European goodbye to negative rates – or is it just ‘au revoir’?

By Mark John And Dhara Ranasinghe/ London

Europe’s decade-long experiment with negative interest rates, which ended on Thursday with the Swiss National Bank’s return to positive territory, showed one thing: they can exist beyond the realms of economic science fiction.

Launched to revive economies after the 2007/08 financial crisis, the policy flipped standard money wisdom on its head: banks had to pay a fee to park cash with their central banks; some home-owners found mortgages that paid them interest; and rewards for the act of saving all but vanished.

With the exercise now abandoned in the face of galloping inflation brought on by pandemic and the Ukraine war, doubts linger over its effectiveness and under what circumstances it will ever be used again.

“I think that probably the bar is going to be higher in the future,” said Claudio Borio, head of the Monetary and Economic

Department of the Basel-based Bank of International Settlements which acts as bank to the world's central banks.

Rarely does monetary policy generate as much sound and fury as did the recourse in the early 2010s to negative rates by four European central banks and the Bank of Japan – now the only monetary authority still sticking with them.

With interest rates back then already close to zero, they had run out of conventional ammunition to ward off the threat of outright deflation they feared would choke off the economic recovery. The only way out, they decided, was to go below zero.

Bank chiefs fumed as the European Central Bank, Swedish Riksbank, Swiss National Bank (SNB) and Denmark's Nationalbank went negative in moves they said undermined the whole banking business model of being able to make a profit out of lending.

Local media joined in the criticism, with Swiss newspapers in 2015 calling the moment "Frankenshock" and Germany's Bild labelling the then ECB chief Mario Draghi "Count Draghila" for "sucking our accounts dry".

For sure, those who relied on the return from cash savings clearly suffered during Europe's period of ultra-low to negative rates – even if they could at least take solace from the fact that low inflation was protecting their initial savings.

Other side-effects are harder to pick apart.

Fears of negative rates leading to money-hoarding proved largely unfounded: in Switzerland, for example, the number of 1,000-franc notes in circulation remained the same, suggesting customers were not withdrawing cash to store in a safe at home.

As one Danish bank vaunted the world's first negative rate mortgage, it is likely that cheap borrowing added steam to house price spikes across the region. But prices were often being squeezed higher by local factors including tight supply.

While many other elements have been at play, euro area bank stocks have fallen some 45% since 2014 – despite ECB moves to shield them with exemptions from charges on some deposits and

access to ultra-cheap borrowing.
Yet a report to European Parliament by the Bruegel think tank last year concluded that overall bank sector profits had not been significantly harmed by negative rates, noting that the downside was being offset by gains in asset investments.
“In the end, they worked the same as normal rate cuts,” said report co-author Gregory Claeys, while acknowledging the impact may have been greater had the experiment gone on for longer.

No future?
The question of whether negative rates actually achieve their goals is harder to answer given the modest extent of the trial – no-one ever went lower than minus 0.75% – and the fact that they have been swept aside by the turmoil of the last two years.
ECB policy-makers point to data showing that lending in the euro zone was shrinking year after year in the 2010s until negative rates helped turn that into growth by 2016 – even though that growth has never attained its pre-2009 heights.
Others point to the fact that the negative rate period coincided with the vast quantitive easing with which the ECB and other central banks around the world also boosted demand with trillions of dollars of asset purchases.
“That was a much bigger deal – much more impactful,” said Brian Coulton, chief economist at Fitch Ratings. “Using your balance sheet aggressively – that is a powerful weapon.”
Some economists argue negative rates create perverse incentives that ultimately do a disservice to the economy – for example by keeping alive “zombie companies” that by rights should fold, or by removing the impetus for governments to push tough reforms.
“What is lacking, in Europe, is the focus on structural reforms. Why didn’t they happen in the last 10 years, why didn’t we strengthen productivity growth?” said Societe Generale senior European economist Anatoli Annenkov.
Burkhard Varnholt, Chief Investment Officer Switzerland,

Credit Suisse Switzerland, goes further, saying the message they send about investing in the future was even akin to the nihilism of the No Future refrain of the 1977 Sex Pistols' punk rock track God Save the Queen.

"It's the central bankers who have taken interest rates to a level where we attach no value to the future," he said. "Today's punks wear white shirts, grey suits and a blue tie."

As the negative rate era closes, the global pool of assets with negative yield has shrunk to less than $2tn from a 2020 peak of some $18tn.

Despite the misgivings, others say the experiment has at least shown policy-makers that rates can go below zero and so is an option for them: witness the fact the Bank of England for a while considered that path as Covid-19 was ravaging the economy.

Even if the current inflationary bout means it could be a while before Europe's central bankers need to use negative rates again, it is unlikely they will want to rule them out.

"They will always be spoken of as something that remains in the toolkit," said Rohan Khanna, strategist at UBS in London. "I am very doubtful anyone here is ready to say never again for negative rates." — Reuters

---

The EU's carbon border tax could hurt developing nations

By Miriam Gonzalez Durantez And Calli Obern/ Stanford

In July 2021, the European Commission did something that no other major governing body had ever attempted: It tied trade policy to climate policy. Reaching the European Union's goal of cutting net greenhouse-gas emissions by 55% by 2030 will require the EU to reduce emissions both at home and beyond its borders. To this end, the Commission's Fit for 55 initiative, a package of proposals aimed at meeting the bloc's emissions-reduction target, includes a carbon border adjustment mechanism (CBAM) – an import tax designed to corral other countries into tackling climate change.

The CBAM would tax imported goods sold in EU markets on the basis of their carbon content (the emissions required to produce them), which depends on their material and energy inputs. The proposed levy is intended to address so-called carbon leakage, which occurs when businesses in the EU move production to non-member countries with less stringent emissions rules.

In other words, Europe would no longer ignore the climate effects of foreign goods. But while the measure could help to reduce emissions and level the competitive playing field for EU-based firms, the trade protectionism that it entails risks

hurting developing countries.

The CBAM will initially apply to the highest-emitting industries most at risk of leakage – iron and steel, cement, fertilisers, aluminium, and electricity generation – and will likely be expanded to other sectors in the coming years. Currently, EU-made products in these industries are taxed under the domestic carbon price, but those from outside the bloc are not. If a country already has a domestic carbon price, the border tax will be lowered or waived; this is meant to encourage countries to tax carbon in their own markets. Those that cannot or will not institute a carbon tax will have to pay the full levy.

The EU tax will be phased in over the next four years. By 2023, importers will be required to report emissions embedded in the goods they import, though the tax on those emissions will not be imposed until 2026. The €1bn ($1.1bn) of annual revenue expected from the CBAM, as well as the €9bn in annual revenue expected from the EU Emissions Trading System from 2023-2030 and taxes on multinational corporations, will support the Union's €750bn Covid-19 pandemic recovery fund. These new sources of revenue will embed EU priorities – including the green transition – in the bloc's budget for the first time.

