

# France faces uncertain winter as nuke power shortage looms



By Forrest Crellin, Silvia Aloisi And Nina Chestney/Paris

France, once Europe's top power exporter, may not produce enough nuclear energy this winter to help European neighbours seeking alternatives to Russian gas, and may even have to ration electricity to meet its own needs.

France has for years helped to underpin Europe's electricity supply, providing about 15% of the region's total power generation.

But this year, for the first time since French records began in 2012, France has become a net power importer as its own production of nuclear energy hit a 30-year low, based on data from consultancy EnAppSys.

The supply squeeze, caused by a wave of repairs at the country's nuclear power stations, couldn't have come at a worse time. Europe is in the grip of an energy crisis as Russian gas supplies plummet in the wake of the Ukraine conflict and France, which derives 70% of its electricity from nuclear energy, has lost its edge.

French power prices have hit a string of all-time highs – topping 1,000 euros (\$1,004.10) per megawatt hour earlier this month – on expectations the country will not have enough electricity to meet domestic demand. That surge, from prices of around €70 a year ago, has added to a cost-of-living crisis.

“Sky-high electricity prices are an economic threat, with France’s nuclear issues seemingly turning into a greater challenge than Russian gas flows,” said Norbert Rücker, head of economics and next generation research at Julius Baer.

A record number of France’s 56 nuclear reactors have gone offline for overdue maintenance and checks related to corrosion issues that first surfaced last December. Some reactors have had to cut production during the summer to prevent rivers used to cool reactors from overheating.

As of August 29, 57% of nuclear generation capacity was offline, based on data provided by state-controlled nuclear power group Electricite de France, or EDF.

EDF’s current outage schedule sees production levels returning to around 50 gigawatts (GW) daily by December from around 27 GW now as reactors gradually come back for the winter season.

But the market, analysts and union officials think that forecast is too optimistic.

In a normal year, France produces around 400 terawatt-hours (or 400,000 GWh) of nuclear electricity and exports about 10% of it in warmer months. But during winter consumption peaks, France imports power from its neighbours, particularly Germany.

This year, EDF forecasts French nuclear production at 280-300 terawatt-hours, the lowest since 1993. France has imported power from the likes of Germany and Belgium during the summer, when it would usually be exporting it.

“That makes for scary winter prospects,” said Paris-based nuclear energy consultant Mycle Schneider.

Six analysts polled by Reuters estimated that France’s power capacity during the winter will fall below EDF’s forecasts, by 10 to 15GW a day until at least late January. This means

France will need to import more power when the rest of Europe will also be facing an energy crunch, or risk blackouts.

Last week, EDF – which this year has cut its nuclear output forecasts several times and issued four profit warnings – delayed the restart of several reactors to at least mid-November, fuelling more uncertainty.

Current power market prices reveal a lack of confidence in EDF's ability to put all its reactors back online in time for the cold season, a parliamentary source close to government said, although this source also said the availability of the fleet should improve from current low levels.

“We should be able to recover a large part of the reactors which are currently offline,” the source said. “We can also ask the French to make efforts, especially to reduce consumption peaks.”

The measures the French government could take include forced interruption of power supply to industrial and commercial consumers, reduced heating in public buildings, turning off street lights and controlled power cuts, he said.

French Prime Minister Elisabeth Borne has urged companies to draft energy savings plans by next month, warning they would be hit first if France has to ration gas and electricity.

The CGT union, France's biggest, is bracing for some rolling blackouts this winter.

“The situation is really worrying... to say that there won't be power cuts is a very optimistic gamble, unless one already knows for sure that the winter will be warm,” said Virginie Neumayer, who follows nuclear issues at CGT.

Even if EDF can boost nuclear production, analysts say France will still not have spare power to sell to neighbours starved of Russian gas, with Italy, Britain and Switzerland seen as the countries worst hit.

“We have seen some effects over the last months already, as Spain, the UK and Italy all have had to increase their domestic production, since export volumes from France have been much lower than normal,” said Fabian Ronningen of consultancy Rystad Energy.

“I think Italy would be the most affected country (if France stopped exporting electricity), as they are Europe’s overall largest power importer.”

