Airbus to test hydrogen engine on A380 jumbo jet

By Alex Macheras

Airbus this week announced it will modify a superjumbo A380 to test a hydrogen-powered jet engine as the European aerospace group prepares to bring a zero emissions aircraft into service by 2035.

The partnership is an agreement with CFM International, a 50/50 joint company between GE and Safran Aircraft Engines, to develop an engine that can run on hydrogen. The converted test aircraft, the A380, will fly by the end of 2026.

The programme's objective is to ground and flight test a direct combustion engine fuelled by hydrogen, which Airbus is betting on to enable the company to decarbonise in line with aviation's climate change goals. The A380 flying test jet will be equipped with liquid hydrogen tanks prepared at Airbus facilities in France and Germany. Airbus will also define the hydrogen propulsion system requirements, oversee flight testing, and provide the A380 platform to test the hydrogen

combustion engine in cruise phase.

CFM International will modify the combustor, fuel system, and control system of a GE Passport turbofan to run completely on hydrogen. The engine itself will be mounted along the rear fuselage of the A380 test jet to allow engine emissions, including contrails, to be monitored separately from those of the engines powering the aircraft.

“This is the most significant step undertaken at Airbus to usher in a new era of hydrogen-powered flight since the unveiling of our ZEROe concepts back in September 2020,” said Sabine Klauke, Airbus chief technical officer. “By leveraging the expertise of American and European engine manufacturers to make progress on hydrogen combustion technology, this international partnership sends a clear message that our industry is committed to making zero-emission flight a reality.”

The venture comes amid increasing pressure on the aviation industry to cut pollution and meet zero-emission targets by 2050. Before the pandemic led to the grounding of much of the world’s aircraft, aviation accounted for roughly 2.4% of global emissions. “To achieve these goals by 2050 the industry has to take action now and we are,” said Gael Meheust, chief executive of CFM.

“Is hydrogen harder? Yes. Is it do-able? Absolutely,” said Mohamed Ali, vice-president and general manager of engineering at GE Aviation.

Executives said the decision to use an A380, the world’s largest passenger airline jet that has been phased-out at many airlines around the world due to its inefficiencies, would allow engineers more room for things like the tanks and the testing equipment. A commercial product available to airlines over the coming years will be much smaller. Airbus is expected to initially produce a regional or shorter-range aircraft.

In today’s aircraft, wings are where the fuel is stored, and they are in no way large enough to store the hydrogen that would be needed for a long flight. Hydrogen planes of the future could have extra-large fuselages, but more likely they will be what’s called blended wing, in which the planes are shaped like large triangles. This would allow them to store more fuel, but also reduce fuel consumption to make the aircraft aerodynamics even better.

Planes using hydrogen would emit only water, and initial tests suggest they can be just as fast as traditional planes, carrying more than a hundred passengers per flight over thousands of kilometres.

Most of the world's hydrogen today is produced by reforming methane from natural gas – a fossil fuel – which produces carbon dioxide. Efforts are underway to develop green hydrogen by using an electric current from a renewable source to convert water into oxygen and hydrogen and reduce emissions in its production. If that is possible, along with no emissions from the planes themselves, aviation could become a green form of travel.

There are significant challenges that remain. If Europe were to fully achieve the environmental benefits of hydrogen-power – for example, for air travel, the production of clean – or green – hydrogen needs to be dramatically scaled up. Clean hydrogen is produced from water using an electric current from a renewable source, rather than from fossil fuels. Today only a tiny fraction of hydrogen used in Europe is categorically "clean."

Hydrogen is a high-potential technology with a specific energy-per-unit mass that is three times higher than traditional jet fuel. Airbus notes that, if generated from renewable energy through electrolysis, given the fact it emits no CO2 emissions, it will enable renewable energy to potentially power large aircraft over long distances but without the undesirable by-product of CO2 emissions.

For now, we are still years away from commercial hydrogen aircraft becoming a reality, though. The refuelling infrastructure doesn't exist yet and hydrogen is more expensive and difficult to store onboard than kerosene-based fuel.

"Hydrogen combustion capability is one of the foundational technologies we are developing and maturing as part of the CFM RISE Programme," said Gaël Méheust, president & CEO of CFM. "Bringing together the collective capabilities and experience of CFM, our parent companies, and Airbus, we really do have the dream team in place to successfully demonstrate a hydrogen propulsion system."

Boeing has focused on more sustainable aviation fuels, which currently make up less than 1% of the jet fuel supply and are

more expensive than conventional jet fuel. CEO Dave Calhoun said at an investor conference that he didn’t expect a hydrogen-powered plane on “the scale of airplanes that we’re referring to” before 2050.

Sustainable Aviation Fuel is a clean substitute for fossil jet fuels. Rather than being refined from petroleum, SAF is produced from sustainable resources such as waste oils from a biological origin, or non-fossil CO2. It is a so-called drop-in fuel, which means that it can be blended with fossil jet fuel and that the blended fuel requires no special infrastructure or equipment changes. It has the same characteristics and meets the same specifications as fossil jet fuel.

Since the first commercial flight operated by KLM in 2011, more than 150,000 flights were powered by SAF. More than 45 airlines now have experience with SAF, and around 14bn litres of SAF are in forward purchase agreements.

Several airlines are driving forward the use of SAFs by signing multi-million dollar forward purchasing agreements. Others have invested in start-up support for SAF deployment, and some have promoted SAFs through test flights, research, and investigation of local opportunities. Five airports also have a regular SAF supply: San Francisco, Los Angeles, Oslo, Bergen and Stockholm.