Though not yet approved, the proposed tax is already influencing the decisions of policymakers and companies in the EU's trading partners. For example, Turkey and Indonesia plan to introduce carbon taxes to mitigate the CBAM's effects on their economies. Turkey is highly exposed, because the EU accounts for 41% of its exports. Indonesia exports billions of euros' worth of palm oil and chemicals to the EU – goods that could fall under a broader border tax. Adopting a domestic carbon price will allow them to avoid some or all of the CBAM and keep the tax revenues instead of transferring them to the EU.

Meanwhile, some EU-based companies in industries such as computer hardware are looking to reshore manufacturing operations ahead of the CBAM's introduction. Their main motive

does not reflect the cost of the tax so much as the likely complexity, bureaucracy, and unpredictability of the system. It is easier and cheaper for companies to relocate production to the EU and avoid the administrative hurdles that the CBAM could create.

Such shifts will be a win for the EU's economy and the environment. And Russia's invasion of Ukraine could accelerate the EU's efforts to achieve greater economic self-sufficiency, not least by reducing its dependence on energy-intensive imports of Russian iron and steel.

But developing economies, which often depend on manufactured products, will likely experience an outflow of activity as firms relocate to the EU. Rather than addressing only carbon leakage and leaving developing countries to adapt as best they can, the EU should allocate part of the revenue from the proposed CBAM to help foster a just green transition for poorer countries.

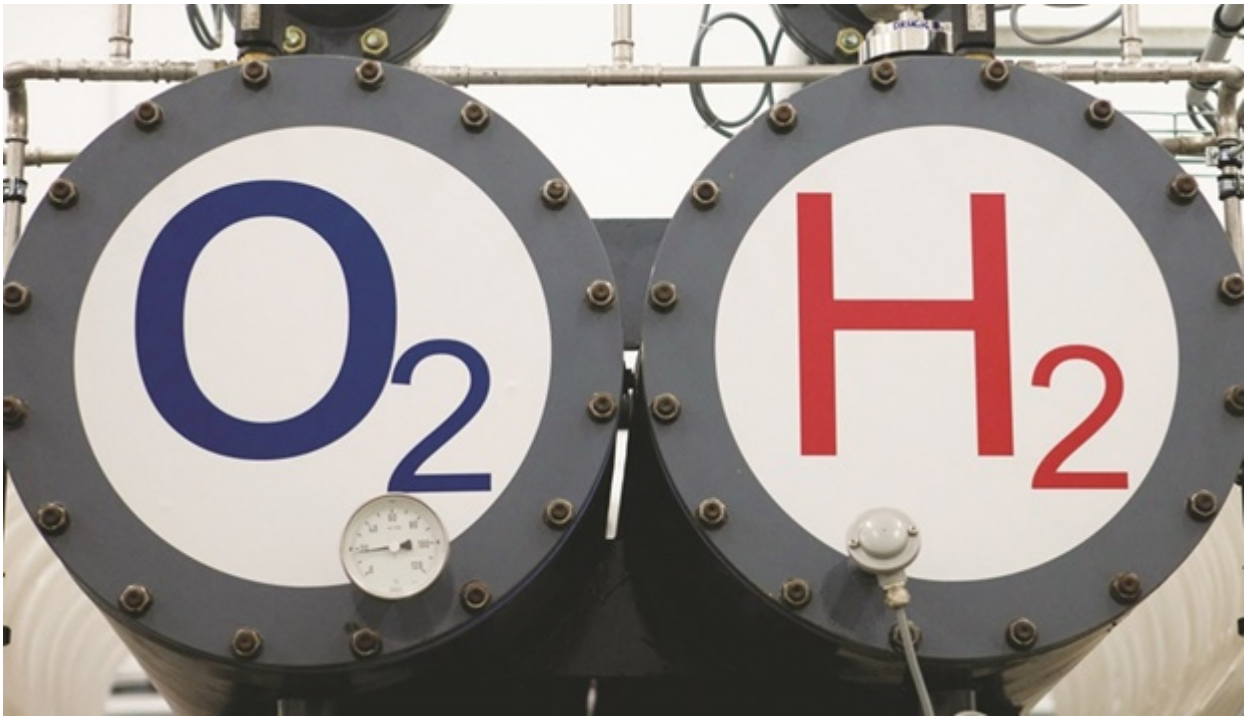
It is not easy or cheap to decarbonise energy-intensive goods like cement and steel. But the EU could prevent negative knock-on effects for developing economies – not only by waiting for lower-income countries to introduce their own carbon taxes (which will be a challenge given their limited administrative capability in the field), but also by supporting those that need the most help to reduce their emissions.

Such support could be provided by dedicating resources and technology to improve the efficiency of industrial processes, financing renewable energy projects, and exempting the poorest countries from the CBAM where necessary. The EU should also dedicate part of the CBAM revenue to help developing countries adopt cleaner technologies – to produce greener cement in Vietnam or chemicals in Indonesia, for example – and thus reduce emissions in the long run.

Europe sees itself as a global leader in the race to net-zero emissions. By helping to finance the developing world's green transition, the EU could mitigate the protectionist threat in its own climate agenda. – Project Syndicate

• Miriam Gonzalez Durantez is an international trade lawyer and guest lecturer at Stanford University. Calli Obern, a master's candidate in international policy at Stanford University, is a research fellow at Ecospherics, an advisory firm focusing on environmental and national-security issues.

The coming green hydrogen revolution



By Jean Baderschneider/ Washington, DC

Human-induced climate change is causing dangerous and widespread environmental disruption and affecting the lives of billions of people around the world. According to the Intergovernmental Panel on Climate Change, the world faces unavoidable climate hazards over the next two decades. But, with average annual global greenhouse-gas emissions reaching their highest levels in human history between 2010 and 2019, we are simply not doing enough to limit global warming to

1.5C.

The IPCC report released in April recommended that the world rapidly reduce fossil-fuel supply and demand between now and 2050: by 95% in the case of coal, 60% for oil, and 45% for natural gas. But how can we possibly achieve such ambitious targets?

The answer is by switching to green hydrogen, which can be produced from all forms of renewable energy, including solar, wind, hydro, and geothermal. Green hydrogen is a zero-emissions fuel; when produced through electrolysis, the only "emission" is water. It is a practical and implementable solution that, by democratising energy, decarbonising heavy industry, and creating jobs globally, would help revolutionise the way we power our planet.

A rapid acceleration of the green-energy transition can also fundamentally alter the geopolitical landscape, since countries will no longer be powerful simply because of the fossil fuels they produce. In 2021, Russia provided 34% of Germany's crude oil and 53% of the hard coal used by German power generators and steelmakers. Russian-piped natural gas was Germany's largest source of gas imports in December 2021, accounting for 32% of supply. Since Russian President Vladimir Putin launched his horrific, unjust war in Ukraine in February, fossil-fuel exports to Europe have been earning Russia roughly $1bn a day.

