car market. Almost all of the European Union's 27 member states have purchase or tax incentives for consumers who buy electric vehicles, and it's rapidly ratcheting up emission restrictions to penalize automakers that don't sell enough EVs in Europe.

As a result, China and the EU have jumped way ahead of the U.S. in EV adoption rates. Last year, of the 3.2 million EVs sold globally, 1.3 million were in China and 1.2 million were in the European Union and UK. The U.S. accounted for just 328,000 sales, according to Swedish researcher EV Volumes.com.

That put Detroit's carmakers in a spot. They get most of their revenue and profits at home in the U.S., where EV sales have been minimal. And they need help with economies of scale sufficient to drive down battery costs and create profit margins.

Barra had been heading in this direction since 2017, when GM announced plans to build 20 different EVs by 2023, but most of them were bound for the Chinese market. GM accelerated that shift in November, promising **30 models by 2025 and an investment of \$27 billion** in electric and self-driving cars with more models planned for the U.S. Ford Motor Co. has been stepping up its efforts as well, budgeting \$11 billion for EVs and more fuel-efficient vehicles.

Biden's victory put some wind at the auto industry's back and makes the commitment to electric powertrains more palatable for their risk-averse corporate cultures.

Political convenience

Even so, there also is a hefty dose of political convenience involved in the decision to go all-in on EVs. GM, Toyota Motor Corp. and Fiat Chrysler Automobiles – now a part of Stellantis – went along with Trump in his legal fight with California, throwing a bone to a temperamental president and thereby

extending their ability to churn out cash-cow gasoline-powered vehicles.

Officially, GM said it always wanted one national standard instead of different rules from Washington and Sacramento. It just so happens that the company picked Trump's watered-down option.

Critics of government subsidies were quick to see GM's move as a sign the market for EVs is maturing fast enough that no additional incentives are needed.

"GM is a publicly traded business and is making a strategic, calculated market decision," Tom Pyle, a former Trump adviser and current president of American Energy Alliance, a free-market advocacy group, said in a statement. "In no way should any taxpayer be responsible for GM's ability to achieve – or fail to achieve – their corporate goal of an all-electric light duty fleet by 2035."

Big companies have long sought to position themselves in the most favorable light in Washington, regardless of which party's candidate is in the Oval Office. Automakers are no exception. Former Ford CEO Mark Fields warned then-President Trump that overly tough mileage rules would put a million jobs at risk, a prelude to Trump's rollback. And GM broadly touted its Chevrolet Volt plug-in after its 2009 rescue by the Obama administration, which later set a goal of putting a million electric vehicles on the road by 2015.

Carrot and stick

Trump and his Twitter account are now silenced. With Democrats running the White House and having a majority in both chambers of Congress, the prevailing wind is definitely blowing against Detroit's status quo dependency on big sport-utility vehicles and trucks.

Biden's plan also comes with a stick. Earlier this week, he

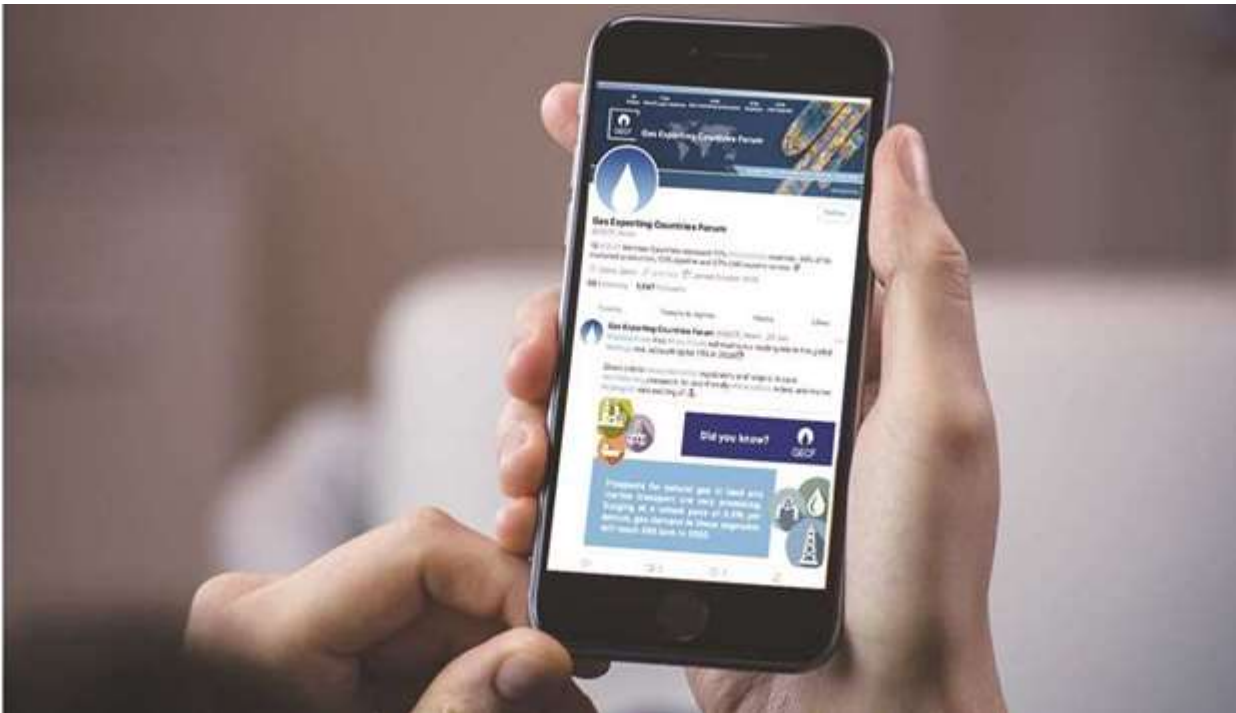
vowed to reinstate vehicle emissions standards gutted by the Trump administration and set “new, ambitious ones that our workers are ready to meet.”