EDF CEO Jean-Bernard Levy said on Monday that among the reactors that are closed, 12 were for corrosion problems and the rest were either shut for routine maintenance delayed by the pandemic or taken off-line to prepare them for winter.

Levy said the company was “totally mobilised” to avoid more outages.

“These works are heavy, we will need hundreds and hundreds of very skilled people, we are making them come from abroad, the US in particular,” he told a business conference. He said corrosion issues required workers to operate in a part of the reactor where radiation is high, meaning exposure had to be limited.

For the coming winter, meteorologists often look at how the La Niña weather pattern develops over the summer as an indicator of a colder than average winter.

Currently, the odds of that happening are at 60% during December-February 2022-23, US government weather forecaster the National Weather Service’s Climate Prediction Center said.

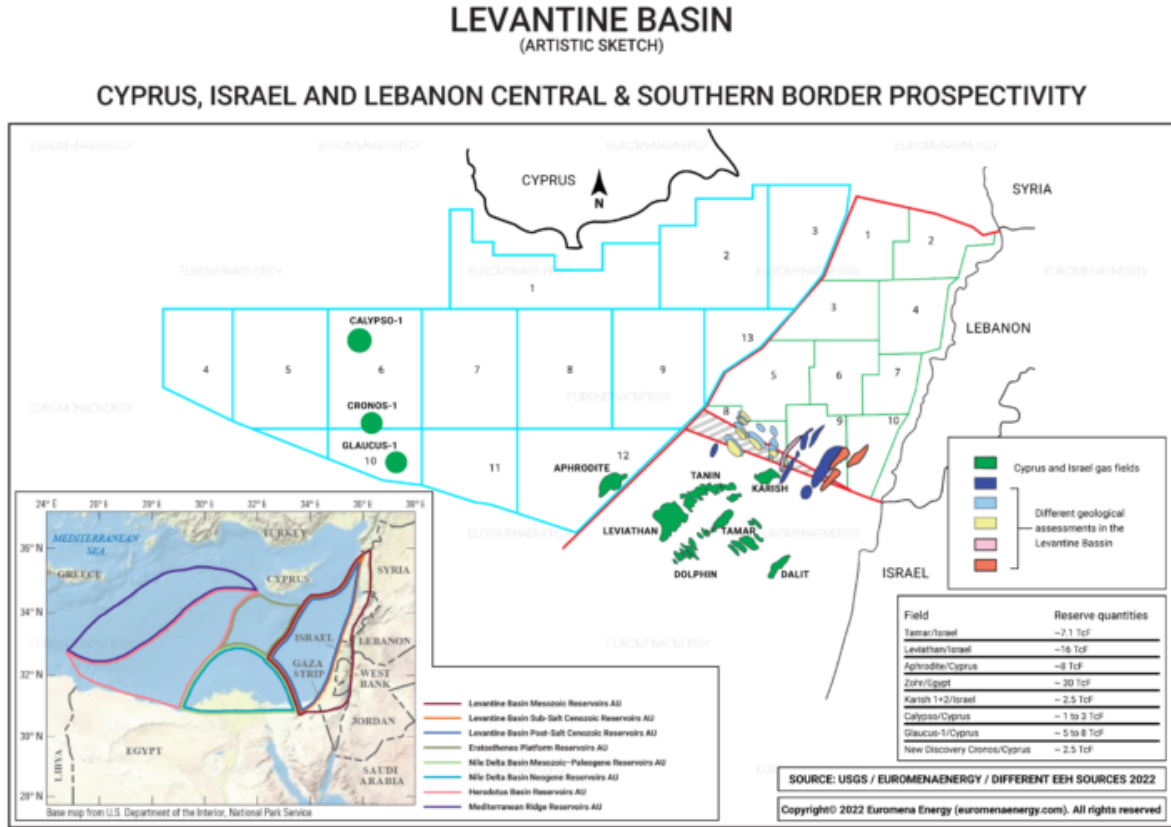
Longer term, questions remain over whether EDF, which is in the process of being fully nationalised, can maintain its ageing fleet of existing power stations – mostly build in the 1980s – or build new ones quickly enough to replace them.

France’s nuclear safety watchdog ASN said in May that fixing the corrosion issues affecting EDF’s reactors could take years.