But since the start of the invasion in February, European Union countries in particular have moved quickly to reduce their energy dependence on Russia, recently agreeing to ban all seaborne imports of Russian oil. These new sanctions against Putin's war machine could cut the amount of oil the EU buys from Russia by 90% this year. The United States has declared a complete ban on Russian oil, gas, and coal imports, while the United Kingdom is phasing out imports of Russian oil by the end of 2022.

These policies have sent fuel prices soaring. But sharply higher prices have also highlighted the opportunity to drive down energy costs by investing in renewables and the

production of green hydrogen.

New research suggests that green hydrogen will be competitive with fossil fuels over the next decade. The cost of green hydrogen is expected to decline significantly by 2025 and to fall to $1 per kilogram by 2030 in favourable locations such as Australia. For comparison, grey hydrogen, which is made using polluting liquefied natural gas, currently costs around $2 per kilogram.

Some advocate using LNG to “solve” the current energy-security crisis, but “natural gas” contains methane, and the IPCC says that we must reduce use of natural gas by almost 45% by 2050; adding more to the energy mix now would be a catastrophic mistake.

So, there is now a global race for green energy, and specifically for green hydrogen. Dozens of countries that have abundant renewable-energy sources can develop energy independence by producing green hydrogen at scale. And energy importers will not have to rely only on the few countries (such as Russia) that have a natural endowment of fossil fuels.

In a recent report, the International Renewable Energy Agency said that (green) hydrogen can bolster energy security in three main ways: by reducing import dependence, mitigating price volatility, and boosting energy systems’ flexibility and resilience through diversification. As technologies improve, the cost of green hydrogen will fall. We must do everything we can to accelerate this process.

Companies like Fortescue, where I am a board director, are investing significantly in green hydrogen and will help to replace Russian fossil fuels with green energy. Fortescue recently announced an agreement with Germany’s largest energy distributor, E.ON, to supply Europe with 5mn tonnes of green hydrogen a year by 2030 – the equivalent of one-third of the calorific value of the energy that Germany currently imports from Russia.

But while rapid changes in the energy and geopolitical landscape present a clear opportunity to address the energy

and climate crises simultaneously by investing in green energy, there is a clear perception of unfairness when developed countries claim that relatively low-emitting developing economies need to shut down fossil-fuel use. Why should they risk slowing their development to address a problem they played no part in causing?

It's a valid question. Policymakers will need to account for developing countries' interests during the green transition and enhance funding and incentives for them to move to clean energy as the basis of industrialisation.

The world is clearly at a fork in the road. We can remain locked into a costly, polluting future that is hideously inefficient and empowers only a handful of fossil-fuel-rich countries. Alternatively, we can choose a green revolution of low-cost energy for all that keeps our future secure from pollution, global warming, and dictators. Given that green energy has the power to democratise global supply as more countries achieve energy independence, the choice is not difficult. – Project Syndicate

• *Jean Baderschneider is a non-executive director of Fortescue Metals Group.*

Saudi Aramco says global energy transition goals are 'unrealistic'

AFP / Riyadh

Oil giant Saudi Aramco's chief on Tuesday blasted "unrealistic" energy transition plans, calling for a "new global energy consensus", including ramped-up investments in fossil fuels to address painful shortages.

Speaking at a conference in Switzerland, Amin Nasser, head of the world's biggest crude producer, lamented a "deep misunderstanding" of what caused the current energy crunch and said a "fear factor" was holding back "critical" long-term oil and gas projects.

"When you shame oil and gas investors, dismantle oil- and coal-fired power plants, fail to diversify energy supplies (especially gas), oppose LNG receiving terminals, and reject nuclear power, your transition plan had better be right," he said.

"Instead, as this crisis has shown, the plan was just a chain of sandcastles that waves of reality have washed away.

"And billions around the world now face the energy access and cost of living consequences that are likely to be severe and prolonged."

The primarily state-owned Saudi Aramco last month unveiled record profits of $48.4bn in the second quarter of 2022, after

Russia’s invasion of Ukraine and a post-pandemic surge in demand sent crude prices soaring.

Yet even as it benefits from the current energy crisis, Riyadh has long complained that focusing on climate change at the expense of energy security would further fuel inflation and other economic woes.

With consumers and businesses in Europe facing soaring bills as winter approaches, the causes of the crisis run deeper than the Ukraine war, Nasser said Tuesday, asserting that the warning signs were “flashing red for almost a decade”. They include declining oil and gas investments dating back to 2014 and flawed models for how quickly the world could transition to renewable sources, he said.

The “energy transition plan has been undermined by unrealistic scenarios and flawed assumptions because they have been mistakenly perceived as facts”, Nasser said.

His proposed “new global energy consensus” would involve recognising long-term needs for oil and gas, enhancing energy efficiency and embracing “new, lower-carbon energy” to complement conventional sources. Nasser nonetheless said there should be no change in global climate goals.

Riyadh has come under intense outside pressure in recent months to ramp up oil production, including during a visit by US President Joe Biden in July.

So far it has largely rebuffed those appeals, co-ordinating with the Opec+ alliance it jointly leads with Russia.

Earlier this month the bloc agreed to cut production for the first time in more than a year as it seeks to lift prices that have tumbled due to recession fears.

Long-term, Saudi Arabia plans to increase daily oil production capacity by more than 1mn barrels to exceed 13mn by 2027.

Crown Prince Mohamed bin Salman has also tried to make environmentally friendly policies a centrepiece of his reform agenda.

Last year, Saudi Arabia pledged ahead of the COP26 climate change summit to achieve net zero carbon emissions by 2060.

Saudi Aramco, for its part, has pledged to achieve

“operational net-zero” carbon emissions by 2050. That applies to emissions that are produced directly by Aramco’s industrial sites, but not the CO2 produced when clients burn Saudi oil in their cars, power plants and furnaces.

Israel’s Karish Offshore Gas Field: Facts and Figures

The country and its energy partners have found a more efficient way to exploit smaller offshore reserves, though Western officials should temper any expectations that such developments will help ease the global energy crisis.

Amid a verbal row between Israel and Lebanon, developing the Karish natural gas field represents a way forward for exploiting smaller offshore hydrocarbon discoveries in Israel's exclusive economic zone (EEZ). The field's 1.75 trillion cubic feet (tcf) of reserves are much less than the estimated volumes in Israel's two producing fields, Leviathan (35 tcf) and Tamar (7.1 tcf). But even before the recent sharp increase in gas prices, Energean, the Greek-British license holder for Karish, decided the best way to exploit the field was by linking its development to two other small fields in the area, Karish North and Tanin.