However, scaling up the use of SAFs to a global market is challenging and requires substantial investment. The industry has called on governments to assist potential SAF suppliers to develop the necessary feedstock and refining systems – at least until the fledgling industry has achieved the necessary critical mass and prices drop thanks to economies of scale.*

The author is an aviation analyst. Twitter handle: @AlexInAir

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UAE Minister praises brave

decision by Qatar to pump new investments to boost natural gas production

Doha: United Arab Emirates' Minister of Energy and Infrastructure HE Suhail bin Mohamed Al Mazrouei praised Qatar's decision to pump new investments to enhance its production capacity of liquefied natural gas.

In a speech at the opening session of the 6th Gas Exporting Countries Forum (GECF) Summit in Doha today, he congratulated Qatar on its brave decision to make new investments to enhance its production capacity of liquefied natural gas, which will enhance its role and the role of the region and the forum countries in supplying the world with resources needed by the global economy.

He pointed out that this decision comes in a circumstance

characterized by the lack of investments in previous years in developing new sources of natural gas, especially liquefied gas, due to the low prices witnessed in the world.
The new global trend towards limiting climate change and carbon neutrality should be an encouraging factor for natural gas to occupy a key place in the transition towards energies that are less polluting to the environment, the minister explained, stressing that natural gas is one of the best sources of fossil energy the world will heavily rely on in the coming years during the transition period.
He added that the regional countries represent the majority of natural gas reserves and they bear the responsibility of producing and supplying the world with this wealth, which will be in great demand.
The Minister said that the UAE is working to integrate the role of natural gas with renewable energy and peaceful nuclear energy to achieve its Energy Strategy 2050, in which green energies will represent 50 percent of the energy mix.
He clarified that the UAE’s hosting of the COP 28 on Climate Change in 2023 will be an incentive and an opportunity to cooperate with the GECF to enhance the role of natural gas in the transition period and to work in the interest of member states.
In 2019, Qatar announced its intention to raise its production capacity of liquefied natural gas from 77 million tons per year currently to 126 million tons per year by 2027 through production expansion projects from the North Field, which include huge investments in environmentally friendly technologies.

Qatar committed to low-carbon energy: Amir

*”Qatar has an annual carbon capture and sequestration capacity of up to 2.5mn tonnes, which will reach 9mn tonnes by 2030″ “Qatar will continue to support the efforts to protect the interests of gas exporters, and to preserve the interests of the consumers, and to affirm the full and permanent sovereign rights of the member states to develop and exploit their natural resources”

The State of Qatar has confirmed on many occasions “its commitment to support the transition” to low-carbon energy, said His Highness the Amir Sheikh Tamim bin Hamad al-Thani.

At the opening of the 6th GECF Summit of Heads of State and Government of the Gas Exporting Countries Forum (GECF) member countries on Tuesday, His Highness the Amir referred to Qatar’s carbon capture and sequestration facility and said it has an annual capacity of up to 2.5mn tonnes (of carbon dioxide). This capacity will reach about 9mn tonnes by 2030, he said.

His Highness the Amir patronised the summit’s opening, which attended by Abdelmadjid Tebboune, President of Algeria; Ebrahim Raisi, President of Iran; Filipe Nyusi, President of Mozambique; Teodoro Obiang Nguema Mbasogo, President of

Equatorial Guinea; Abdul Hamid Mohamed al-Dbeiba, Head of the Government of National Unity of the State of Libya; Dr Keith Rowley, Prime Minister of Trinidad and Tobago; and a number of ministers and heads of delegations of brotherly and friendly countries, QNA reported.

It was also attended by a number of sheikhs, ministers, heads of diplomatic missions accredited to Qatar, senior officials, businessmen, decision makers in the field of economy and energy, representatives of international institutions and companies and guests of the summit.

His Highness the Amir noted the transition to low-carbon energy is not only relevant to producers, but also closely related to end-users whose consumption behaviours determine the extent of the effectiveness and success of this transition.

“The transformation efforts must follow a balanced approach that takes into account human and economic development requirements in developing countries and poor societies, where nearly one billion people are deprived of electricity and fuel, the two basic sources required for a decent life for human beings.

“Investing in the ways and means of scientific and technological advances to capture and sequester carbon and reduce methane emissions is an essential component of a successful clean energy transition, and in enhancing the qualitative value that natural gas provides to users around the world, and keeping the global energy economy on a sustainable path.”

His Highness the Amir noted, “To enhance our role in the natural gas industry, we are working to develop and increase our current production capacity of liquefied natural gas from 77mn tonnes per year to 126mn tonnes per year by 2027, through the North Field production expansion projects. “These include huge investments in eco-friendly technologies, namely an integrated system for capturing and injecting carbon dioxide, which, when fully operational, will become the largest of its kind in the LNG industry. Solar energy will be relied upon to generate part of the electricity required for this project.”

Over the past two decades, His Highness the Amir said the world has witnessed a major change in the energy chart, where natural gas has occupied a large space, for several reasons,