The next generation nuclear reactors EDF has built – including one in Flamanville in France, and another at Hinkley Point in England – have run billions over budget and several years beyond schedule. – Reuters

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# خرائط تؤكد توفر 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 – "Levantine basin" سياسية، تحتوي على آفاق إمكانية وجود كميات كبيرة من البترول والغاز لم يتم اكتشافها واستغلالها بعد، خصوصا 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 وتحديدًا في لبنان، قبرص، إسرائيل "Levantine basin" المتوسط فقط حتى حدود مصر البحرية، وهي البلدان الموجودة حول حوض بلاد الشام، (More than approximately 60,000km of 2D and 3D seismic lines)، وذلك بين الأعوام 2002/2008 وأيضاً في العام 2016 وأظهرت أن هناك أكثر من 150 احتمالاً لوجود مكامن بترولية داخل مناطق المسح.

PGS و Spectrum وفي هذا الاطار، أثبتت الدراسات التي أجرتها شركات نجاحها في مناطق معيَّنة ولا يزال يتعيَّن إثباتها في TGS و NEOS و أحواض أخرى. ففي العامين 2008/2009، تم اكتشاف كميات من الغاز في المياه الإسرائيلية في حقلي تمار وليفيثان وأيضاً في حقل أفروديت القبرصي كما في حقل زهر في مصر العام 2015؛ علماً أن دراسات مركز المسح الجيولوجي الأميركي والتي أجريت في العام 2010 & 2016 خلصت إلى أن الإمكانيات 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.

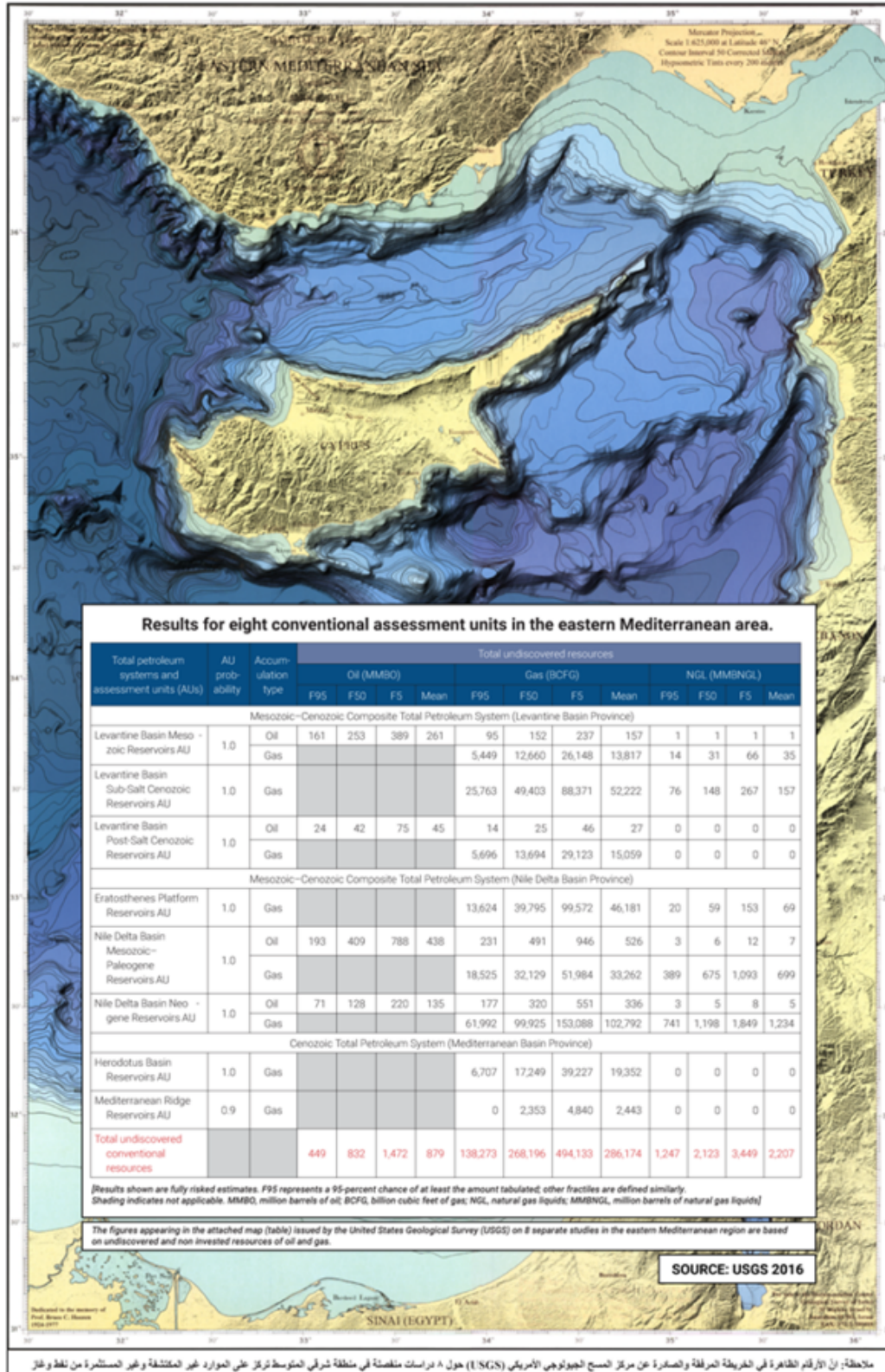
ويؤكد بارودي أنه "بناءً على العديد من النماذج المستقاة من الدراسات الجيولوجية الهيدروكربونية، كما على تحليل طبيعة باطن الأرض الصخرية، يمكن الجزم أنه يوجد ما يكفي من الموارد الطبيعية وبكميات كبيرة في شرقي المتوسط لا تزال غير مكتشفة وغير مستثمرة، لا سيما في المياه اللبنانية.