Key to this task is the *Energean Power*, a floating production storage and offloading vessel (FPSO) that took up position fifty miles off Israel's northern coast last week and is due to start production in the third quarter of this year. The vessel will use multiple anchors in water 5,500 feet deep to maintain its position. Seabed equipment linking to the gas field below will then be connected by hoses to the FPSO. Once gas is flowing to the vessel, it will be processed onboard, cleaning it of oil products and water before it descends by other hoses to the seafloor and connects with a pipe that takes it ashore. Using a pressure control device close to the beach, it will then enter Israel's gas grid to supply power stations. Meanwhile, the separated oil products and waste will be collected by a small tanker mooring alongside the FPSO every two weeks or so, and the separated water will be cleaned and pumped back into the sea.

In Israeli domestic political terms, the crucial advantage of the *Energean Power* is that it is not visible to local residents (read: voters). In contrast, the production platform for the Leviathan field is visible just a few miles offshore

from the hilltop resort of Zichron Yaakov south of Haifa, leading to protests—though the tall chimneys of the nearby Hadera power station have escaped such complaints. As for Tamar, its platform is located out of sight thirteen miles off the coast of Ashkelon far to the south, but its gas still needs additional processing at the Ashdod onshore terminal. In terms of potential security threats, the existing facilities for Leviathan and especially Tamar are closer to the Hamas-controlled Gaza Strip.

Another plus for the *Energean Power* is that it can be connected with relative ease to additional fields in the area for which Energean holds the license, without the vessel needing to change location. The Karish North field is due to come online in the second half of 2023. Energean also judges that reserves in the "Olympus" area of Block 12 slightly further south will be commercially exploitable, though its latest drilling suggested only 0.28 tcf of reserves rather than the hoped-for 0.7 tcf. By carefully phasing such exploitation, the company hopes to maintain a steady production stream and offset the decline that occurs over the usual fifteen-year lifespan of an individual field.

In total, the *Energean Power* can handle 8 billion cubic meters (bcm) of gas per year. Setting aside the sometimes-confusing mix of metric and U.S. units of measurement represented by such figures, this amount will help meet Israel's expanding demand for energy. For example, desalination alone consumes 10 percent of the country's electricity. Eventually, surplus gas will be available for export, with Egypt as the first customer—though the purchase terms for Karish and Tanin do not permit Energean to export from those two fields.

The Lebanese Angle

Energean's planning seems unaffected by Lebanon's expanding claims for its EEZ, which encroaches on the Karish field. When

tugboats moved the *Energean Power* into position last week, Hezbollah issued threats, and U.S. special envoy Amos Hochstein quickly visited Beirut to calm tempers.

From Israel's point of view, Karish is firmly in its EEZ. Moreover, dealing with threats against its gas installations is nothing new—the Leviathan platform is in range of both missiles from Lebanon and rockets from Gaza. Israel's main answer to this problem is deterrence, the implication being that any action or immediate threat against such installations would be dealt with either preemptively or through massive retaliation.

Israel and European Energy Demand

The volumes achievable from Karish and similar gas fields are significant for Israel but not in global terms. For comparison, Leviathan produces about 12 bcm per year and Tamar less than 10 bcm, while Europe's annual demand for gas was around 400 bcm even before the Ukraine crisis, with Russia supplying more than 40 percent of that amount. Clearly, increased Israeli exports would have minimal impact on this imbalance.

Nevertheless, planners are considering ways to increase Israeli production. Leviathan volumes can grow, albeit with a commensurate increase in the size of its controversial offshore platform. Israel may also be able to export gas more widely than its current arrangements: by pipeline to Jordan (where 80 percent of electricity is produced by Israeli gas) and Egypt (whose apparently insatiable domestic energy market is not sufficiently fed by the country's 75 tcf of gas reserves and estimated annual production of 65 bcm).

Currently, any exports further afield would need to be funneled via one of Egypt's liquefied natural gas plants on the Nile Delta coast. Israel may eventually be able to use a floating LNG platform off its own coast to load specially

built tankers with Leviathan gas, though rough seas in winter could make this approach infeasible. Another consideration is a potential pipeline to Cyprus, where an LNG vessel moored in port could supply the island's modest domestic market while still leaving most of the Israeli product available for export further abroad. A proposal for a seabed line to take Israeli gas to Greece is effectively dead after the U.S. government signaled that the plan was logistically and commercially impractical.

Meanwhile, Israel, Egypt, and the European Union are expected to sign a memorandum of understanding on increasing gas exports, though it is difficult to see what immediate practical effect this will have. Israel's Ministry of Energy will also open another round of bidding for licenses to explore in its EEZ. The degree of interest shown in this round will indicate how international energy companies currently regard the attractiveness of Israeli prospects.

Simon Henderson is the Baker Fellow and director of the Bernstein Program on Gulf and Energy Policy at The Washington Institute.

Qatari Minister: No 'Quick Fix' to EU Gas Crisis

There is not much Qatar can do to alleviate Europe’s gas crisis in the short term due to contractual commitments, Qatari Energy Minister Saad al-Kaabi tells Energy Intelligence – but further out, in five to seven years, new Qatari LNG exports to Europe should be significant. In an exclusive interview, al-Kaabi said production from the Golden Pass LNG project in the US, where QatarEnergy partners with Exxon Mobil, is due on stream in 2024 and is “already earmarked for Europe.” Up to half of new output from Qatar’s 48 million ton per year North Field mega-expansion could also go West of Suez when it starts up from 2026. Al-Kaabi also serves as head of state-owned QatarEnergy, which is in active discussions with customers for the new supplies. Significantly, targeted contract durations are shorter than the 20-year deals seen in Qatar’s original LNG expansion, reflecting European reluctance to lock into gas supplies long-term. “I think 10-15-year deals are probably what are most acceptable to both sides. But for us, the long-term deal, it’s not just about duration, it’s about price,” he said. Even with such supplies, al-Kaabi expressed skepticism about Europe’s ability to completely wean itself off Russian gas. Europe will find it “very difficult”

to completely forgo Russian pipeline gas for more than two winters. Despite storage, fuel switching and active efforts to expand LNG imports, “a quick fix” to the EU’s dependency on Russian gas does not exist.