including that it is the least harmful energy source to the environment among other fossil energy sources.
Natural gas has been able to occupy increasing spaces in the energy basket in many countries.
The State of Qatar, His Highness the Amir said, “will continue to support the efforts to protect the interests of the gas exporters, and to preserve the interests of the consumers, and to affirm the full and permanent sovereign rights of the member states to develop and exploit their natural resources.
“We will remain committed to enhancing the role of natural gas in the transition to low-carbon economies, and working alongside all our partners to achieve sustainable growth in the gas industry and meet the growing demand for this important source of energy. We will also seek to encourage investments and develop infrastructure and member states’ capabilities to respond to natural disasters and accidents.”
The GECF has played a major role in enhancing the contribution of natural gas to supporting economies and facing environmental challenges, which also contributes to achieving sustainable development goals.
“In this regard, we appreciate the joint efforts of all member states which have worked to provide reliable natural gas supplies to global markets, and maintained the stability of the markets.”
Later, His Highness the Amir yesterday concluded the 6th Gas Exporting Countries Forum, which was held at the Sheraton Doha under the slogan ‘Natural Gas: Shaping the Energy Future’.
The closing was attended by the presidents of Algeria, Iran, Mozambique and Equatorial Guinea, head of the Government of National Unity of Libya, prime minister of Trinidad and Tobago, and a number of ministers and heads of delegations of brotherly and friendly countries.
It was also attended by a number of sheikhs, ministers, heads of diplomatic missions accredited to Qatar, senior officials, businessmen, decision makers in the field of economy and energy, representatives of international institutions and companies and guests of the summit.
In a speech on the occasion, His Highness the Amir expressed “deep appreciation for all the sincere efforts that have marked its activities, leading to the adoption of the Doha Declaration, which came in response to the challenges and

variables we are witnessing around us, and coinciding with a new phase in which natural gas contributes to charting a course towards a more sustainable future."
"Our summit confirmed our conviction that dialogue is the optimum way to achieve consensus, enhance co-operation, and protect the interests of producers and consumers for the good of their peoples," he said, according to an unofficial translation by QNA. "The State of Qatar welcomes working with everyone to make common good, security and stability prevalent among all peoples of the world.
"I reiterate my thanks to you all for your participation in this summit, and I also thank all those who contributed to organising and preparing for it."

Wall St Week Ahead Surging oil prices add another worry for frazzled investors

NEW YORK, Feb 20 (Reuters) – A U.S. stock market, already on

edge from a hawkish Federal Reserve and a conflict between Russia and Ukraine, now has another worry: higher oil prices.

U.S. crude prices stand at around $91 a barrel after surging some 40% since Dec. 1 and earlier this week touched their highest level since 2014. Prices for Brent crude , the global benchmark, have also soared and are near 7-year highs.

Rapidly rising oil prices can be a troubling development for markets, as they cloud the economic outlook by increasing costs for businesses and consumers. Higher crude also threatens to accelerate already-surging inflation, compounding worries that the Fed will need to aggressively tighten monetary policy to tamp down consumer prices.

“The stock market would really run into trouble if we went north of $125 per barrel and stayed there for a while because that would overheat high levels of inflation,” said Peter Cardillo, chief market economist at Spartan Capital Securities. “That means that the Fed would have to be a lot more aggressive and that certainly would not be a pleasant scenario for the stock market.”

Rising tensions between Russia – one of the world’s largest oil producers – and Ukraine recently helped drive the rally in oil, which had been supported by a recovery in demand from the coronavirus pandemic.

Capital Economics analysts said earlier this week that crude oil and natural gas prices would surge if the conflict in Ukraine escalated “even if they fall back relatively quickly as the dust settles.”

Elevated oil prices contributed to the rise in U.S. inflation, which grew at its fastest pace in nearly four decades last month: While overall consumer prices rose 7.5% year-over-year in January, the index’s energy component rose by 27%.

Each “sustained” $10 increase in the price of oil per barrel

adds about 0.3 percentage points to the overall consumer price index, on a year-over-year basis, according to analysts at Oxford Economics.

“The largest impact of higher oil prices is on consumer price inflation and it adds further to the pressure for the Fed to be more aggressive,” Kathy Bostjancic, chief U.S. financial economist at Oxford Economics, said in emailed comments to Reuters.

The benchmark S&P 500 (.SPX) is down over 8% this year while the yield on the benchmark 10-year Treasury note has risen by 40 basis points to over 1.9%. Investors are pricing the Fed funds rate to rise to above 1.50% by the end of 2022, from near zero now, according to Refinitiv’s Fedwatch tool.

CONSUMER SPENDING IMPACT

Rising crude is already raising costs for businesses and drivers. The national U.S. average for gasoline recently stood at $3.48 a gallon, automobile group AAA said earlier this week, up 18 cents from a month earlier and 98 cents from a year ago.

As gasoline prices rise, investors are monitoring trends for consumers, whose spending accounts for over two-thirds of U.S. economic activity. Data on Wednesday showed U.S. retail sales increased by the most in 10 months in January, but last week’s consumer sentiment reading came in at its lowest level in more than a decade in early February. read more

“The risk is that if gas prices at the pump start going up that means less discretionary spending for consumers at a time when a lot of their fiscal benefits from the last couple years are fading,” said Michael Arone, chief investment strategist at State Street Global Advisors.

Investors are gauging the effect of higher oil on companies’ earnings. Typically, rising oil prices are estimated to lift

overall S&P 500 earnings by about $1 per share for every $5 increase in the price of crude, according to David Bianco, Americas chief investment officer at DWS Group, with benefits to energy firms outweighing the drag on earnings of airlines and other companies potentially hurt by higher crude costs. That amounts to about 0.4% of total S&P 500 earnings expected for 2022.

The S&P 500 energy sector (.SPNY) is up 22% so far in 2022 while fund managers in the latest BofA Global Research survey reported their highest allocation to energy stocks since March 2012.

But with oil prices already near seven-year highs, and energy stocks comprising a far lower share of the market than a decade ago, those slim bottom-line benefits may be overshadowed by inflation worries if crude keeps charging higher, some investors said.

“Higher oil prices, without a recession, raise S&P profits,” Bianco said. “But not as much as it used to and you definitely don’t want this happening when the Fed is fighting inflation.”