Doing so would aid GM’s electrification push and could encourage competitors to follow suit, said Joshua Linn, a senior fellow at Resources for the Future, a Washington think tank that focuses on environmental policy and economics.

“Companies don’t want to get out too far ahead of the market,” he said. “Having more ambitious policies, greenhouse-gas standards and maybe a national zero-emission vehicle program will help support the entire market moving in that direction.”

GM’s worst nightmare is a scenario in which its commitment to EVs isn’t met with higher consumer demand, allowing rivals with less ambitious electrification plans to steal away business. Biden may be giving GM some of the cover it needs to proceed.

GECF commences educational campaign on benefits of natural gas



The Gas Exporting Countries Forum (GECF) has activated a new communication campaign on its social media channels that raises awareness about the benefits of natural gas as well as simplifies the facts of an industry often perceived as data heavy.

Being run on GECF's Twitter and LinkedIn channels, the 'Did You Know...?' series of posts provide easy-to-understand facts, figures, and data on an energy source that likely powers the batteries of the phones users will read the information on. It also calls to attention any misconception around this important source of energy found in abundance in pockets around the world.

"In the midst of an 'infodemic' it is increasingly hard to differentiate facts from the noise. Further, due to the complexity of energy systems, end-users rarely get to glimpse at the processes that eventually power most aspects of their daily lives, such as electricity at home, prospects for front-running technologies, fuelling of vehicles and so on," said GECF secretary general Yury Sentyurin.

Scientifically-grounded data and insights are championed at the GECF, which was established to bring a better understanding about technology that underpins the full spectrum of energy areas, to promote natural gas as the fuel

of choice, as well as to promote cooperation at all levels of global energy system.

The forum recently entered a landmark MoU with Unesco to further enhance its role in environmental protection and to cultivate a “culture of energy responsible behaviour”.

“Our campaign’s goal is to de-mystify the world of energy and, really, democratise it for every one’s understanding. Today, as we live in times of rising appetite for energy, ever-increasing struggle for climate protection and better future for all, social media has become a tool in global geopolitics. The ‘Did You Know...?’ campaign aims to empower the community around the world with a new appreciation and understanding about an element that holds such a powerful impact on people’s quality of life,” the forum’s representative noted.

According to the latest available projections, quantified through the use of unique and highly granular GECF Global Gas Model, fossil fuels will maintain a leading role in the global energy mix, accounting for at least 71% in 2050 (against 81% in 2019) of the world’s energy need.

Meanwhile, natural gas will be the only hydrocarbon resource to increase its share from 23% today to 28% in 2050.

“Natural gas is often lumped together with other traditional fuels due to its origins as a hydrocarbon fuel without recognising the attributes that distinguish it for its low-emissions and dynamic flexibility. As a platform dedicated to promoting the use of this cleanest of the fossil fuels, we felt it is important to broaden people’s understanding of its economic and environmental advantages,” SENTRYURIN emphasised. To follow the ‘Did You Know...?’ campaign, visit the GECF website www.gecf.org, Twitter @GECF_News, and GECF LinkedIn page.

Worsening pandemic poses 'serious risks', says Lagarde

European Central Bank chief Christine Lagarde warned yesterday that the pandemic still poses "serious risks" to the eurozone economy as concerns grow about new virus variants and sluggish vaccination campaigns.

The Frankfurt institution's governing council held back from tweaking its ultra-loose monetary policy at its first meeting of the year, having already topped up support in December. Lagarde stressed that "ample monetary stimulus" remained essential to steer the 19-nation currency club through the Covid-19 upheaval, and that the ECB stood ready to do more as needed.

"The pandemic continues to pose serious risks to public health and to the euro area and global economies," Lagarde told an online press conference.

The start of mass vaccination drives in the European Union was "an important milestone", she said, but the rollout has got off to a bumpy start in many nations.

The emergence of more contagious virus variants, first discovered in Britain and South Africa, has added to nervousness at a time when many countries are already struggling to bring down infection numbers.

Europe's top economy Germany this week extended its partial lockdown until February 14, and Chancellor Angela Merkel has not ruled out border checks to slow the spread of the new strains.

France and Spain have tightened their evening curfews, while non-essential shops and leisure facilities are closed across much of the continent.