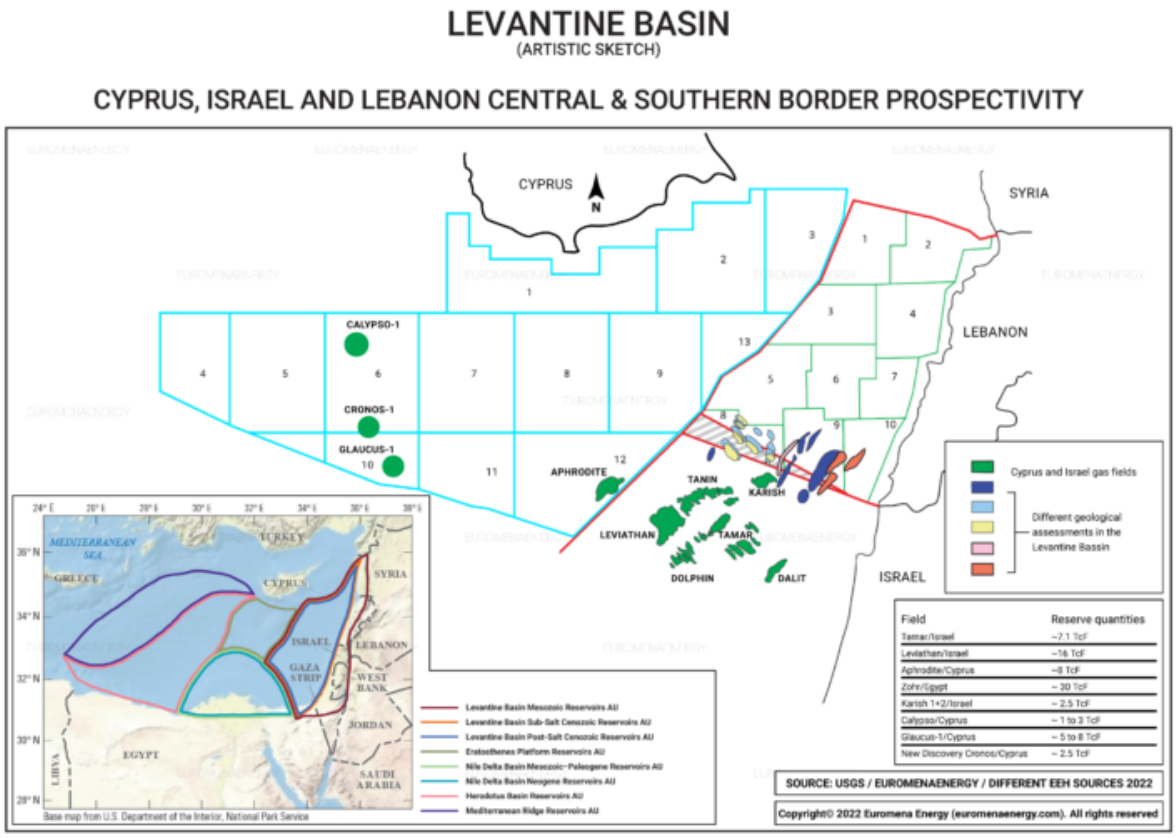
Qatar’s North Field expansion is attracting enormous interest from foreign investors, with TotalEnergies tipped to become the first of the Phase-2 partners to be selected later this month. But investors in existing Qatari projects face a rocky ride when contracts on current joint ventures expire, as Exxon and Total discovered when their prized Qatargas-1 contract was not renewed last year. Al-Kaabi revealed that QatarEnergy came close to going it alone on the North Field expansion, too. Qatar, which is generating around 1 million barrels of oil equivalent per day of net output for Exxon, Total and Shell alone, is critical for the majors. However, “if there is no value, there is no partnership, very plain and simple,” al-Kaabi said. Even if joint ventures are maintained after expiry, terms will be tougher. For Exxon, which has stakes in nine of Qatar’s 14 trains, these contract renewals are especially strategic. Qatar knows the value of its LNG will likely drive a hard bargain. “An investment in Qatar is really an important downside-risk revenue maker” for partners, al-Kaabi said.

LNG is only part of a multifront, international investment drive now under way at QatarEnergy. Downstream, petrochemicals is a priority, with al-Kaabi touting QatarEnergy’s planned US project with Chevron Phillips Chemical as “the largest polyethylene plant.” It recently awarded construction contracts for a 1.2 million ton/yr blue ammonia project, also tipped to be the biggest of its kind. But its global upstream drive is most significant. There were doubters when the strategy launched, but QatarEnergy has been vindicated over the past year by major exploration success in Namibia. QatarEnergy, by virtue of sizable stakes in both Total and Shell discoveries, is poised to be the largest reserves holder

in a significant new oil province – Total's Venus discovery is described as the largest deepwater find ever. There have also been offshore gas discoveries in Cyprus and South Africa. And in Brazil, output at QatarEnergy's offshore Sepia field is set to more than double to 400,000 barrels per day in the next couple of years.

Despite confidence in long-term gas demand, QatarEnergy is taking steps to ensure its place in the energy transition. It is investing heavily in greenhouse gas emission mitigation technology at projects. Over $250 million is being spent on such measures at the LNG expansion alone – principally carbon capture and storage (CCS) and solar power. Some 11 million tons/yr of CCS is planned by 2035. "From an overall value chain, Qatari LNG will be the least carbon footprint LNG you can get," al-Kaabi said. "We think that our buyers, and our investors that have joined us in [North Field East expansion], see this as the Rolls-Royce of projects." Transition pressures are feeding into the urgency for developing projects. "I am a believer that you need to monetize what you can because the market conditions change, and there is a competitive advantage to go ahead of others," al-Kaabi stated.

خرائط تؤكد توفّر الغاز في مياه لبنان الإقليمية



مع وصول مفاوضات ترسيم الحدود البحرية إلى خواتيمها على الرغم من ضبابية الجواب الإسرائيلي الذي سيحمله آموس هوكشتاين إلى الدولة اللبنانية، يؤكد الخبير الدولي في شؤون الطاقة رودي بارودي لموقع "القوات اللبنانية" الإلكتروني، أن "منطقة حوض شرقي المتوسط التي هي بقعة مثيرة ومعقدة للغاية لأسباب جيو ـ "Levantine basin" سياسية، تحتوي على آفاق إمكانية وجود كميات كبيرة من البترول والغاز لم يتم اكتشافها واستغلالها بعد، خصوصاً أن المنطقة تحتوي على الكثير من الاحتياطي النفطي الممكن الاستفادة منه".

ويُضيف أن ما يؤكد هذا الأمر، هو نتائج مسح أكثر من 60 ألف كم من الخطوط الزلزالية الثنائية والثلاثية الأبعاد في منطقة حوض شرقي المتوسط فقط "Levantine basin" إسرائيل، قبرص، في لبنان، وتحديداً

حتى حدود مصر البحرية، وهي البلدان الموجودة حول حوض بلاد الشام، وذلك بين الأعوام 2002/2008 وأيضاً في العام 2016 (More than approximately 60,000km of 2D and 3D seismic lines)، والتي أظهرت أن هناك أكثر من 150 احتمالاً لوجود مكامن بترولية داخل مناطق المسح.