ويعتبر أن "الأهم في الموضوع أنه بعد 20 عاماً تقريباً توحدت القيادة اللبنانية حول كيفية التعامل مع ملف يمكنه إنقاذ لبنان من المعاناة الاقتصادية والمالية التي يمرُّ بها وأعني بذلك موقفهم الموحد 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



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 البر، ما يساعد في خلق جو اقتصادي مريح 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 إسرائيل.

ويتابع بارودي، على لبنان وفور الانتهاء من المفاوضات غير المباشرة مع إسرائيل، أن يعدّل إحدائيات المرسوم 6433 ويودعها كي DOALOS لدى الأمم المتحدة – قسم شؤون المحيطات وقانون البحار. يحافظ على حقوقه المكتسبة كما على إسرائيل أن تفعل 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 الإيرادات الحسنة للعمل على إنقاذه

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## 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 موحد



أكد الخبير الدولي في مجال الطاقة رودي بارودي أن “لا يزال هناك أخذ ورد” في مسألة ترسيم الحدود البحرية مع إسرائيل، ومصلحة لبنان تكمن في الاتفاق الداخلي واستكمال المفاوضات بموقف موحد”. 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”.

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# 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

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# **Coal giants are making mega profits as climate crisis**

# grips the world



The globe is in the grips of a climate crisis as temperatures soar and rivers run dry, and yet it's never been a better time to make money by digging up coal.

The energy-market shockwaves from Russia's invasion of Ukraine mean the world is only getting more dependent on the most-polluting fuel. And as demand expands and prices surge to all-time highs, that means blockbuster profits for the biggest coal producers.

Commodities giant Glencore Plc reported core earnings from its coal unit surged almost 900% to \$8.9 billion in the first half – more than Starbucks Corp. or Nike Inc. made in an entire year. No. 1 producer Coal India Ltd.'s profit nearly tripled, also to a record, while the Chinese companies that produce more than half the world's coal saw first-half earnings more than double to a combined \$80 billion.

The massive profits are yielding big pay days for investors. But they will make it even harder for the world to kick the habit of burning coal for fuel, as producers work to squeeze

out extra tons and boost investment in new mines. If more coal is mined and burned, that would make the likelihood of keeping global warming to less than 1.5 degrees Celsius even more remote.

It's a remarkable turnaround for an industry that spent years mired in an existential crisis as the world tries to shift to cleaner fuels to slow global warming. Banks have been pledging to end financing, companies divested mines and power plants, and last November world leaders came close to a deal to eventually end its use.