How Giant Saudi Wealth Fund Is Building a Post-Oil Future: QuickTake

Saudi Arabia’s sovereign wealth fund has been transforming almost as quickly as the country itself. In 2015, the Public Investment Fund, or PIF as it’s widely known, was a sleepy holding company for government investments that hardly anyone outside the kingdom had heard of. Now it’s closing in on $1 trillion in assets as it snaps up everything from soccer clubs to electric carmakers and bankrolls new cities in the desert. The shift underscores the urgency of its mission: to prepare the world’s biggest crude-exporting nation for a post-oil future.

1. What does PIF invest in?

Its biggest holdings are still in local businesses such as Saudi National Bank, Saudi Telecom Co. and national projects like Neom, a $500-billion city-state that would run entirely on renewable power and export green energy. Since 2016, when it committed $45 billion to SoftBank Group Corp.’s technology-focused Vision Fund, PIF’s foreign interests have mushroomed. A 2018 investment in electric carmaker Lucid Motors Inc. has soared in value to almost $40 billion. It also has stakes in

video game makers Activision Blizzard Inc. and Electronic Arts Inc. and the digital services and retail businesses of Indian billionaire Mukesh Ambani. In February, the government transferred an $80 billion stake in Saudi state oil giant Aramco to PIF to boost its assets as the fund prepared to tap the international bond market for the first time.

2. What is the fund's purpose?

To project Saudi influence and diversify the economy, a goal laid out by de facto ruler Crown Prince Mohammed Bin Salman under a plan known as Vision 2030. PIF's job is to stimulate inward investment, develop new industries, bring the kingdom access to new technologies through its foreign investments and create jobs. It's also helping to make Saudi Arabia more attractive to outsiders. In a country largely closed off to foreign tourists, and with entertainment a taboo until a few years ago, PIF is investing in luxury resorts, cinemas and entertainment complexes to lure more visitors (and to stop Saudis seeking fun abroad). It also does deals just to make money. When the coronavirus pandemic crashed markets in 2020, PIF invested $40 billion of currency reserves received from the central bank in a bet on a swift recovery. It sold most of those investments a few months later as stocks rebounded.

3. Why is PIF borrowing money?

While a traditional sovereign fund invests excess national wealth to generate profits in the future, PIF was repurposed as a global investor while the Saudi budget was in deficit. As a result, borrowing has always been part of the plan as it looks to hit its growth ambitions. It's already tapped global banks for multi-billion-dollar loans. Next up is a green bond. While it may seem incongruous for a petrodollar-fueled fund to be raising money from climate-conscious investors, PIF has plenty of environmental projects to target. Saudi Arabia is crafting its tourism strategy around eco-tourism and the fund is the main backer of most of Saudi Arabia's renewable energy projects. Through Neom, it's funding the world's largest

project to produce hydrogen fuel without creating any harmful emissions.

4. How big does PIF want to be?

Prince Mohammed is well known for setting ambitious targets and PIF is no exception. He wants it to be overseeing assets of $2 trillion by 2030, which would make it bigger that Norway's sovereign fund, currently the world's largest at about $1.4 trillion. PIF's assets have almost quadrupled since 2015 to around $580 billion. The path to $2 trillion will involve more big asset transfers from the state. The government expects its first budget surplus in almost a decade in 2022 and the Finance Ministry has said an oil windfall could go into PIF. The fund has also been a major recipient of undeveloped land that's worth zero on paper. If it's used for building, its value can soar.

5. Why did PIF buy a football club?

Soccer teams are often acquired by wealthy individuals as trophy assets and their volatile fortunes can be a turn-off for pension and wealth funds. PIF's acquisition of struggling English Premier League club Newcastle United in 2021 was part of an effort to boost Saudi Arabia's soft power through investments in sports and e-sports. The kingdom's detractors saw the deal as "sportswashing" — an attempt to improve the nation's image and divert attention from a poor human rights record. Saudi Arabia may be following the playbook of neighboring Abu Dhabi, whose Sheikh Mansour bin Zayed Al Nahyan bought another English club, Manchester City, in 2008 and used it as a platform to market the emirate and its state-owned companies around the world.

More stories like this are available on bloomberg.com

LA DOTE ENERGETICA DELL'IRAN TORNA A FAR GOLA AI MERCATI

Roberto Bongiorni – Il Sole 24 Ore Sabato 12 Febbraio 2022– N.42

E se una mano per alleggerire in futuro la dipendenza energetica europea dalla Russia, e raffreddare oggi le quotazioni del greggio, arrivasse proprio dal Paese più sanzionato di tutti?

In questi giorni gli occhi del mondo sono puntati su Vienna, dove è in corso l'8°round di negoziati tra il gruppo 5+1 e la delegazione iraniana sul programma nucleare. È un momento cruciale. I progressi compiuti da Teheran nel processo di arricchimento dell'uranio hanno posto gli Stati Uniti davanti a un bivio; o si conclude un accordo entro febbraio, o poco dopo, oppure sarà troppo tardi.