وفي هذا الاطار، أثبتت الدراسات التي أجرتها شركات PGS وSpectrum نجاحها في مناطق معيّنة ولا يزال يتعيّن إثباتها في NEOS وTGS وأحواض أخرى. ففي العامين 2008/2009، تم اكتشاف كميات من الغاز في المياه الإسرائيلية في حقلي تمار وليفياثان وأيضاً في حقل أفروديت القبرصي كما في حقل زهر في مصر العام 2015؛ علماً أن دراسات مركز المسح الجيولوجي الأميركي والتي أجريت في العام 2016 & 2010 خلصت إلى أن الإمكانات غير المكتشفة تبلغ ضعف إجمالي ما تم (USGS) اكتشافه من غاز (كما هو ظاهر في الخريطة المرفقة).

ويتابع، مع كل الاكتشافات الحديثة بما في ذلك الاكتشاف الذي أعلن عنه في حقل "كرونوس" في قبرص الأسبوع الماضي، يمكن ان نتحدث عن تقدير للكميات بأكثر من 52 تريليون قدم مكعب. كل هذه الاكتشافات التي تحيط بلبنان تؤكد أن هناك احتمالية عالية لاستخراج كميات تجارية من الغاز، وهذا ما تشير إليه وبشكل واضح العديد من التقييمات الجيولوجية التي أجرتها أهم الشركات العالمية في هذه الصناعة.

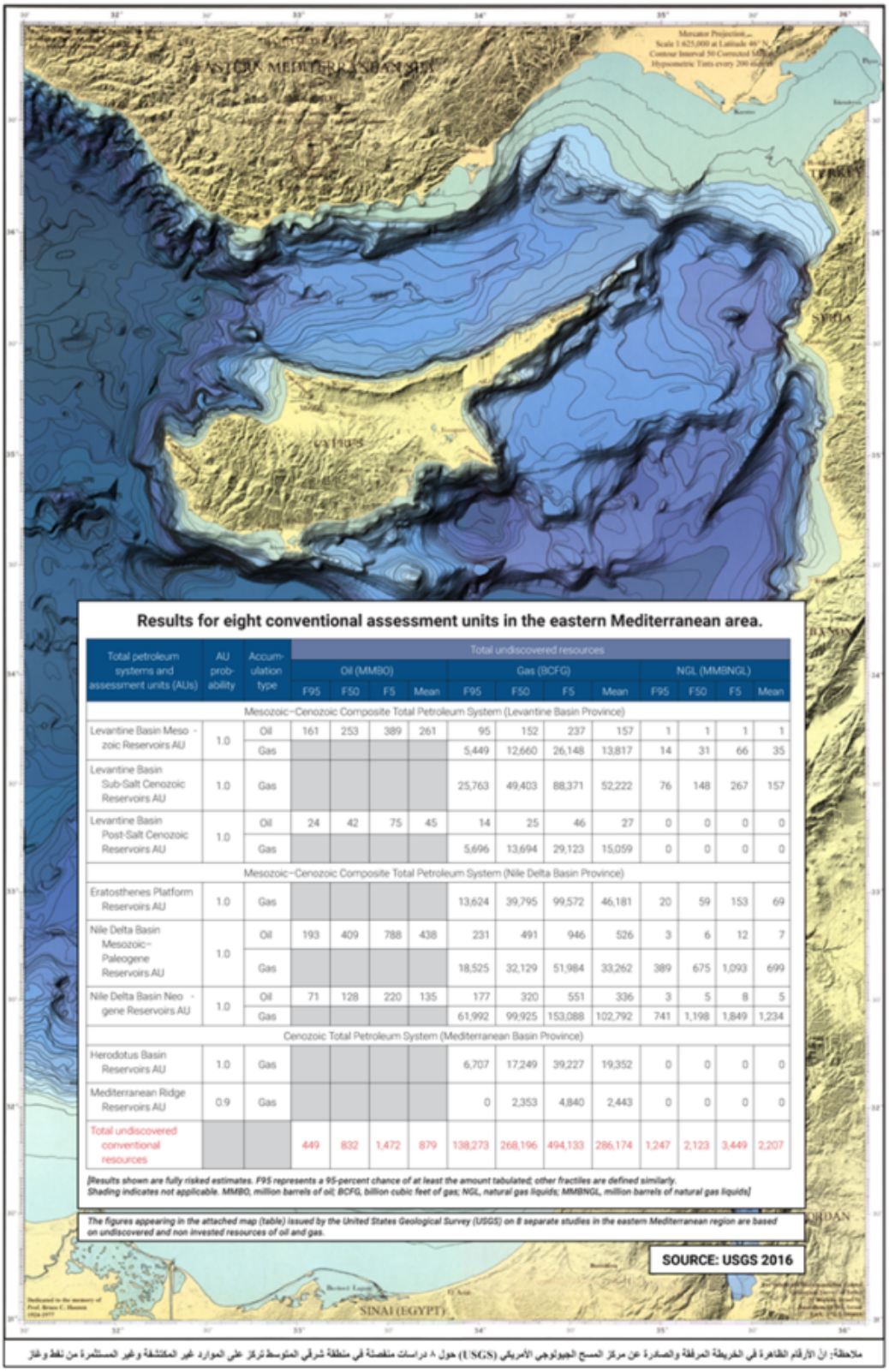
ويؤكد بارودي أنه "بناءً على العديد من النماذج المستقاة من الدراسات الجيولوجية الهيدروكربونية، كما على تحليل طبيعة باطن الأرض الصخرية، يمكن الجزم أنه يوجد ما يكفي من الموارد الطبيعية وبكميات كبيرة في شرقي المتوسط لا تزال غير مكتشفة وغير مستثمرة، لا سيما في المياه اللبنانية.

ويعتبر أن "الأهم في الموضوع أنه بعد 20 عاماً تقريباً توحّدت القيادة اللبنانية حول كيفية التعامل مع ملف يمكنه إنقاذ لبنان من المعاناة الاقتصادية والمالية التي يمرّ بها وأعني بذلك موقفهم الموحّد حول ترسيم الحدود البحرية مع إسرائيل". ويشدد في السياق، على أن "لبنان يحتاج في أسرع وقت ممكن إلى إجراء العديد من الإصلاحات المطلوبة لإعادة إنتاج نظامه المالي والقضائي والاقتصادي، وفي حال ترافق الإصلاحات مع إبعاد ملف النفط عن المناكفات السياسية، سيعرف لبنان نهضة اقتصادية ومالية أكيدة ما يساعد على تطوير البنى التحتية التي هو في أمسّ الحاجة إليها ويُعيد الأمل

إلى الشعب اللبناني وتزدهر قطاعات عدة ومنها القطاع المصرفي والتعليمي والاستشفائي”.

LEVANTINE BASIN

UNDISCOVERED RESOURCES SUMMARY



Results for eight conventional assessment units in the eastern Mediterranean area.