The latest virus setbacks "are disrupting economic activity," Lagarde said, noting that the services sector was hit especially hard.

"The intensification of pandemic poses some downside risks to

the short-term economic outlook," she added.

The ECB in December forecast 3.9% growth for 2021, after an estimated contraction of 7.3% in 2020.

Lagarde said the ECB's forecasts "remain valid" for now, as they took into account lockdowns persisting through the first quarter coupled with a gradual start to vaccinations.

The former French finance minister also reiterated her plea for European governments to support the ECB's efforts through fiscal policy.

She urged European Union members to speed up the ratification of a recently agreed €750bn recovery fund, saying it had a "key role" to play in financing the region's bounce-back.

Under Lagarde, the ECB took unprecedented steps last year to cushion the impact of Covid-19 on the euro economy.

Its biggest weapon is a pandemic emergency bond-buying scheme, known as PEPP, that was in December topped up by €500bn to reach a total envelope of €1.85tn.

The scheme was also extended to March 2022.

The bank has also offered ultra-cheap bank loans and held interest rates at historic lows.

The goal of the measures is to keep borrowing costs low to encourage spending and investment in the 19-nation currency club, in a bid to boost growth and inflation.

But eurozone inflation has stayed stubbornly low for years and even turned negative in 2020.

By the ECB's own estimates, price growth will gradually inch up to 1.4% by 2023, still far off the bank's target of just under 2%.

In December, inflation stood at minus 0.3%.

Analysts say inflation could bound higher later this year, powered by pent-up consumer demand once lockdowns start easing.

But any boost is expected to be short-lived, they caution.

Lagarde agreed that inflation was "likely to increase in the coming months", partly also due to the end of a temporary sales tax cut in Germany from January.

But she said "underlying price pressures are expected to

remain subdued due to low demand in tourism and travel sectors, and the appreciation of the euro against the dollar.” The euro has risen by more than 10% against the greenback since late February, complicating ECB efforts to push up inflation.

A stronger euro makes imports cheaper, keeping a lid on consumer prices, while exports become less competitive, hurting growth prospects.

Lagarde said the governing council was monitoring exchange rates “very carefully”. For now, the ECB “remains happy at the sidelines and has kept all options open,” said ING bank economist Carsten Brzeski.

“In the absence of any severe economic accident, the ECB is likely to stick to this line at least until late summer,” he added.

**Qatar's growth helps maintain
GECF's status as largest
coalition of global LNG
supplier: Sentyurin**



Wind Generation in Europe Rises to Record in 2020



Total quits US oil lobby over climate policies



Reuters /London

Total yesterday became the first major energy company to quit the main US oil and gas lobby due to disagreements over its climate policies and support for easing drilling regulations. Total said it would not renew its 2021 membership with the American Petroleum Institute (API) following a review of the lobby's climate positions, describing them as being only "partially aligned" with Total's.

Its withdrawal from the century-old API comes ahead of a sweeping change in policy direction in the United States, with incoming President Joe Biden promising to tackle climate change and bring the country to net-zero emissions by 2050.

The points of difference include API's support for the rollback of US regulation on emissions of methane, a potent greenhouse gas, for oil and gas drillers as well as on how to

assign a price to carbon, seen as a critical method to curb emissions.

“As part of our Climate Ambition made public in May 2020, we are committed to ensuring, in a transparent manner, that the industry associations of which we are a member adopt positions and messages that are aligned with those of the Group in the fight against climate change”, Total chief executive Patrick Pouyanné said.

In a statement, the API thanked Total for its membership.

“We believe that the world’s energy and environmental challenges are large enough that many different approaches are necessary to solve them, and we benefit from a diversity of views,” the API said.

Total’s operations in the United States include a number of offshore oil and gas fields in the Gulf of Mexico, a major refining and petrochemical plant in Port Arthur, Texas as well as renewable energy businesses.

Total last year announced plans to cut its carbon emissions, with the aim of reaching net zero emissions from its operations and its energy products sold to customers in Europe by 2050 or sooner.

Europe’s top energy companies, including BP and Royal Dutch Shell, have outlined plans to curb emissions and boost renewable energy output following years of growing investor pressure.

Total, BP and Shell have already pulled out of the American Fuel & Petrochemical Manufacturers, a US oil refining group, also due to differences over climate policies.

They also said they would regularly review their alignment over climate with industry associations but until Friday those companies had elected to remain in API, the primary trade group for the oil and gas industry.

BP last year decided to remain in the API even though it was only partially aligned with the lobby.

Andrew Logan, director for oil and gas programmes and clean energy investor group CERES, said the announcement was significant and would put pressure on other European oil

majors.

“Given the size and influence of API, this is a much more significant move than previous decisions to pull out of more niche trade groups like AFPM.

I think that we will see other companies follow suit,” Logan said.

Senate shift paves way for straight-talking US climate reforms



LONDON: Democratic Senate seat wins in the state of Georgia have given US President-elect Joe Biden a “green light to move forward” on some key shifts in national climate policy, such as much greener pandemic stimulus spending, US policy analysts

said.