I mercati del petrolio sono in trepidazione. Se dovesse venire riconfermato il Jpcoa, l'accordo firmato nel luglio 2015, verrebbero rimosse le sanzioni. La riconferma del Jpcoa raffredderebbe subito i prezzi del greggio, oggi sopra i 90

dollari al barile.
D’altronde la dote energetica dell’Iran è invidiabile. Possiede le seconde riserve di gas naturale al mondo e le terze di petrolio. Quando, a inizio 2016, vennero rimosse le sanzioni internazionali contro Teheran, l’Iran sorprese il mondo aumentando in tempi molto più rapidi delle attese la sua offerta di greggio. In 12 mesi l’export più che raddoppiò a due milioni di barili al giorno (mbg). Poi arrivò la doccia fredda: l’8 maggio del 2018 il presidente americano Donald Trump decise di uscire abbandonare il Jpcoa. Le “sanzioni più dure di sempre”, volute Trump, assestarono un durissimo colpo sulle vendite iraniane di greggio. Prima del maggio 2018, l’Iran arrivò a produrre un picco di 4,8 milioni di barili al giorno, esportandone circa tre. Nel 2019, quando si abbatté la scure delle sanzioni, l’export crollò, precipitando nel febbraio 2020 a 400mila barili al giorno, il livello più basso da 30 anni. Oggi la situazione si ripete. Ma lo scenario in cui avviene è diverso. Il prezzo del barile sta puntando ai 100 dollari. Sul mercato europeo, le quotazioni del metano, che in alcune circostanze seguono in parte quelle del greggio, sono quintuplicate in soli sette mesi.

LA DOTE ENERGETICA DELL’IRAN TORNA A FAR GOLA AI MERCATI

La futura ricchezza dell’Iran è invece il gas naturale. L’Iran galleggia su un mare di metano; ha le seconde riserve mondiali. Condivide con il Qatar il giacimento più grande al mondo, South Pars, nelle acque del Golfo Persico. Il Qatar lo sfrutta da tempo ed è divenuto il primo produttore mondiale di gas naturale liquefatto (Lng). L’Iran ne sfrutta solo una minima parte. Nel corso degli anni, nonostante le sanzioni, Teheran è comunque riuscita ad aumentare la produzione di metano, spesso associata all’estrazione di greggio. Ma ne ha esportato molto poco. La gran parte è destinata al mercato interno, dove i consumi sono in costante crescita. Il 73% dell’elettricità prodotto in Iran, Paese da oltre 80 milioni di abitanti, è ricavata proprio dal gas.
Per l’Iran il gas naturale liquefatto è la via più facile, più rapida e più redditizia, spiega da Doha Roudi Baroudi, esperto

di energia ed autore di studi sui gasdotti mediterranei. «L'Iran ha realizzato una serie di gasdotti con la Turchia e l'Iraq (Nel 2020 Iraq e Turchia hanno rappresentato rispettivamente il 64% ed il 33% delle esportazioni iraniane di metano, Ndr) – continua Barudi -. Per raggiungere l'Europa dovrebbe aumentarne la capacità e costruire nuove tratte. In una regione tuttavia estremamente instabile. L'Lng è molto più flessibile».

Nell'Iran settentrionale potrebbe aprirsi un potenziale nuovo corridoio. In agosto il ministero dell'Energia ha infatti ufficializzato la scoperta del più grande giacimento di gas naturale nel settore iraniano del Mar Caspio. Il campo Chalous potrebbe così contribuire alla realizzazione di un nuovo hub del metano nel nord dell'Iran.

Certo, in ogni caso Tehran non potrà prescindere dagli investimenti stranieri. «L'Iran non può fare a meno della tecnologia che solo le compagnie occidentali possono offrire. Ci vorranno investimenti per 60 miliardi di dollari. Si potrebbe rimettere in vita l'accordo con Total», continua Baroudi. Nel 2017 fu proprio la compagnia francese ad essere la prima major a firmare, dopo la rimozione delle sanzioni, un accordo da cinque miliardi di dollari con la National Iranian Oil Company per lo sviluppo e la produzione della fase 11 di South Pars.

Se tutto andrà liscio, ci vorrà comunque del tempo prima che il gas iraniano potrà raggiungere le coste europee. «Prima occorre incrementare la produzione a South Pars. Ci vogliono da uno a tre anni. Poi servono altri 12-24 mesi realizzare gli impianti per liquefare il gas e acquistare le navi per trasportarlo », conclude Baroudi.

Se venisse raggiunto un accordo a Vienna, sul breve termine il greggio iraniano potrebbe dunque raffreddare le quotazioni attuali. Mentre nell'arco di qualche anno il gas di Teheran potrebbe contribuire a diversificare gli approvvigionamenti europei permettendo a Bruxelles di ridurre la dipendenza dalla Russia. Nello scenario peggiore – un'invasione russa dell'Ucraina e un mancato accordo sul nucleare – gli Usa

imporrebbero sanzioni energetiche sul primo produttore mondiale di greggio e gas, e manterrebbero al contempo quelle su uno dei primi cinque esportatori di greggio (con le seconde riserve di gas). L'America possiede gas e greggio in abbondanza per soddisfare la domanda delle sua industria. Chi ci rimetterebbe sarebbero proprio i Paesi europei, Italia in testa.

Aramco Revives Talks on Multi-Billion Dollar Refinery in China

Saudi Arabia's state oil company Aramco has revived discussions to build a multi-billion dollar refining and petrochemicals complex in China, according to several people with knowledge of the matter.
Aramco is holding preliminary negotiations about a facility in

the Northeastern province of Liaoning with partners including Norinco, a state-owned defense contractor, said the people.

Talks over what was meant to be a $10 billion venture were suspended in 2020 as oil crashed at the start of the pandemic. Now, with crude approaching $100 a barrel, Aramco's finances have been transformed, freeing up money for investment in its biggest export market.

China and Saudi Arabia's ties have strengthened as Beijing's need for oil has grown along with its economy. The kingdom was the biggest supplier of crude to China last year, according to data compiled by Bloomberg.

As part of the Chinese refinery plan, Aramco is negotiating terms that could include its trading unit providing crude to the venture, said two of the people. Aramco Trading Co. purchases and sells oil from Saudi Arabia and other countries.

An agreement is not imminent and it's still unclear how much of the original plan still stands, said the people.