Ironically, those efforts have helped fuel coal producers' success, as a lack of investment has constrained supply. And demand is higher than ever as Europe tries to wean itself off Russian imports by importing more seaborne coal and liquefied natural gas, leaving less fuel for other nations to fight over. Prices at Australia's Newcastle port, the Asian benchmark, surged to a record in July.

The impact on profits for the coal miners has been stunning and investors are now cashing in. Glencore's bumper earnings allowed the company to increase returns to shareholders by another \$4.5 billion this year, with the promise of more to come.

Gautam Adani, Asia's richest person, capitalized on a rush in India to secure import cargoes amid a squeeze on local supply. Revenue generated by his Adani Enterprises Ltd. jumped more than 200% in the three months to June 30, propelled by higher coal prices.

US producers are also reaping bumper profits, and the biggest miners Arch Resources Inc. and Peabody Energy Corp. say demand is so strong at European power plants that some customers are buying the high-quality fuel typically used to make steel to generate electricity instead.

The wild profits threaten to become a political lightning rod

as a handful of coal companies cash in while consumers pay the price. Electricity costs in Europe are at record highs and people in developing nations are suffering daily blackouts because their utilities can't afford to import fuel. Earlier this month, United Nations Secretary-General Antonio Guterres lashed out at energy companies, saying their profits were immoral and calling for windfall taxes.

Coal's advocates say the fuel remains the best way to provide cheap and reliable baseload power, especially in developing countries. Despite the huge renewable rollout, burning coal remains the world's favorite way to make power, accounting for 35% of all electricity.

While western producers cash in on the record prices – with companies such as Glencore committed to running mines to closure over the next 30 years – top coal consumers India and China still have growth on the agenda.

The Chinese government has tasked its industry with boosting production capacity by 300 million tons this year, and the nation's top state-owned producer said it would boost development investment by more than half on the back of record profits.

Coal India is also likely to pour a large chunk of its earnings back into developing new mines, under government pressure to do more to keep pace with demand from power plants and heavy industry.

China and India worked together at a UN conference in Glasgow last year to water down language in a global climate statement to call for a “phase down” of coal use instead of a “phase out.”

At the time, few would have predicted just how expensive the fuel would become. Just a year ago, the biggest international mining companies – excluding Glencore – were in a full retreat from coal, deciding the paltry returns were not worth



the increasing pressure from investors and climate activists.

When Anglo American Plc spun off its coal business and handed it over to existing shareholders, one short seller, Boatman Capital, said the new business was worth nothing. Instead the stock – known as Thungela Resources Ltd. – skyrocketed, gaining more than 1,000% since its June 2021 listing, with first-half earnings per share up about 20-fold.

Glencore itself snapped up a Colombian mine from former partners Anglo and BHP Group. The nature of the deal, and rising coal prices, meant Glencore essentially got the mine for free by the end of last year. In the first six months of this year, it made \$2 billion in profit from that one mine, more than double its entire coal businesses earnings in the same period last year.

The earnings look set to keep rolling in, as analysts and coal executives say the market will remain tight.

“As we stand today, we don’t see this energy crisis going away for some time,” Glencore Chief Executive Officer Gary Nagle said.

*– With assistance by David Stringer, and Will Wade*

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**Russian gas cuts will not  
kill German economy**



By Daniel Gros/Brussels

Much of the conventional wisdom about Europe's current natural-gas crisis – triggered by reduced deliveries from Russia – rests on two assumptions: that the German economy depends on cheap Russian gas, and that this bet has gone spectacularly wrong. But while German industry is strong, and the country imports a lot of natural gas from Russia, a closer inspection of the numbers and economics involved does not support the prevailing narrative.

For starters, natural gas does not play a large enough role to drive an industrial economy. In 2019, gas imports via pipeline cost Germany \$30 billion, representing only 0.75% of its GDP, and the overall value of the country's gas consumption was below 2% of GDP. These modest ratios are similar across industrialised economies and suggest that cheap gas imports are highly unlikely to be a major growth factor. Moreover, even though gas consumption has stagnated in Germany and most of Western Europe over the past two decades, the economy grew, albeit slowly.

The argument that cheap Russian gas might have favoured Germany more than other countries also is not backed up by the numbers. In 2019, Germany accounted for only about 2.3% of

global natural-gas consumption, but 4.5% of world GDP. Germany's gas intensity per unit of GDP is thus about one-half of the global average, much lower than that of the United States and many other industrialised countries, including Japan and South Korea.