Total petroleum systems and assessment units (AUs)	AU probability	Accumulation type	Total undiscovered resources: Oil (MMBO) F95	Oil (MMBO) F50	Oil (MMBO) F5	Oil (MMBO) Mean	Gas (BCFG) F95	Gas (BCFG) F50	Gas (BCFG) F5	Gas (BCFG) Mean	NGL (MMBNGL) F95	NGL (MMBNGL) F50	NGL (MMBNGL) F5	NGL (MMBNGL) Mean
Mesozoic–Cenozoic Composite Total Petroleum System (Levantine Basin Province)														
Levantine Basin Mesozoic Reservoirs AU	1.0	Oil	161	253	389	261	95	152	237	157	1	1	1	1
		Gas					5,449	12,660	26,148	13,817	14	31	66	35
Levantine Basin Sub-Salt Cenozoic Reservoirs AU	1.0	Gas					25,763	49,403	88,371	52,222	76	148	267	157
Levantine Basin Post-Salt Cenozoic Reservoirs AU	1.0	Oil	24	42	75	45	14	25	46	27	0	0	0	0
		Gas					5,696	13,694	29,123	15,059	0	0	0	0
Mesozoic–Cenozoic Composite Total Petroleum System (Nile Delta Basin Province)														
Eratosthenes Platform Reservoirs AU	1.0	Gas					13,624	39,795	99,572	46,181	20	59	153	69
Nile Delta Basin Mesozoic–Paleogene Reservoirs AU	1.0	Oil	193	409	788	438	231	491	946	526	3	6	12	7
		Gas					18,525	32,129	51,984	33,262	389	675	1,093	699
Nile Delta Basin Neogene Reservoirs AU	1.0	Oil	71	128	220	135	177	320	551	336	3	5	8	5
		Gas					61,992	99,925	153,088	102,792	741	1,198	1,849	1,234
Cenozoic Total Petroleum System (Mediterranean Basin Province)														
Herodotus Basin Reservoirs AU	1.0	Gas					6,707	17,249	39,227	19,352	0	0	0	0
Mediterranean Ridge Reservoirs AU	0.9	Gas					0	2,353	4,840	2,443	0	0	0	0
Total undiscovered conventional resources			449	832	1,472	879	138,273	268,196	494,133	286,174	1,247	2,123	3,449	2,207

[Results shown are fully risked estimates. F95 represents a 95-percent chance of at least the amount tabulated; other fractiles are defined similarly. Shading indicates not applicable. MMBO, million barrels of oil; BCFG, billion cubic feet of gas; NGL, natural gas liquids; MMBNGL, million barrels of natural gas liquids]

The figures appearing in the attached map (table) issued by the United States Geological Survey (USGS) on 8 separate studies in the eastern Mediterranean region are based on undiscovered and non invested resources of oil and gas.

SOURCE: USGS 2016

ملاحظة: إن الأرقام الظاهرة في الخريطة المرفقة والصادرة عن مركز المسح الجيولوجي الأميركي (USGS) حول ٨ دراسات منفصلة في منطقة شرقي المتوسط تركز على الموارد غير المكتشفة وغير المستثمرة من نفط وغاز

ويضيف، إذ إن كل هذه التطورات، ولا سيما التوصل مع إسرائيل إلى ترسيم واضح للحدود البحرية يحافظ على المصالح اللبنانية، يمكنه أن يساهم في معاودة شركات النفط التنقيب في البحر اللبناني، كما يساعد على تشجيع الشركات العالمية على التقدم إلى عمليات الاستكشاف النفطي سواء في البحر أو البرّ، ما يساعد في خلق جوّ اقتصادي مُريح يحتاجه لبنان.

ويقول في هذا الإطار، لا بد من شكر الجهود الحثيثة التي تقوم بها الإدارة الأميركية من أجل إيجاد حل عادل للنزاع الحدودي البحري مع اسرائيل.

ويتابع بارودي، على لبنان وفور الانتهاء من المفاوضات غير المباشرة مع إسرائيل، أن يعدّل إحداثيات المرسوم 6433 ويودعها كي، DOALOS لدى الأمم المتحدة ـ قسم شؤون المحيطات وقانون البحار يحافظ على حقوقه المكتسبة كما على إسرائيل أن تفغل الشيء نفسه.

أما بخصوص انسحاب الشركة الروسية "نوفاتيك" من تحالف شركات "إيني" و"توتال"، فيؤكد أنه "أمر طبيعي مع وجود العقوبات الأميركية على الشركة الروسية، إذ لا تستطيع الأخيرة أن تستقبل أو أن تحوّل أموالاً طالما أن نظام العقوبات يطاولها".

ويؤكد بارودي، "نعم يستطيع لبنان الخروج من النفق المظلم، شرط أن تتكاتف الإرادات الحسنة للعمل على إنقاذه".

Russia's Oil Resilience Faces Bigger Test as EU Ban Looms

Russia defied expectations of a collapse in oil production following its invasion of Ukraine. But Moscow will have to redouble its efforts to find new buyers if it’s to keep output from shrinking in the coming months.

After plunging in the immediate aftermath of its offensive in February, Russian production has rebounded over the past three months as domestic refining boomed and Asian customers stepped in to take shipments shunned by Western buyers. Yet a looming European Union ban on most Russian crude, as well as a gathering economic slowdown, will strike a blow to the country’s producers.

“Russian oil companies have been enjoying the beauties of the summer season — soaring domestic demand and the absence of EU sanctions have allowed them to ramp up production,” said Viktor Katona, head of sour-crude analysis at data firm Kpler. “As we look into the immediate future, that is bound to change.”

Russian output of crude and condensate — a lighter type of oil

– reached a wartime high of around 10.8 million barrels a day in July. Volumes may fall to about 10.5 million a day when the EU ban kicks in in December, Katona said. Analysts at Rystad Energy AS see some 10.1 million a day by year-end, while the International Energy Agency expects a slump of about 2 million a day by the start of 2023.

Russia's Energy Ministry didn't respond to requests for comment on its outlook for future production as the EU restrictions approach.

The embargo, which will apply to imports of seaborne crude and most piped supplies from Dec. 5, is set to remove some 1.3 million barrels a day from the European market, IEA estimates show. A ban on oil-product imports follows on Feb. 5, likely cutting a further 1 million barrels a day, the IEA said last week.

Many traditional buyers are already refusing to take Russian barrels, prompting Moscow to sell to customers in Asia, often at a substantial discount. Russia has this year raised its seaborne crude flows to the region by almost 800,000 barrels a day, according to vessel-tracking data compiled by Bloomberg.

But the country can't count on Asia to mop up all the spare barrels once the EU ban comes into effect as the region is already saturated with Russian crude, according to analysts at Kpler, Rystad and Moscow-based BCS Global Markets.

"In the short term, Asia is already taking almost all that it can," said Ron Smith, an analyst at BCS.

A loss of Russian production equal to all its current seaborne exports to Europe is a worst-case scenario and unlikely to materialize, said Sergei Vakulenko, an independent expert with more than 25 years' experience in the Russian oil industry. He expects that traders globally will be eager to find buyers for the extra Russian volumes, given a dearth of spare production capacity elsewhere.