Aramco didn't immediately respond to a request for comment. Calls to a Norinco spokesman's office after business hours weren't answered. An email to a spokesman and the general address of the company wasn't immediately answered.

Downstream Expansion

Aramco and Norinco signed a framework agreement in 2017 to construct a refinery capable of handling 300,000 barrel per day of crude. They were also meant to build a 1.5-million-ton-per-year ethylene plant.

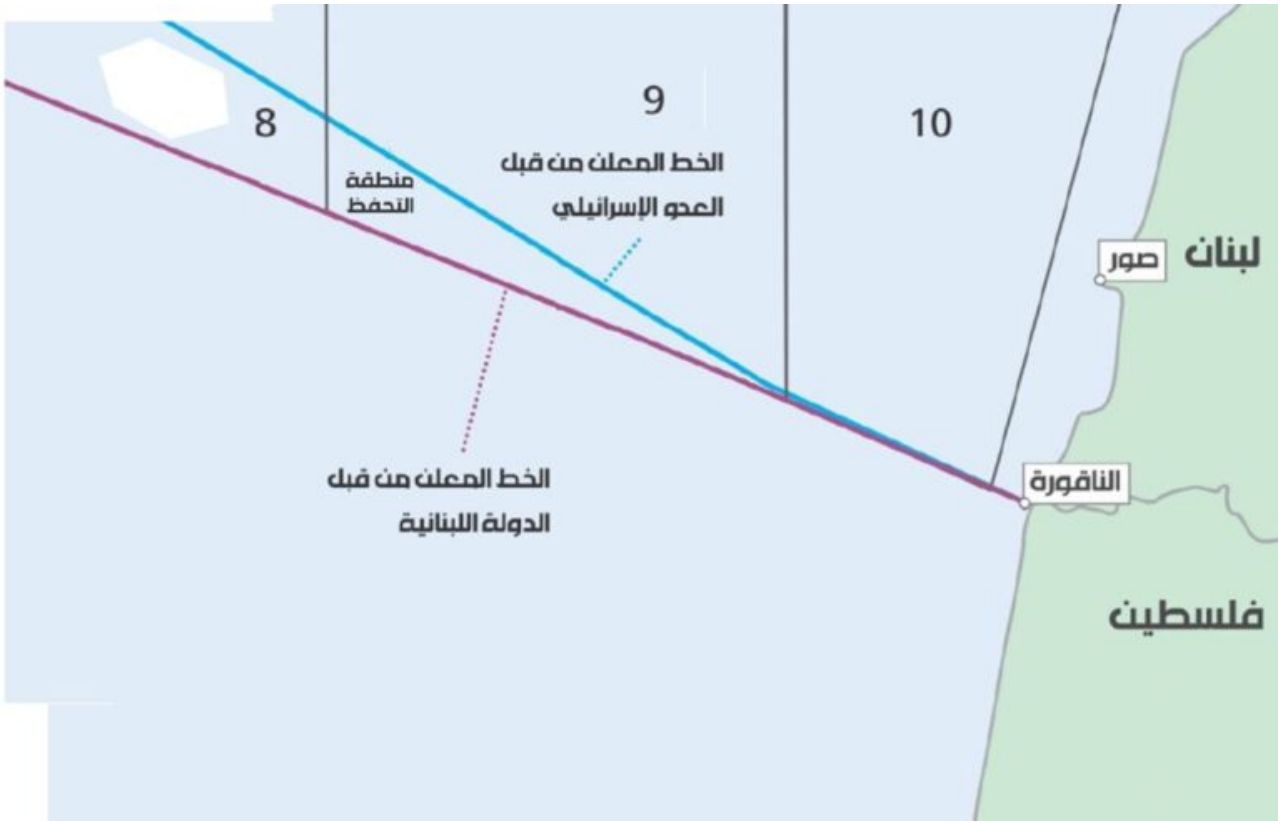
Saudi Aramco cut spending and shelved several projects in 2020 to protect its $75 billion annual dividend, the world's biggest. Its cashflow has jumped this year and rose above its quarterly dividend in the second and third quarters.

The company's downstream business, which includes chemicals subsidiary Sabic, swung to a profit as margins for refined fuel climbed. The unit – which includes refineries, retail

operations, trading and Sabic — made a $4 billion profit before interest and tax in the third quarter.

Aramco aims to roughly double its global refining network to handle as much as 10 million barrels a day by 2030. It was mulling a $15 billion investment in Reliance Industries Ltd.’s oil-to-chemicals unit in India, but the plan was scrapped late last year.

هوكشتاين إلى بيروت الثلثاء حاملاً «مقاربة» تعيد إحياء مفاوضات الترسيم... لبنان ينتظر «الاقتراحات»



موريس متى – 02-2022-

يصل الى بيروت الثلثاء المقبل المنسق الاميركي لشؤون الطاقة الدولية والوسيط في موضوع #ترسيم الحدود البحرية الجنوبية آموس هوكشتاين آتيا من تل أبيب وفي جعبته تصور لكيفية إعادة إحياء المفاوضات غير المباشرة بين لبنان وإسرائيل لترسيم الحدود، فيما تشير المعلومات الى إمكان ان يحمل هوكشتاين للجانب اللبناني ردا رسميا إسرائيليا على الشروط اللبنانية التي تعيد الوفد اللبناني الى طاولة المفاوضات.

