

# 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 built 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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# 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 آموس 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 الدّخول فعليًا في عملية، ولا سيما في البلوكات الجنوبية، وتحديدًا البلوك رقم 9 والغاز".

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 وُقعت في 3 كانون الثاني من العام 2020، لن ترى النور، باعتبار أن لا جدوى اقتصادية منها، لأنّه مهما كانت كمية الغاز المنتجة حاليًا، فلن تكون مبررًا لإنفاق من 12 إلى

14 مليار يورو، لبناء خط أنابيب بقطر 48 إنشاً لمسافة 1125 ميلاً.

وجدّ بارودي الإشادة بـ"إيجابية المفاوضات الجارية حالياً، وبالجهود المبذولة لحماية حقوق لبنان على الصعيد الدولي"، الدولة مركزاً على أن "أكثر الأخبار إيجابية"، هي أن أركان متفقون على التوجّه ذاته". وأعرب عن تفاؤله بأنّ اللبناية "الاتفاق سيصل إلى خواتيم مشجّعة ترضي جميع الجهات

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## 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.

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## **No net zero without nature**



By Nigel Topping And Mahmoud Mohieldin/ London

Businesses, investors, and governments that are serious about fulfilling net-zero emissions pledges before 2050 should be rushing to protect, conserve, and regenerate the natural resources and ecosystems that support our economic growth, food security, health, and climate. Yet there appear to be worryingly few trailblazers out there.

Worse, we are quickly running out of time. The science makes clear that to avoid the most catastrophic effects of climate change and to build resilience against the effects that are already inevitable, we must end biodiversity loss before 2030. That means establishing lasting conservation for at least 30% of land and sea areas within eight years, and then charting a course toward living in harmony with nature by 2050.

Though the challenge is massive, ignoring it makes no sense from a business perspective. A World Economic Forum white paper estimates that nature-positive policies “could generate an estimated \$10tn in new annual business value and create 395mn jobs by 2030.” Among other things, such policies would use precision-agriculture technologies to improve crop yields – diversifying diets with more fruit and vegetables in the process – and boost agroforestry and peatland restoration.

A nature-positive approach can also be more cost-effective. For example, the Dasgupta Review (the Final Report of the United Kingdom's Independent Review on the Economics of Biodiversity) finds that green infrastructure like salt marshes and mangroves are 2-5 times cheaper than grey infrastructure such as breakwaters.

Nonetheless, private-sector action is lagging, including in economic sectors where the health of value chains is closely tied to that of nature. That is one key finding from an analysis just released by the UN Climate Change High-Level Champions, Global Canopy, Rainforest Alliance, and others.

Out of 148 major companies assessed, only nine – or 6% – are making strong progress to end deforestation. Among them are the Brazilian paper and pulp producer Suzano and five of the largest consumer goods companies: Nestlé, PepsiCo, Unilever, Mars, and Colgate-Palmolive.

Unilever, for example, is committed to a deforestation-free supply chain by 2023, and thus is focusing on palm oil, paper and board, tea, soy, and cocoa, as these contribute to more than 65% of its impact on land. Nestlé has now made over 97% of its primary meat, palm oil, pulp and paper, soy, and sugar supply chains deforestation-free. And PepsiCo aims to implement regenerative farming across the equivalent of its agricultural footprint by 2030, and to end deforestation and development on peat.

These are positive steps, but they represent exceptions, rather than any new normal. Moreover, the financial sector has also been slow to turn nature-positive. Since the COP26 climate-change conference in Glasgow last year, only 35 financial firms have committed to tackle agricultural commodity-driven deforestation by 2025. The hope now is that more firms will join the deforestation commitment by COP27 this November. Under the umbrella of the Glasgow Financial Alliance for Net Zero, 500 financial firms (representing \$135tn in assets) have committed to halving their portfolios' emissions by 2030 and reaching net zero by 2050. And now, the Alliance has issued new net-zero guidance that includes

recommended policies for addressing deforestation.

Nature functions as a kind of global capital, and protecting it should be a no-brainer for businesses, investors, and governments. The World Economic Forum finds that “\$44tn of economic value generation – over half the world’s total GDP – is moderately or highly dependent on nature and its services.” But this profound source of value is increasingly at risk, as demonstrated by the current food crisis, which is driven not just by the war in Ukraine but also by climate-related disasters such as drought and India’s extreme heatwave, locust swarms in East Africa, and floods in China.