Vakulenko sees Russian output remaining roughly flat until year-end, a view shared by Kirill Bakhtin, a senior oil and gas analyst at Sinara Bank.

“We expect more or less stable production of Russian liquid hydrocarbons in the amount of 10.8 million barrels per day until February 2023,” thanks to successful efforts to redirect oil from Europe to Asia, Bakhtin said.

In the first couple of weeks this month, Russia’s daily crude oil and condensate output averaged about 10.47 million barrels a day, according to a Kommersant newspaper report Monday. The 3% drop from July is likely driven by seasonality and not by long-term factors such as sanctions, with much of the lower supply coming from a group of smaller producers, including gas giant Gazprom PJSC, according to the Energy Ministry’s CDU-TEK data seen by Bloomberg.

Refinery Demand

Russia’s seaborne exports have recently slid from their spring peaks, but oil producers have been bolstered by growth in domestic refining amid higher seasonal fuel demand at home and abroad.

Yet toward the end of the year, any attempt to process more crude domestically and increase output of lighter products — which may find a market in Europe before the February ban is enforced — would also mean production of heavier fuels that are harder to sell in the colder months.

In spring, Russian producers were able to find buyers for their fuel oil in the Middle East after the US imposed its own ban. But demand in that region may ebb as the weather cools, limiting Russia’s ability to export the heavy product, said Mikhail Turukalov, chief executive officer of Moscow-based Commodities Markets Analytics LLC.

In the colder months, Russia also lacks the logistical

capability needed for a major hike in fuel-oil exports, Turukalov said.

“This winter, oil-processing in Russia will hardly be able to grow enough to compensate for the expected oil-export declines,” he said.

– With assistance by James Herron, and Julian Lee

بارودي: مصلحة لبنان في استكمال المفاوضات بموقف موحّد

أكد الخبير الدولي في مجال الطاقة رودي بارودي أن “لا يزال هناك أخذ وردّ في مسألة ترسيم الحدود البحرية مع إسرائيل، ومصلحة لبنان تكمن في الاتفاق الداخلي واستكمال المفاوضات بموقف موحّد”. واعتبر في حديث لـ”صوت كل لبنان””93.3″ أن “الموقف اللبناني مرتاح ولدينا مصلحة بأن تنتهي الأمور في أقرب وقت”، لافتاً إلى أن الأجواء إيجابية ووصلنا إلى نهاية الشوط لنبدأ مرحلة الاستكشاف”.

Cheaper, changing, crucial: the rise of solar power

AFP/Paris

Generating power from sunlight bouncing off the ground, working at night, even helping to grow strawberries: solar panel technology is evolving fast as costs plummet for a key segment of the world's energy transition.

The International Energy Agency says solar will have to scale up significantly this decade to meet the Paris climate target of limiting temperature rises to 1.5 degrees Celsius above pre-industrial levels.

The good news is that costs have fallen dramatically.

In a report on solutions earlier this year, the Intergovernmental Panel on Climate Change said solar unit costs had dropped 85 percent between 2010 and 2019, while wind fell 55%.

"There's some claim that it's the cheapest way humans have

ever been able to make electricity at scale," said Gregory Nemet, a professor at the University of Wisconsin-Madison and a lead author on that report.
Experts hope the high fossil fuel prices and fears over energy security caused by Russia's invasion of Ukraine will accelerate the uptake of renewables.
Momentum gathered pace last Sunday with the ambitious US climate bill, which earmarks $370bn in efforts to cut greenhouse gas emissions by 40% by 2030.
An analysis by experts at Princeton University estimates the bill could see five times the rate of solar additions in 2025 as there were in 2020.
Nemet said solar alone could plausibly make up half of the world's electricity system by mid-century, although he cautioned against looking for "silver bullets".
"I think there really is big potential," he told AFP.

Rapid changes

The "photovoltaic effect" – the process by which solar cells convert sunlight to electrical energy – was first discovered in 1839 by the French physicist Edmond Becquerel.
After decades of innovations, silicon-based solar cells started to be developed in the United States in the 1950s, with the world's first solar-powered satellite launched in 1958.
The IPCC said of all energy technologies, small-scale ones like solar and batteries have so far proved quicker to improve and be adopted than bulkier options like nuclear.
Today, almost all of the panels glimmering on rooftops and spreading across vast fields are made in China using silicon semiconductors.
But the technology is changing quickly.
In a recent report, the IEA said these new solar cells have proven to be one-fifth more efficient in converting light to energy than standard modules installed just four or five years ago.
There are also a host of new materials and hybrid cells that

experts predict could supercharge efficiency.
These include cheap, efficient and lightweight “thin film” technologies, like those using perovskites that can be printed from inks.
Experts say they raise the prospect of dramatically expanding where solar energy can be harvested – if they can be made durable enough to withstand a couple of decades of use.
Recent research has raised hopes that it could be possible.
In one study, published in the journal Science in April, scientists added metal-containing materials to perovskite cells, making them more stable with efficiency near traditional silicon models.
Other research mixes materials for different purposes.
One study in Nature used “tandem” models, with perovskite semiconductors to absorb near-infrared light on the solar spectrum, while an organic carbon-based material absorbed ultraviolet and visible parts of the light.
And what happens after sunset?
Researchers from Stanford said this year they had produced a solar cell that could harvest energy overnight, using heat leaking from Earth back into space.
“I think that there’s a lot of creativity in this industry,” said Ron Schoff, who heads the Electric Power Research Institute’s Renewable Energy and Fleet Enabling Technologies research.

Location, location

Generating more energy from each panel will become increasingly crucial as solar power is rolled out at greater scale, raising concerns about land use and harm to ecosystems.
Schoff said one efficiency-boosting design that is becoming more popular for large-scale projects is “bifacial” solar.
These double-sided units absorb energy not just directly from the sun’s rays, but also from light reflected off the ground beneath.
Other solutions involve using the same space for multiple purposes – like semi-transparent solar panels used as a

protective roof for strawberry plants or other crops.
India pioneered the use of solar panels over canals a decade ago, reducing evaporation as they generate power.
Scientists in California have said that if the drought-prone US state shaded its canals, it could save around 63bn gallons.
Construction on a pilot project is due to begin this year.

All shapes, sizes

Experts say solar will be among a mix of energy options, with different technologies more suitable for different places.
Schoff said ultimately those energy grids with more than 25% solar and wind need ways to store energy – with batteries or large-scale facilities using things like pumped water or compressed air.
Consumers can also play their part, said Nemet, by shifting more of their energy use to daytime periods, or even hosting their own solar networks in an Airbnb-style approach.
He said the modular nature of solar means it can be rolled out in developing countries with sparse access to traditional grids.
“You could have solar on something as small as a watch and something as big as the biggest power plants in the world,” he said.
“I think that’s what’s making people excited about it.” – Reuters