تتعدد الروايات والتحليلات لما قد يحمله المفاوض الاميركي معه الى بيروت، في حين تشير المعلومات الى امكان ان يقترح الابقاء على الخط 23 وإسقاط الخط 29 والتأكيد على حق لبنان بمساحة الـ 860 كلم2 المتنازع عليها، شرط التأكيد على ملكية إسرائيل لحقل «كاريش» على ان يكون حقل «قانا» من حصة لبنان. ولكن، في حال صدقت هذه التوقعات، نكون قد انتقلنا من حل «علمي» لترسيم الحدود الى حل «سياسي» يسقط الخطوط المقترحة لكون جزء من حقل «قانا»، الذي تقدّر احتياطاته بمليارات الدولارات، وقد يصل حجم ثرواته إلى ضعفَي حقل «كاريش»، وثلثا هذا الحقل موجودان في البلوك الرقم 9 اللبناني، أما الثلث المتبقي فموجود مباشرة تحت الخط 23. وحتى مع اعتماد الخط 23 والابقاء على مساحة الـ 860 كلم2 لمصلحة لبنان، فان أي حل لا يحفظ كل حقل «قانا» لمصلحة لبنان لن ترضى به بيروت. ويبدو ان الجانب الاسرائيلي هو الاكثر «إستعجالا» للإنتهاء من ملف ترسيم الحدود البحرية مع لبنان، حيث تترقب إسرائيل وصول باخرة التنقيب في آذار المقبل لبدء العمل في حقول «تانين» و«كاريش نورث» و«كاريش ساوث»، مع الاشارة الى ان كل حقل «كاريش نورث» يقع ضمن المنطقة المتنازع عليها مع لبنان، في حين ان ما بين 5% الى 10% من حقل «كاريش ساوث» يقع ضمن المنطقة المتنازع عليها. وفي أحدث التطورات المتعلقة بسعي إسرائيل للإسراع في بدء العمل على هذه الحقول، وبعد أيام من اعلان وزير الطاقة الإسرائيلي تمنياته باستئناف المفاوضات الحدودية مع لبنان بوساطة أميركية قريبا، توقّع شركة «إنرجين» اليونانية التي تعمل على حقول غاز «كاريش» و«كاريش الشمالي» و«تانين» قبالة السواحل الاسرائيلية، عقد بدء استخراج الغاز من حقل «كاريش» بحلول الربع الثالث من العام الحالي مع استخدام سفينة FPSO التي بنتها شركة Sembcorp Marine في سنغافورة بكلفة مليار دولار، على ان تبحر هذه السفينة نحو الشواطئ الاسرائيلية في الأشهر المقبلة وتحتاج الى 35 يوما للوصول الى النقطة المتفق عليها في البحر، والى 3 اشهر بعد تاريخ الوصول لبدء مهمتها. وفي تشرين الثاني الفائت، أكدت شركة «إنرجين» ان

موعد إنتاج الغاز من حقل «كاريش» يبقى في النصف الثاني من العام 2022 بعدما توقعت الشركة في العام 2018 ان تبدأ عملية استخراج الغاز من حقل «كاريش» في الربع الاول من العام 2021، لكن الظروف لم تصبّ في مصلحة تل ابيب لناحية الالتزام بالوقت المحدد نتيجة الخلافات السياسية الداخلية وازمة حكومة رئيس الوزراء الإسرائيلي السابق بنيامين نتنياهو، اضافة الى جائحة كورونا وغيرها.

وفي هذا السياق، أكد الرئيس التنفيذي لشركة «إنرجين» ماتيوس ستكون جاهزة للإبحار نحو المياه الاسرائيلية FPSO ريغاس ان سفينة في نهاية آذار المقبل، على ان تعمل في حقل «كاريش» ولتبدأ عملية استخراج الغاز في الربع الثالث من العام الحالي لتنتقل بعدها الى حقل (NEA/NI) المصري.

الخبير الدولي في شؤون الطاقة رودي بارودي يرحب بأي وساطة من الولايات المتحدة لإعادة إحياء المفاوضات غير المباشرة بين لبنان وإسرائيل، معتبرا انها «بالتأكيد موضع ترحيب كبير إقليميا ودوليا وذلك للمضي قدمًا بشكل تدريجي في التوصل إلى حلول عادلة ومنصفة للنزاع بين إسرائيل ولبنان في شأن مسألة ترسيم الحدود». ويعود بارودي ليذكّر بما ورد في إحدى الدراسات من حيث الاخطاء التي ارتكبها لبنان لناحية إعطاء الإحداثيات البحرية في العام 2010، اضافة الى الاحداثيات البحرية الخاطئة التي أعطتها إسرائيل للأمم المتحدة في العام 2011، إذ تبين أن لبنان بدأ على مسافة 64 مترًا في حين ان إسرائيل (LTP)تقريبًا من نقطة الحدود عند نهاية البر بدأت على مسافة نحو 32 مترًا من الشاطئ عند نقطة رأس الناقورة المتفق عليها، ومن هنا لا يستبعد بارودي ان تجبر أي محكمة دولية أو الأمم المتحدة كلاً من لبنان وإسرائيل على الالتزام بإعادة النظر في هذا الخطأ وتصحيحه في حال لجأ اي من الطرفين الى الادعاء امام إحدى المحاكم الدولية او تقديم شكوى امام الامم المتحدة رفضاً لأي حل قد يُعتبر غير عادل. ومن أوجه التناقض الجوهرية أن النظام لم يكن موجوداً في الفترة ما بين (GPS) العالمي لتحديد المواقع 2010 و2011، أما حاليا ومع خدمات تصوير الأقمار الاصطناعية العالي الجودة، يمكن كلا البلدين إصلاح الاحداثيات البحرية الخاطئة في غضون أيام. وفي دراساته المختلفة في شرق البحر المتوسط، يؤكد بارودي وجود حقل غاز متداخل يقع بالقرب من حقل «ألون – د» الإسرائيلي اي البلوك 72 الذي يمكن أن يمتد إلى المياه الإقليمية اللبنانية، فيما يمكن التعامل مع هذا الحقل مثل أي حقل آخر في العالم من خلال