Businesses increasingly have the tools to start addressing these kinds of problems. Recently, the Science Based Targets initiative released a methodology for targeting emissions related to food, land, and agriculture. Capital for Climate’s Nature-Based Solutions Investment platform helps financiers identify opportunities to invest in nature with competitive returns. And the Business for Nature coalition is exploring additional moves the private sector can make.

Governments have also taken steps in the right direction. At COP26, countries accounting for over 90% of the world’s forests endorsed a leaders’ declaration to halt forest loss and land degradation by 2030. And a dozen countries pledged to provide \$12bn in public finance for forests by 2025, and to do more to leverage private finance for the same purpose. They can now start meeting those commitments ahead of COP27 in Sharm El-Sheikh, by enacting the necessary policies, establishing the right incentives, and delivering on their financial promises.

Meanwhile, the UN-backed Race to Zero and Race to Resilience campaigns will continue working in parallel, helping businesses, investors, cities, and regions put conservation of nature at the heart of their work to decarbonise and build resilience. The five strong corporate performers on deforestation are in the Race to Zero, and the campaign’s recently strengthened criteria will pressure other members to do more to use biodiversity sustainably and align their

activities and financing with climate-resilient development. The world is watching to see if the latest promises of climate action are robust and credible. By investing in nature now, governments and companies can show that they are offering more than words. – Project Syndicate

• *Nigel Topping is the United Kingdom's High-Level Climate Champion for COP26 in Glasgow. Mahmoud Mohieldin is Egypt's High-Level Climate Champion for COP27 in Sharm El-Sheikh.*

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## Why Biden's climate agenda has faltered



Instead, he has seen his legislative ambitions defeated by Congress, the Supreme Court has delivered a hammer blow to the federal government's ability to regulate greenhouse gasses, and the Ukraine crisis has been a boon for fossil fuels.

As the Democrat is poised to announce a series of new executive measures, including additional funding to help protect communities from extreme heat and boosting wind production, here is an overview of his term so far.

– What's at stake –

Shortly after taking office, Biden announced he was targeting a 50-52 percent reduction from 2005 levels in US economy-wide net greenhouse gas pollution in 2030, before achieving net zero in 2050, as part of the country's Paris Agreement goals.

"Biden has said he thinks that climate change is the existential issue of our time," and has been more emphatic than any of his predecessors including Barack Obama, Paul Bledsoe of the Progressive Policy Institute told AFP.

The president has framed the issue as key to the economic and national security of the United States, as well as public safety – and climate scientists are sounding the alarm now more than ever.

"I think that more and more people are realizing that we're living through what could eventually cause us to lose everything in terms of habitability and everything that we value in life," climate scientist Peter Kalmus told AFP.

Europe's punishing heatwave serves as a timely reminder that warming won't be an issue confined to the Global South, but instead threatens civilization as we know it, he added.

– Congress, the Supreme Court, and Ukraine –

The main legislative plank of Biden's agenda was to have been the Build Back Better bill, which would have plowed \$550 billion into the clean energy and climate businesses – much coming from tax credits and incentives.

That effort is now in tatters after Democratic Senator Joe Manchin, a fossil fuel booster who wields outsized power in



the evenly split Senate, walked away last week from the bill that he'd promised to back.

At the end of June, the conservative supermajority Supreme Court found that the federal Environmental Protection Agency cannot issue broad limits on greenhouse gasses, such as cap-and-trade schemes, without Congressional approval.

"So we're on two strikes," said Bledsoe, who served as a climate aide to former president Bill Clinton.

What's more, the oil industry has pushed for more drilling in the wake of Russia's invasion of Ukraine, casting the issue as one of energy security.

A recent analysis by the Institute for Energy Research said that Biden's government picked up the pace of drilling permits on public land from March onward "to mollify the political pressure rising along with pump prices."

Biden had vowed to end new drilling on public lands, but his "pause" was overturned by a Trump-appointed judge in 2021.

On the other hand, there have been some partial wins: the administration has promulgated tighter emissions standards for vehicles, and toughened regulations on super-polluting methane emissions, said Bledsoe.