With Democrats now in control of the Senate, “it’s a huge, huge difference”, Nigel Purvis, CEO of the Washington-based Climate Advisers policy group, told the Thomson Reuters Foundation.

“This almost doubles what he can do – he has a whole additional range of tools and levers at his disposal,” said Purvis, who has worked with three former US administrations on climate policy.

Biden has proposed a \$2-trillion, climate-smart economic stimulus plan, for instance, which he would not have been able to get through if the Georgia election had turned out differently. “Now he has a real chance,” Purvis added. Biden’s thin Senate majority means he is unlikely to be able to pass a single comprehensive climate change bill, which would require the approval of 60 per cent of senators.

But many measures related to raising or spending money – including stimulus funding for things like electric vehicle infrastructure, or incentives for farmers to sequester more carbon – can win approval with a simple majority.

Biden should, for instance, now be able to back his plans to mainstream climate action into all government agencies with cash to make that possible, said Christina DeConcini, director of government affairs at the World Resources Institute (WRI).

“There are limits for sure, but it’s ... a green light to move forward,” she said. “I really think this is a new day for climate in the United States.”

Talking jobs

How shifts in climate policy are framed for a country politically divided on the issue will be crucial to Biden’s success in bringing change, the analysts said.

Gina McCarthy, former administrator of the Environmental Protection Agency under President Barack Obama and Biden's nominee to become the first national climate adviser, for instance, speaks more about the need for a "cleaner, stronger, more resilient economy" than about climate change.

"We know clean energy supports millions of jobs in the United States and it can support millions more," as well as saving money and improving people's health, she told an online event in November.

To get people behind climate action, governments "need to give citizens and communities a better life today" – not just promises that future catastrophes will be avoided, she added.

Rachel Kyte, a former UN special representative on energy and dean of the Fletcher School for Law and Diplomacy at Tufts University in Massachusetts, said McCarthy and other Biden cabinet picks excel at talking about the need for climate-friendly reforms "in language ordinary people can understand".

"They will find a very main-street narrative for why these are common-sense policies" – and that could galvanize broader bipartisan support, she predicted.

Alden Meyer, a strategic adviser with independent climate change think-tank E3G, noted that during the last fiscal crisis in 2009, the Obama-Biden administration crafted a stimulus package that included \$90 billion for clean energy technology.

Biden's pick for energy secretary, former Michigan governor Jennifer Granholm, in that crisis helped negotiate a rescue of the US auto industry that included an agreement by Detroit to adopt much more aggressive fuel economy standards.

Such "green strings" on stimulus cash will be needed to help drive effective climate action in the United States and globally, climate analysts say.

“This is not new territory for Biden,” Meyer said. “He knows this game very well. He gets this, he feels this in his bones.”

Pressure from the left

Another challenge for Biden, the analysts said, will be keeping onboard factions of the Democratic Party – such as the youth-led Sunset Movement – that are demanding swift, immediate and aggressive action on climate threats.

The Sunrise Movement has already told Democratic Senate leaders it expects “an enormous green spending bill on day one”, Kyte said – and that desire for rapid change may be at odds with efforts to sell climate action to a broader US audience.

Yet, despite paralysing political polarisation on many climate-related issues, a few hints of possible bipartisan compromise have emerged in recent months, the analysts said.

Stimulus and relief packages passed in December included policies that could help set the stage for decarbonisation of the US economy, such as tax incentives for clean energy and carbon capture technologies.

Congress also agreed, with bipartisan support, to phase out hydrofluorocarbons (HFCs), powerful climate pollutants used in air-conditioning and refrigeration equipment.