European economies tend to be thriftier in their energy use than the rest of the world. But even within Europe, Germany performs well, with lower gas consumption per unit of GDP than other large European economies, such as Italy and Spain. This is surprising since these two Mediterranean countries have much less need for heating in winter (and air conditioning in summer requires an order of magnitude less power than heating). Only France, with its large nuclear-power sector, is less dependent on gas.

A similar picture emerges from related metrics, such as the value of energy imports as a percentage of GDP, or gas usage for industrial purposes as a share of industrial value added. All these indicators show that the German economy uses energy less intensively than most others.

The idea that German industry gained an advantage from access to cheap Russian gas ignores the reality that there is a European gas market with, up to now, only small differences in wholesale prices across countries. One could of course argue that Russia sold its energy cheaply to Germany to make the country dependent. But the data challenge the common perception that Germany receives cheap gas.

Over the past decade, German industry has paid about 10% more for natural gas than its competitors in other major European economies. Supplies from North Sea fields have enabled British industrial firms to pay even less than their continental peers, but this does not appear to have helped them much.

The implication is that Russia obtained a non-economic benefit (German dependence on its gas supplies) for almost no cost. The inverse of this is that Germany experienced a loss of energy independence without gaining a noticeable economic advantage.

The one large economy that is both energy-intensive and has

cheap natural gas is the United States. The average US citizen uses more than twice as much natural gas as a European – 25 megawatt-hours per year for the US, compared to about 10MWh for European countries. Moreover, US natural-gas prices have been somewhat lower than German or EU prices for most of the past two decades, and are now only a fraction of the European price, as European prices have increased by a factor of five, whereas US prices have changed little. Despite this cost advantage, however, the manufacturing industry of the US – and that of the United Kingdom – has not grown particularly strongly.

Adjusting to a world without Russian gas is of course a major problem for Europe. Yet, although Germany seems more vulnerable because it used to receive a large share of its gas from Russia, this can change quickly. Germany is building new regasification capacity in record time to allow the country to import the quantities of liquefied natural gas needed to fill the gap between lower Russian supplies and domestic demand, which is already falling because of high prices.

Once this import capacity has been constructed, Germany will be in the same situation as its European neighbours, which also have to bid for LNG. Prices are likely to stay high for some time. But with an energy intensity below the EU average, Germany should be able to bear the burden slightly better than Italy, Spain, and some Eastern European countries. France, of course, will be much less affected, at least if its nuclear reactors can resume full production.

We should also not forget the global picture. Bottling up a large percentage of Russian gas (which is what will happen if Europe no longer buys from Russia) increases the global gas price, which affects Asian countries as well, because they compete with Europe on LNG. South Korea and Japan have a higher energy intensity than Europe, and even China imports large quantities of LNG, at a price similar to what European countries pay.

Expensive energy, particularly natural gas, poses a difficult economic and political challenge for all energy-importing

industrialised countries. Only the US and some other smaller energy producers such as Norway, Canada, and Australia benefit from this situation. But the data suggest that Germany is better placed to weather this crisis than most of its main competitors. – Project Syndicate

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## بارودي: الجهود الأميركية بدأت تتسم بالإيجابية ما سيمكن لبنان خلال شهر من بدء التنقيب عن النفط والغاز



، “الجهود رودي بارودي ثمّن الخبير الدولي في مجال الطاقة، الخارجية ولا سيما الولايات المتحدة الأميركية التي تقوم بها ، عبر الوسيط أموس هوكستين، من أجل تسوية النزاع الأميركية

“، لافتًا إلى أن ” هذه إسرائيل ولبنان الحدودي البحري بين الجهود بدأت تتسم بالإيجابية، ما سيمكن لبنان في خلال شهر على النفط عن التنقيب أبعد تقدير من الدخول فعليًا في عملية، ولا سيما في البلوكات الجنوبية، وتحديدًا البلوك رقم 9 والغاز، “قانا حيث حقل”.