The bipartisan infrastructure law, passed last November, also contained some climate provisions, including \$7.5 billion for a nationwide network of electric vehicle chargers and investments in carbon capture and hydrogen technologies.

– What's next? –

But without the big ticket items, the United States is falling far short of its goals.

The Rhodium Group, an independent research firm, finds that "as of June 2022, we find that the US is on track to reduce

emissions 24 percent to 35 percent below 2005 levels by 2030 absent any additional policy action.”

The White House has not ruled out declaring a “climate emergency,” which would grant Biden additional policy powers, but given a hostile judiciary, this would likely be subject to legal challenge.

Bledsoe said to achieve real change, Biden should instead push for broad public backing.

“Democrats should make popular consumer clean energy tax br

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## **Absorbing energy transition shock**



By Owen Gaffney/ Stockholm

**The challenge for politicians is to devise fair policies that protect people from the inevitable shocks**

Russia's war on Ukraine has sent shockwaves around the world. Oil prices have skyrocketed and food prices have soared, causing political instability. The last time food prices were this volatile, riots erupted across the Arab world and from Burkina Faso to Bangladesh. This time, the energy and food shock is happening against the backdrop of the Covid-19 pandemic. When will the shocks end?

They won't. So, we can choose either resignation and despair, or a policy agenda to build social and political resilience against future shocks. Those are our options, and we had better start taking them seriously, because the shocks are likely to get worse. On top of geopolitical crises, the climate emergency will bring even greater disruptions, including ferocious floods, mega-droughts, and possibly even a simultaneous crop failure in key grain-producing regions worldwide. It is worth noting that India, the world's second-largest wheat producer, recently banned exports as part of its response to a devastating heatwave this spring.

But here's the thing: reducing vulnerability to shocks, for example, by embarking on energy and food revolutions, will also be disruptive. The energy system is the foundation of industrialised economies, and it needs to be overhauled to phase out fossil fuels within a few decades. Huge industries like coal and oil will have to contract, and then disappear. And agriculture, transportation, and other sectors will need to change radically to become more sustainable and resilient. The challenge for politicians, then, is clear: to devise fair policies that protect people from the inevitable shocks.

One idea with significant potential is a Citizen's Fund, which would follow a straightforward fee-and-dividend equation. Companies that emit greenhouse-gas emissions or extract natural resources would pay fees into the fund, which would then distribute equal payments to all citizens, creating an economic cushion during a period of transformation and beyond. This is not just an idea. In 1976, the Republican governor of Alaska, Jay Hammond, established the Alaska Permanent Fund,

which charges companies a fee to extract oil and then disburses the proceeds equally to all the state's citizens. In 2021, each eligible Alaskan received \$1,114 – not as a “welfare payment” but as a dividend from a state commons (in this case, a finite supply of oil). The largest dividend ever paid was during Republican Sarah Palin's governorship in 2008, when every Alaskan enjoyed a windfall of \$3,269.

In 2017, James Baker and George Shultz, two former Republican secretaries of state, proposed a similar plan for the whole United States, estimating that fees on carbon emissions would yield a dividend of \$2,000 per year to every US household. With backing from 3,500 economists, their scheme has broad appeal not just among companies and environmental-advocacy groups but also (and more incredibly) across the political aisle.

The economics is simple. A fee on carbon drives down emissions by driving up the price of polluting. And though companies would pass on these costs to consumers, the wealthiest would be the hardest hit, because they are by far the biggest, fastest-growing source of emissions. The poorest, meanwhile, would gain the most from the dividend, because \$2,000 means a lot more to a low-income household than it does to a high-income household. In the end, most people would come out ahead.

But given that food- and energy-price shocks tend to hit low-income cohorts the hardest, why make the dividend universal? The reason is that a policy of this scale needs both broad-based and lasting support, and people are far more likely to support a programme or policy if there is at least something in it for them.

Moreover, a Citizen's Fund is not just a way to drive down emissions and provide an economic safety net for the clean-energy transition. It would also foster innovation and creativity, by providing a floor of support for the entrepreneurs and risk-takers we will need to transform our energy and food systems.

A Citizen's Fund could also be expanded to include other

global commons, including mining and other extractive industries, plastics, the ocean's resources, and even knowledge, data, and networks. All involve shared commons – owned by all – that are exploited by businesses that should be required to pay for the negative externalities they create.