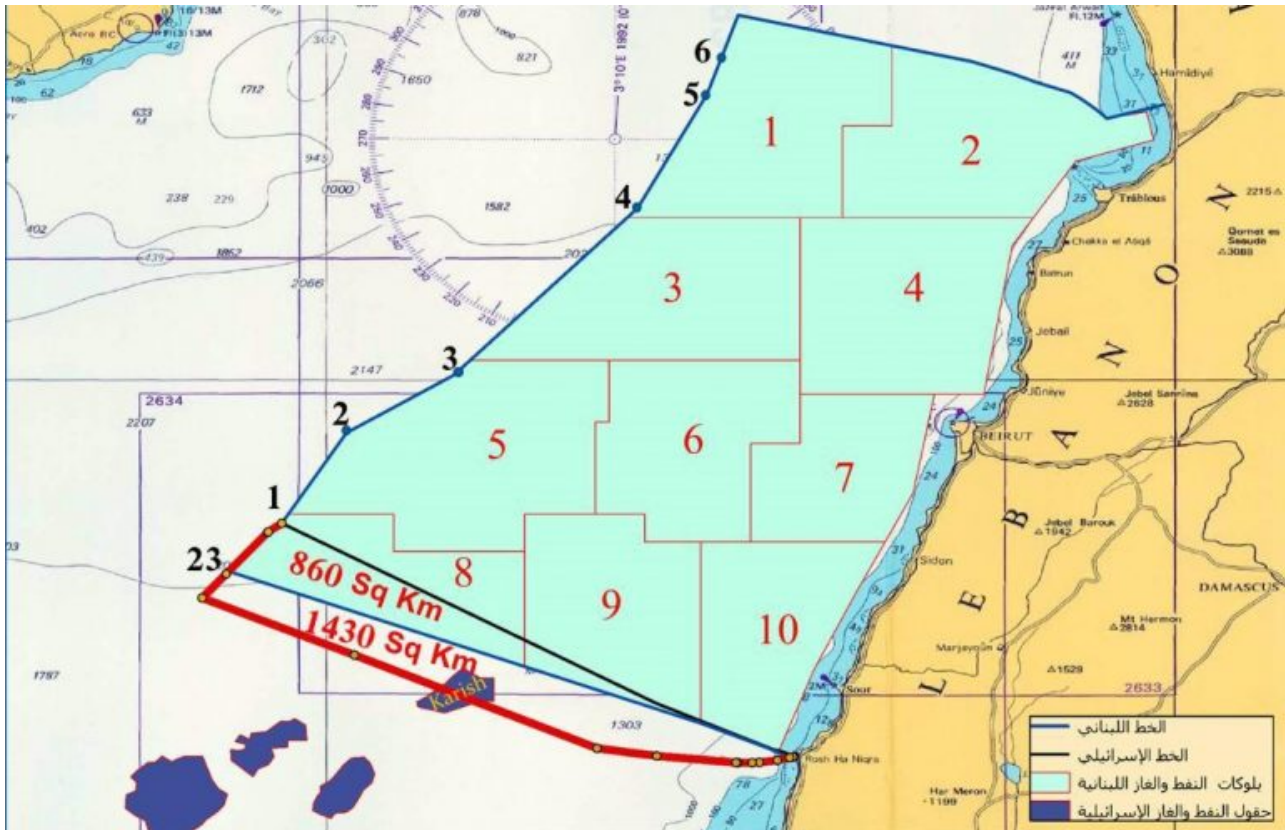
As well, a Democrat-controlled US Congress is likely to work more closely with the cities, states and other bodies that have driven US climate action during global-warming skeptic President Donald Trump’s administration, said WRI’s DeConcini.

US businesses – a growing number of which have adopted net-zero emissions goals, or are having to adhere to tougher climate policies in other countries where they work – also increasingly want consistent, clear climate policy, she said.

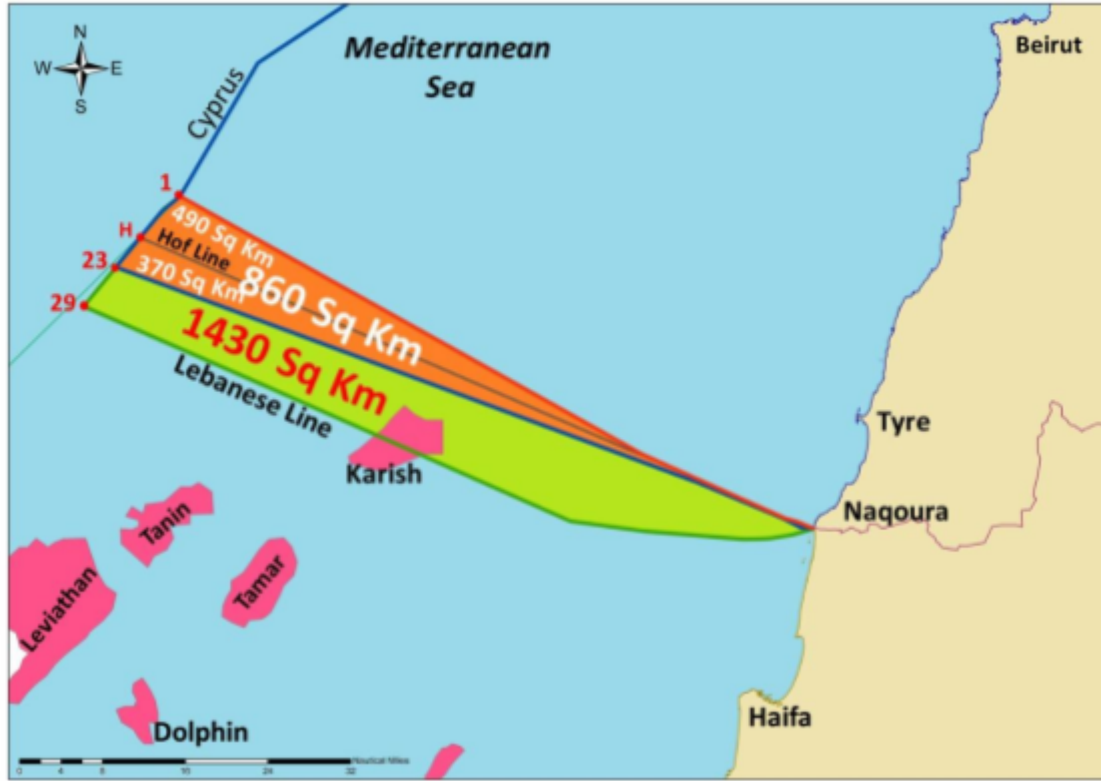
“At some point, the desire to just stay the course – because they see the future on the wall and because it’s good for their bottom line – will become so strong it will provide the political momentum for the U.S. to move toward a decarbonized economy,” she predicted.