وأشار، في تصريح، إلى أن ” الطرح الإسرائيلي للمرور بالبلوك اللبناني رقم 8، هو مجرد مناورة ذكية لهدف آخر، ذلك أن اتفاقية الغاز بين إسرائيل وقبرص واليونان، التي تمتد إلى إيطاليا وكانت قد وقعت في 3 كانون الثاني من العام 2020، لن ترى النور، باعتبار أن لا جدوى اقتصادية منها، لأنه مهما كانت كمية الغاز المنتجة حاليًا، فلن تكون مبررًا لإنفاق من 12 إلى 14 مليار يورو، لبناء خط أنابيب بقطر 48 إنشًا لمسافة 1125 ”ملاً“.

وجدد بارودي الإشادة بـ”إيجابية المفاوضات الجارية حاليًا، وبالجهود المبذولة لحماية حقوق لبنان على الصعيد الدولي”، الدولة مركزًا على أن ”أكثر الأخبار إيجابية، هي أن أركان متفقون على التوجه ذاته”. وأعرب عن تفاؤله بأن اللبانية “الاتفاق سيصل إلى خواتيم مشجعة ترضي جميع الجهات

## How Europe Became So Dependent on Putin for Its Gas

Russian gas is attractive to Europe because it's usually cheap, easy to transport and almost always available. Some European Union countries depend on it because they are shutting coal plants, and Germany is even planning for the end of nuclear power. Russia's dominance has been enhanced by the depletion of North Sea fields controlled by the U.K. and the Netherlands. Gazprom PJSC supplies about a third of all gas



consumed in Europe and, before the Russian invasion of Ukraine, was on track to become even more important as the continent shrinks its own production. In March, however, Russia threatened to cut supplies, and the European Union began mapping out a path to reduce its dependence.

### 1. How did Russia become so significant?

With its vast Siberian fields, Russia has the world's largest reserves of natural gas. It began exporting to Poland in the 1940s and laid pipelines in the 1960s to deliver fuel to and through satellite states of what was then the Soviet Union. Even at the height of the Cold War, deliveries were steady. But since the Soviet Union broke up, Russia and Ukraine have quarreled over pipelines through Ukrainian territory, prompting Russian authorities to find other routes.

### 2. How vulnerable is Europe?

A supply crunch in late 2021 provided a vivid insight into Europe's reliance on gas flows from Russia. Storage tanks in the EU fell to their lowest seasonal level in more than a decade after longer-than-usual maintenance at Norwegian fields and Russia rebuilding its own inventories. Benchmark gas prices more than tripled. The EU vowed a decade ago to reduce its dependence on Russian energy, and continuing purchases by member nations have been a contentious issue within the economic bloc and caused rifts with the U.S.

### 3. What role does Ukraine play?

About a third of Russian gas flowing to Europe passes through Ukraine. Even as the crisis in the region escalated into war, analysts said Russia, with a history of supply disruptions over price disputes, probably would strive to be seen as a reliable supplier. Gazprom's shipments to Europe and Turkey were about 177 billion cubic meters in 2021, according to calculations by Bloomberg News and BCS Global Markets based on the company's data. When Ukraine and Russia reached a five-

year gas transit deal in December 2019, assuring supplies until 2024, Ukrainian President Volodymyr Zelenskiy said the nation would earn at least \$7 billion from transit fees.

#### 4. How has Russia disrupted the market before?

In 2006 and 2009, disputes with Ukraine over pricing and siphoning of gas led to cutoffs of Russian supplies transiting through the country. The second shutdown lasted almost two weeks in the dead of winter. Slovakia and some Balkan countries had to ration gas, shut factories and cut power supplies. Since then, the most vulnerable countries have raced to lay pipelines, connect grids and build terminals to import liquefied natural gas, a supercooled form of the fuel that can be shipped from as far as Qatar and the U.S.

#### 5. What supply networks are there?

Outside supplies, mostly from Russia, Norway and Algeria, account for about 80% of the gas the EU consumes. Some of the biggest economies are among the most exposed, with Germany importing 90% of its needs – much of it via a pipeline under the Baltic Sea called Nord Stream, which has been fully operational since 2012. (This was the supply line Russia on March 7 suggested could be cut as part of its response to sanctions imposed over the invasion of Ukraine.) Belgium, Spain and Portugal face the problem of low storage capacity, as does the U.K., which no longer is part of the bloc and closed its only big gas storage site. The continent has a mass of pipelines, including Yamal-Europe, which runs from Russia through Belarus and Poland before reaching Germany, and TAG, which takes Russian gas to Austria and Italy. Many cross several borders, creating plenty of possible choke points.