Of course, a universal basic dividend is not a panacea. It must be part of larger plan to build societies that are more resilient to shocks, including through greater efforts to redistribute wealth by means of progressive taxation and empowerment of workers. To that end, Earth4All, an initiative I co-lead, is developing a suite of novel proposals that we see as the most promising pathways to build cohesive societies that are better able to make long-term decisions for the benefit of the majority.

Our most important finding is perhaps the most obvious, but it is also easy to overlook. Whether we do the bare minimum to address the grand challenges or everything we can to build resilient societies, disruption and shocks are part of our future. Embracing disruption is thus the only option and a Citizen's Fund becomes an obvious shock absorber. – Project Syndicate

- Owen Gaffney is an analyst at the Stockholm Resilience Centre and the Potsdam Institute for Climate Impact Research.

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## **Gazprom gas cut casts spell on grain deal**



Russia dealt a new blow to European countries over their support for Ukraine yesterday, saying it would further cut gas supplies through its single biggest gas link to Germany. The move came as the first ships to export grain from Ukraine's Black Sea ports under a deal agreed last week could set sail within days, bringing a measure of hope to countries reliant on such food supplies even though the situation is still clouded by mistrust and potential danger. Both developments showed how the conflict – now in its sixth month and with no resolution in sight – is having an economic impact way beyond the battlefields of Ukraine.

On the frontlines, the Ukrainian military reported widespread Russian artillery barrages in the east overnight and said Moscow's troops were preparing for a new assault on Bakhmut, a city in the industrial Donbas region. Russian President Vladimir Putin warned the West earlier this month that sanctions imposed on his country for its invasion of Ukraine risked triggering huge energy price rises for consumers around the world. Yesterday, Russian energy giant Gazprom, saying it was acting under the instructions of an industry watchdog, said flows through the Nord Stream 1 pipeline would fall to 33mn cubic metres per day from yesterday.

That is half of the current flows, which are already only 40% of normal capacity. Prior to the war Europe imported about 40% of its gas and 30% of its oil from Russia. The Kremlin says the gas disruption is the result of maintenance issues and Western sanctions, while the European Union has accused Russia of resorting to energy blackmail. Germany said it saw no technical reason for the latest reduction. Politicians in Europe have repeatedly said Russia could cut off gas this winter, a step that would thrust Germany into recession and lead to soaring prices for consumers already faced with painfully high energy costs. The Kremlin has said Moscow is not interested in a complete stoppage of gas supplies to Europe. Rising energy prices and a global wheat shortage are among the most far-reaching effects of Russia's invasion of Ukraine. They threaten millions in poorer countries, especially in Africa and the Middle East, with hunger. Ukraine said on Monday it hoped a UN-brokered deal to try to ease the food shortages by resuming grain exports from Black Sea ports would start to be implemented this week. Officials from Russia, Turkey, Ukraine and the United Nations agreed on Friday there would be no attacks on merchant ships moving through the Black Sea to Turkey's Bosphorus Strait and on to markets. Moscow brushed aside concerns the deal could be derailed by a Russian missile strike on Ukraine's port of Odesa on Saturday, saying it targeted only military infrastructure.

Russia's Black Sea fleet has blocked grain exports from Ukraine since Moscow's February 24 invasion. Moscow denies responsibility for the food crisis, blaming Western sanctions for slowing its food and fertiliser exports and Ukraine for mining the approaches to its ports. Under Friday's deal, pilots will guide ships along safe channels. A Ukrainian government official said he hoped the first grain shipment from Ukraine could be made from Chornomorsk this week, with shipments from other ports within two weeks. "We believe that over the next 24 hours, we will be ready to work to resume

exports from our ports,” deputy infrastructure minister Yuriy Vaskov told a news conference. A United Nations spokesperson, speaking in New York, said the first ships may move within a few days.

A Joint Coordination Center will liaise with the shipping industry and publish detailed procedures for ships in the near future, he said. Russian Foreign Minister Sergei Lavrov, speaking during a tour of African countries, said there were no barriers to the export of grain and nothing in the deal prevented Moscow from attacking military infrastructure in Ukraine. The Kremlin also said the United Nations must ensure curbs on Russian fertiliser and other exports were lifted for the grain deal to work. Before the invasion and subsequent sanctions, Russia and Ukraine accounted for nearly a third of global wheat exports.