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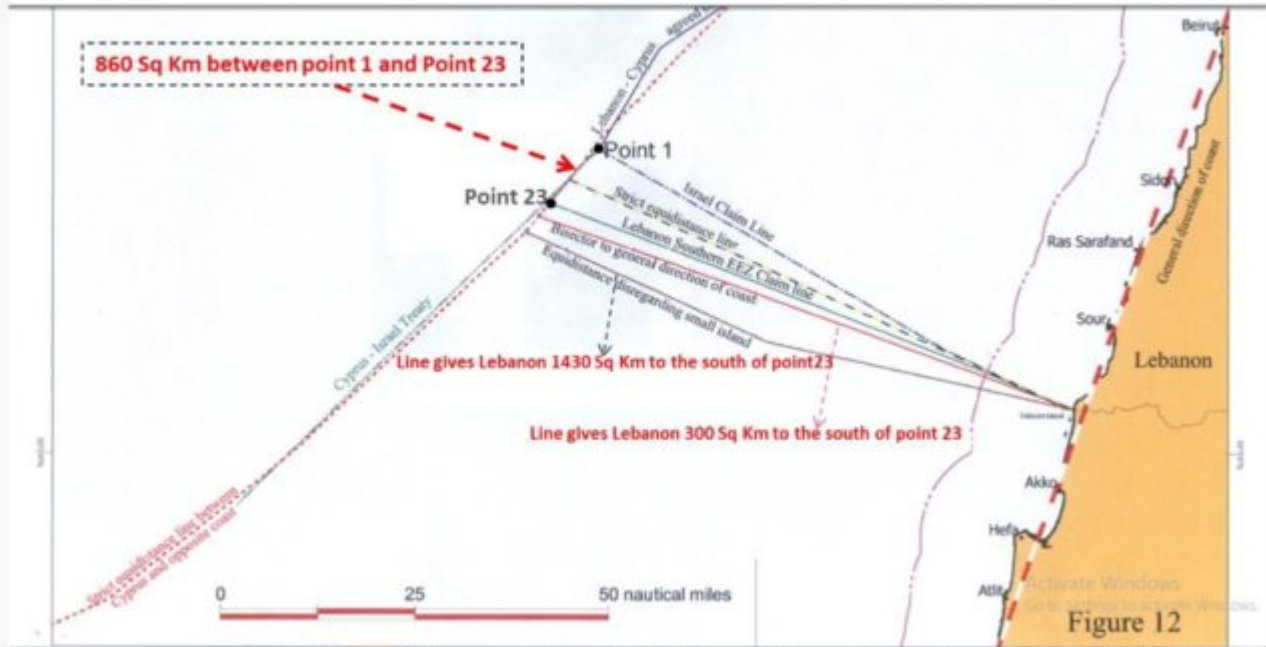
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الخطوط البحرية التي يتم التفاوض حولها



UKHO Map presented by John Brown to Lebanese Government in 2011



Note: some Remarks has been added to the original Map for clarification

إستبشر اللبنانيون خيرًا بإطلاق المفاوضات الحدودية البحرية غير المباشرة مع العدو الإسرائيلي بوساطة أميركية وبرعاية الأمم المتحدة، كون المهمة سلّمت لجيشهم الوطني الذي يثقون به ويعتبرونه المؤسسة الأكثر قدرة على استعادة الحقوق الوطنية التي

. قد تساهم في انتشار لبنان من أزمته المالية الخانقة

خاص الوفد اللبناني الجولات الأربع بكفاءة عالية برغم النيران الصديقة التي تعرّض لها قبل انطلاق مهمته وبرغم تجريده من السلاح القانوني الأهم وهو تعديل المرسوم رقم 6433 تاريخ 1/10/2011 الذي يحدّد النقطة (23) كنقطة حدود ثلاثية في حين أن الوفد اللبناني انطلق من خط يعتمد النقطة (29) أي بزيادة 1430 كلم² عن الخط اللبناني المعلن بموجب المرسوم المذكور وبزيادة 2290 كلم² عن الخط المعلن من قبل العدو الإسرائيلي.

فوجيء وفد العدو الإسرائيلي بصلابة الوفد اللبناني ودفاعه المحكم المستند كلياً إلى القانون الدولي، ولما لم يجد نفسه قادراً على مواجهته بالقانون شنّ حملة إعلامية شعواء بقصد تشويه صورة لبنان وتقليب المجتمع الدولي عليه وبصورة خاصة الوسيط الأميركي.

لم تُعقد الجولة الخامسة التي كانت مقرّرة بتاريخ 2/12/2020 واستعيض عنها بجولة قام بها الوسيط الأميركي على بعض القيادات اللبنانية عرض خلالها العودة إلى التفاوض حول مساحة 860 كلم² لكن الجانب اللبناني أكّد رغبته بمتابعة المفاوضات على أساس القانون الدولي دون حصرها بمساحة معيّنة.