#### 6. What about the Nord Stream 2 pipeline?

It was against this background that Nord Stream 2, a new Russian pipeline alongside the first, was completed in late 2021. But it has become entangled in politics and a lengthy

regulatory process. There was strong opposition from the U.S., which imposed sanctions that delayed construction. Following the eruption of the war in Ukraine, Germany suspended its certification process for Nord Stream 2, and the EU's executive arm readied a revised energy strategy for the bloc to "substantially reduce our dependency on Russian gas this year."

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## Russia cuts gas flows further as Europe makes savings plea



Reuters/Berlin/Frankfurt

Russia delivered less gas to Europe yesterday in a further escalation of an energy stand-off between Moscow and the

European Union that will make it harder, and costlier, for the bloc to fill up storage ahead of the winter heating season. The cut in supplies, flagged by Gazprom earlier this week, has reduced the capacity of Nord Stream 1 pipeline – the major delivery route to Europe for Russian gas – to a mere fifth of its total capacity.

Nord Stream 1 accounts for around a third of all Russian gas exports to Europe.

On Tuesday, EU countries approved a weakened emergency plan to curb gas demand after striking compromise deals to limit cuts for some countries, hoping lower consumption will ease the impact in case Moscow stops supplies altogether.

The plan highlights fears that countries will be unable to meet goals to refill storage and keep their citizens warm during the winter months and that Europe's fragile economic growth may take another hit if gas will have to be rationed.

Royal Bank of Canada analysts said the plan could help Europe get through the winter provided gas flows from Russia are at 20-50% capacity, but warned against "complacency in the market European politicians have now solved the issue of Russian gas dependence."

While Moscow has blamed various technical problems for the supply cuts, Brussels has accused Russia of using energy as a weapon to blackmail the bloc and retaliate for Western sanctions over its invasion of Ukraine.

Kremlin spokesman Dmitry Peskov said Gazprom was supplying as much gas to Europe as possible, adding that sanctions-driven technical issues with equipment were preventing it from exporting more.

Yesterday, physical flows via Nord Stream 1 tumbled to 14.4mn kilowatt hours per hour (kWh/h) between 1000-1100 GMT from around 28mn kWh/h a day earlier, already just 40% of normal capacity.

The drop comes less than a week after the pipeline restarted following a scheduled 10-day maintenance period.

European politicians have repeatedly warned Russia could stop gas flows completely this winter, which would thrust Germany

into recession and send prices for consumers and industry soaring even further.

The Dutch wholesale gas price for August, the European benchmark, jumped 9% to 205 euros per megawatt hour yesterday, up around 412% from a year ago.

German finance minister Christian Lindner said he was open to the use of nuclear power to avoid an electricity shortage.

Germany has said it could extend the life of its three remaining nuclear power plants, accounting for 6% of the country's overall power mix, in the face of a possible cut-off of Russian gas.

Klaus Mueller, head of Germany's network regulator, said the country could still avoid a gas shortage that would prompt its rationing. Germany, Europe's top economy and its largest importer of Russian gas, has been particularly hit by supply cuts since mid-June, with its gas importer Uniper requiring a 15bn euro (\$15.21bn) state bailout as a result. Uniper and Italy's Eni both said they received less gas from Gazprom than in recent days.

Mueller issued another plea to households and industry to save gas and avoid rationing.

"The crucial thing is to save gas," Mueller said. "I would like to hear less complaints but reports (from industries saying) we as a sector are contributing to this," he told broadcaster Deutschlandfunk.

German industry groups, however, warned companies may have no choice but cut production to achieve bigger savings, pointing to slow approval for replacing natural gas with other, more polluting fuels.

Mercedes-Benz chief executive Ola Kaellenius said a mixture of efficiency measures, increased electricity consumption, lowering temperatures in production facilities and switching to oil could lower gas use by up to 50% within the year, if necessary.

Germany is currently at Phase 2 of a three-stage emergency gas plan, with the final phase to kick in once rationing can no longer be avoided.