ما يُعرف بـ»اتفاقية التنمية المشتركة». وقد اختارت شركة «توتال» الفرنسية عند تحديد نقطة الحفر في البلوك 9، نقطة تبعد 25 كلم عن حقل «قانا» لعدم الدخول في أي نزاعات قضائية. وفي هذا الإطار يؤكد رودي إمكان ان يبدأ تحالف شركات «توتال – إيني – نوفاتك» بالحفر الاستكشافي الخاص بها على مسافة 10-15 كلم شمال المنطقة المتنازع عليها، كما تفعل في البلدان الأخرى حول العالم وتحديداً ما هو حاصل حاليا في قبرص.

إسرائيل إحتجت في رسالة وجهها في الاسابيع الأخيرة رئيس بعثتها في الأمم المتحدة الى الأمين العام أنطونيو غوتيريس يبدي فيها اعتراض تل ابيب على فتح لبنان دورة تراخيص هي الثانية للتنقيب عن النفط والغاز في المياه البحرية، إذ يعتبر الجانب الاسرائيلي ان دورة التراخيص الثانية تمتد الى «المياه الاسرائيلية»، أي الى مساحة الـ860 كلم مربعا المتنازع عليها بين الجانبين، وجددت بالتالي تمسكها بهذه المساحة ما بين الخط 1 والخط 23. وحذرت تل أبيب شركات التنقيب عن النفط من القيام بأي أعمال استكشاف أو تنقيب لمصلحة لبنان في هذه المنطقة، لتعود الى الواجهة التساؤلات حول تأخر وزارة الخارجية اللبنانية في توجيه كتاب الى الأمانة العامة للأمم المتحدة للإعتراض على الرسالة الاسرائيلية والتأكيد على تمسّك لبنان بالخطّ 29 وبالمفاوضات غير المباشرة لربط النزاع مجددا مع الجانب الاسرائيلي، خصوصا ان لبنان لم يقر بعد تعديل المرسوم 6433، ولكن يبدو انه قرر «المهادنة» في انتظار ما سيحمله المفاوض الاميركي في جعبته الى بيروت.

ExxonMobil posts $23bn in 2021 profi ts on higher oil prices

ExxonMobil reported a profitable fourth-quarter Tuesday to conclude a strong comeback year in 2021 on higher oil prices amid recovering energy demand.

The oil giant reported annual profits of $23 billion last year compared with a loss of $22.4 billion in 2020 when demand was dented by the Covid-19 lockdowns. High oil prices helped boost results again during the quarter, although increased costs cut into gains in some operations.

“Our effective pandemic response, focused investments during the down-cycle, and structural cost savings positioned us to realize the full benefits of the market recovery in 2021,” said Chief Executive Darren Woods.

In the fourth quarter, ExxonMobil’s upstream business benefited from higher prices in oil and natural gas, which surged 63 percent compared with the third quarter.

The company also benefited from a profitable run in its downstream business in a reversal from last year’s fourth

quarter, as well as increased earnings in chemicals.

However, ExxonMobil said profits in its European refining operations were limited somewhat by higher energy prices. The company also flagged higher feed and energy costs as a drag in its chemical business.

On Monday, ExxonMobil announced it was combining its chemical and downstream businesses as it enacts $6 billion in cost savings through 2023. The company is also shifting its corporate headquarter to Houston from Irving, Texas near Dallas.

Higher oil prices set to lead to higher twin deficits, inflation in most Fitch-rated energy importers in Mena

Higher oil prices are set to lead to higher twin deficits and inflation in most Fitch-rated energy importers in the Middle East and North Africa (Mena), the agency has said in a new report. Most of these Mena countries with the exception of GCC sovereigns are net importers of hydrocarbons. “We assume oil prices will moderate to average USD70 a barrel in 2022 (similar to 2021) and fall further in 2023- 2024.However, price risks are to the upside,” Fitch Ratings said. In all but one Mena oil importers, regulated electricity prices are below the cost recovery level. Support to electricity sectors is a significant contributor to fiscal deficits and/or the build-up of indebtedness in Jordan, Lebanon and Tunisia, it said. Electricity prices for consumers have been flat through 2020-2021 in Morocco and Tunisia but have risen in Egypt, Jordan and Lebanon. In Egypt, this is part of a programme of tariff hikes. Countries are generally seeking to enact reforms over the medium term that will raise tariffs (at least for some consumers) while providing targeted assistance. Petroleum subsidies have largely been removed across the region, and prices adjust to oil market fluctuations, although subject to decisions by a pricing committee in most countries and a small monthly adjustment cap in Tunisia. Higher global oil prices have trickled through to transportation CPI inflation across

the region. According to Fitch Ratings, higher energy prices will widen current account deficits (CADs) of net energy importers, particularly Lebanon, Tunisia, Jordan and Morocco. In Tunisia, this will put pressure on (currently adequate) foreignexchange reserves, amid lack of access to external funding. In Lebanon, import volumes will be constrained by dwindling reserves, absence of external funding and a collapsing economy. Rising prices of hydrocarbon feedstock could eventually require changes in tariffs or higher fiscal outlays to support electricity sectors, although electricity companies can absorb higher losses in the short term. Gas pricing is linked to oil prices, but long-term supply agreements cushion the impact of hydrocarbon price swings (in Jordan and Tunisia), as does domestic hydrocarbon production (in Egypt, Israel and Tunisia) and electricity generation from renewables (most importantly in Morocco), Fitch said.