في ظل عدم تحديد موعد جديد للجولة الخامسة، اعتُبرت المفاوضات بحكم المعلّقة، فاستفاد العدو الإسرائيلي من ذلك لإعادة تنظيم صفوفه من خلال تحصين فريقه التفاوض بعد أن فهم جيّداً موقف الوفد اللبناني، وأيضاً من خلال متابعة التحريض الدولي على لبنان.

نجح العدو الإسرائيلي في ذلك فأقدم السيد فريدريك هوف بنشر مقال له بتاريخ 4/12/2020 على موقع " نيوزلاين " شرح فيه بالتفصيل كيف وضع خطه في العام 2012 برضى الجانبين اللبناني والإسرائيلي وذكر إسميًّا اللبنانيين الذين عملوا معه في تلك الفترة. طبعاً لم يكن هذا المقال بهذا التوقيت من باب الصدفة بل هدف منه تذكير اللبنانيين بأنهم سبق ووافقوا على المقترح الأميركي، وبالتالي دعم المزاعم الإسرائيلية القائلة بأن اللبنانيين غير ثابتين على رأي.

بعد فريدريك هوف، دخل وزير الخارجية الأميركي مايك بومبيو على الخط بتاريخ 22/12/2020 فدعا الجانبين للعودة إلى التفاوض على أساس الإدعاءات السابقة التي أودعوها الأمم المتحدة، أي بمعنى آخر العودة إلى التفاوض ضمن مساحة 860 كلم².

وجدت قيادة الجيش أن العدو الإسرائيلي يعتمد المماثلة والمراوغة فاقترحت تعديل المرسوم 6433 لتصبح النقطة الثلاثية هي النقطة (29) بدلاً من النقطة (23) وإيداع المرسوم الأمم المتحدة قبل بدء العدو الإسرائيلي استخراج النفط والغاز من حقل كاريش حيث من المتوقع بدء الإستخراج منه اعتباراً من شهر حزيران/ يونيو المقبل، وبالتالي إجباره للعودة إلى طاولة المفاوضات تحت ضغط عاملي الوقت والالتزامات المادية نظراً لارتباطه ببرنامج زمني مع شركتي شفرون ونوبل انيرجي، الأمر الذي قد يجبره على التنازل ويساعد الوفد اللبناني لتحقيق أقصى الممكن من الحقوق اللبنانية.

انتظرنا الردّ من العدو الإسرائيلي لكن للأسف برزت هجمة سياسية – إعلامية لبنانية، في سياق حملة بدأت بتاريخ 8/1/2020، يبدو أن مطلقها أخطأوا الهدف فبدل التصويب على العدو الإسرائيلي وجّهوا نيرانهم باتجاه الجيش اللبناني فشكّكوا علناً بالخط اللبناني الجديد واعتبروه خطأً إيرانيّاً واتهموا الجيش اللبناني باختلاقه لخلق مزارع شيعا بحرية ولدفع العدو الإسرائيلي لإيصال خطّه إلى قبالة صيدا.

ذنب قيادة الجيش أنها تحلّت بالجرأة فانطلقت من الخط الجديد (النقطة 29) لقناعتها بقانونية هذا الخط برغم معرفتها المسبقة بأن المهمة ستكون أصعب بسبب الأخطاء السابقة التي ارتكبتها عن قصد أو غير قصد بعض الذين تعاقبوا على هذا الملف منذ العام 2006.

فالخط الذي انطلق منه الوفد اللبناني ليس جديداً بل هو نتيجة آراء ودراسات لبنانية وأجنبية وضعت بتصرف السلطات اللبنانية منذ العام 2011 ولكنها لم تأخذ بها لأسبابٍ ما تزال مجهولة حتى الآن ومطلوب من هذه السلطات شرحها للرأي العام اللبناني. أذكر من هذه الآراء والدراسات على سبيل المثال لا الحصر:

- مداخلات خلال جلسات لجنة الأشغال النيابية أثناء التحضير لإعداد القانون رقم 163 والمرسوم رقم 6433 قدّمها كل من وزير التربية الحالي القاضي طارق المجذوب (ممثل مجلس شوري الدولة حينها)، السفير جوني ابراهيم (ممثل وزارة الخارجية والمغتربين)، بالإضافة إلى محاضرة قدّمها الدكتور نبيل خليفة وجميعها تنادي بحق لبنان جنوب النقطة (23).
- دراسة قدمها مكتب الهيدروغرافيا البريطاني UKHO بتاريخ 17/8/2011 قبل يوم من إصدار القانون رقم 163 وقبل أسبوع من نشره في الجريدة الرسمية وقبل شهرين ونصف من إصدار

- المرسوم رقم 6433 يقترح فيها خيارين جنوب النقطة 23. (هل تم إخفاؤها عن النواب أم أنهم علموا بها وأهملوها؟).
- بحث أركان أعده العقيد الركن مازن بصبوص في العام 2013 عن الحدود البحرية بيّن فيه حق لبنان بمساحة 1430 كلم² جنوب النقطة 23).
- محاضرة ألقاها السيد نجيب مسيحي خلال مؤتمر أقامه مجلس النواب بتاريخ 18 و19/7/2019 أكد فيها على حق لبنان بمساحات إضافية جنوب النقطة 23.

كذلك فإن محاولات قيادة الجيش لتصحيح الخطأ ليست جديدة، فقد أرسلت مجموعة كتب إلى رئاسة الحكومة اللبنانية تقترح عليها تشكيل هيئة وطنية تعنى بموضوع الحدود البحرية وتلفت نظرها إلى وجود طرق أخرى تعتمد الحل المنصف وتعطي لبنان الحق بمساحات إضافية جنوب النقطة (23) دون الحصول على جواب سلبيًا كان أم إيجابيًا. أكتفي بذكر ستة من هذه الكتب:

- كتاب رقم 1993 / غ ع / و تاريخ 18-6-2013: على أثر متابعة مؤتمر في لندن حول الحدود البحرية. تم اقتراح إنشاء هيئة وطنية لاجراء دراسات واعتماد الحل المنصف بالاستفادة من الطرق التي اعتُمدت في دول أخرى (كان جواب الحكومة أن هذا الأمر خارج صلاحياتها كونها حكومة تصريف أعمال).
- كتاب رقم 3488/ غ ع / و تاريخ 3-9-2014: تأكيد على الكتاب السابق (كان جواب الحكومة أن لا ضرورة لإنشاء هيئة وطنية).
- كتاب رقم 1801/ غ ع / و تاريخ 12-4-2019: شرح أنه يمكن للبنان تعيين حدوده وفقًا للقوانين والأعراف الدولية بشكل يعطيه الحق بمساحات إضافية جنوب الخط المعلن بموجب المرسوم 6433 بحيث يقع جزء من حقل كاريش ضمن المياه اللبنانية. وطلب إثارة الموضوع في المحافل الدولية لمنع إسرائيل من متابعة العمل في حقل كاريش (بدأت إسرائيل الحفر في حقل كاريش بتاريخ 27 شباط/ فبراير 2020).
- كتاب رقم 10884/ غ ع / و تاريخ 7/11/2019: اقتراح تشكيل لجنة وطنية للبدء بالتحضير للمفاوضات المستقبلية خاصة أن الوقت أصبح داهمًا أمامنا في ظل قيام العدو الإسرائيلي بتطوير حقل كاريش.
- كتاب رقم 5918/ غ ع / و تاريخ 27/12/2019: تم فيه التأكيد على حق لبنان بمساحة 1430 كلم² إضافية وأرفق الكتاب بملف كامل أعدته مصلحة الهيدروغرافيا في الجيش اللبناني.

▪ كتاب رقم 780 / غ ع / و تاريخ 9-3-2020: تأكيد على الكتاب رقم 5918 واقتراح التواصل مع المكتب البريطاني للحصول على المشورة نظراً لتوافر معطيات جديدة لمصلحة الهيدروغرافيا في الجيش اللبناني.

إن مهمة التفاوض هي مهمة وطنية بامتياز، والمحافظة على حقوقنا واجب وطني كونها ترتبط بمستقبل أولادنا وأحفادنا والتفريط بها خيانة وطنية. فأين المصلحة الوطنية باطلاق النار على الوفد اللبناني المفاوض وفي توقيت جاء استتباعاً لمواقف فريدريك هوف ومايك بومبيو؟ هل تعلمون أنكم بهجماتكم هذه تفتحون ثغرات في الجسم الدفاعي اللبناني قد يستغلها العدو الإسرائيلي للتسلل منها وتطويق الفريق اللبناني؟

تذكروا أنكم لاعبون ولستم متفرجين. البارحة رأيناكم تتصارعون على الصلاحيات فما بالكُم اليوم تتراجعون أثناء تحمل المسؤوليات؟ المطلوب منكم التحلي بالروح الوطنية العالية واتخاذ القرارات الجريئة؟ إذا كنتم غير مقتنعين بخط الجيش اللبناني قولوا ذلك صراحة، إتخذوا القرار الذي تريدونه، وزودوا الفريق المفاوض بقراراتكم.

أما إذا كنتم مقتنعين، فعليكم تحصين موقف الوفد المفاوض بتعديل المرسوم 6433. لا يمكنكم أن تطلبوا منه التفاوض على النقطة 29 والرسوم رقم 6433 يحدّد النقطة 23. عدّلوا هذا المرسوم فوراً قبل أن يبدأ العدو الإسرائيلي بالاستخراج من حقل كاريش.

المطلوب تجذّب التجاذبات السياسية والمطلوب محاذرة الوقوع في الأزمة لا المساهمة في بلوغها أو الإنزلاق إليها.. التخاذل في هذا الموضوع جريمة بحق الوطن، بادروا بالتاريخ لن يرحم المتخاذلين، وإلا فلتبادر السلطة السياسية إلى سحب تفويضها للقيادة العسكرية.