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**No trash goes to waste on recycling Greek islands**





By Sebastien Malo/ Tilos

Before the tiny Greek island of Tilos became a big name in recycling, taverna owner Aristoteles Chatzifountas knew that whenever he threw his restaurant's trash into a municipal bin down the street it would end up in the local landfill.

The garbage site had become a growing blight on the island of now 500 inhabitants, off Greece's south coast, since ships started bringing over packaged goods from neighbouring islands in 1960.

Six decades later, in December last year, the island launched a major campaign to fix its pollution problem. Now it recycles up to 86% of its rubbish, a record high in Greece, according to authorities, and the landfill is shut.

Chatzifountas said it took only a month to get used to separating his trash into three bins – one for organic matter; the other for paper, plastic, aluminium and glass; and the third for everything else.

"The closing of the landfill was the right solution," he told the Thomson Reuters Foundation. "We need a permanent and more ecological answer."

Tilos' triumph over trash puts it ahead in an inter-island race of sorts, as Greece plays catch-up to meet stringent

recycling goals set by the European Union (EU) and as institutions, companies and governments around the world adopt zero-waste policies in efforts to curb greenhouse gas emissions.

“We know how to win races,” said Tilos’ deputy mayor Spyros Aliferis. “But it’s not a sprint. This is the first step (and) it’s not easy.”

The island’s performance contrasts with that of Greece at large. In 2019, the country recycled and composted only a fifth of its municipal waste, placing it 24th among 27 countries ranked by the EU’s statistics office.

That’s a far cry from EU targets to recycle or prepare for reuse 55% of municipal waste by weight by 2025 and 65% by 2035.

Greece has taken some steps against throwaway culture, such as making stores charge customers for single-use plastic bags.

Still, “we are quite backward when it comes to recycling and reusing here,” said Dimitrios Komilis, a professor of solid waste management at the Democritus University of Thrace, in northern Greece.

Recycling can lower planet-warming emissions by reducing the need to manufacture new products with raw materials, whose extraction is carbon-heavy, Komilis added.

Getting rid of landfills can also slow the release of methane, another potent greenhouse gas produced when organic materials like food and vegetation are buried in landfills and rot in low-oxygen conditions.

And green groups note that zero-waste schemes can generate more jobs than landfill disposal or incineration as collecting, sorting and recycling trash is more labour-intensive.

But reaching zero waste isn’t as simple as following Tilos’ lead – each region or city generates and handles rubbish differently, said researcher Dominik Noll, who works on sustainable island transitions at Vienna’s Institute of Social Ecology.

“Technical solutions can be up-scaled, but socioeconomic and

sociocultural contexts are always different,” he said.

“Every project or programme needs to pay attention to these contexts in order to implement solutions for waste reduction and treatment.”

Tilos has built a reputation as a testing ground for Greece’s green ambitions, becoming the first Greek island to ban hunting in 1993 and, in 2018, becoming one of the first islands in the Mediterranean to run mainly on wind and solar power.

For its “Just Go Zero” project, the island teamed up with Polygreen, a Piraeus-based network of companies promoting a circular economy, which aims to design waste and pollution out of supply chains.

Several times a week, Polygreen sends a dozen or so local workers door-to-door collecting household and business waste, which they then sort manually.

Antonis Mavropoulos, a consultant who designed Polygreen’s operation, said the “secret” to successful recycling is to maximise the waste’s market value.

“The more you separate, the more valuable the materials are,” he said, explaining that waste collected in Tilos is sold to recycling companies in Athens.

On a June morning, workers bustled around the floor of Polygreen’s recycling facility, perched next to the defunct landfill in Tilos’ arid mountains.

They swiftly separated a colourful assortment of garbage into 25 streams – from used vegetable oil, destined to become biodiesel, to cigarette butts, which are taken apart to be composted or turned into materials like sound insulation.

Organic waste is composted. But some trash, like medical masks or used napkins, cannot be recycled, so Polygreen shreds it, to be turned into solid recovered fuel for the cement industry on the mainland.

More than 100 tonnes of municipal solid waste – the equivalent weight of nearly 15 large African elephants – have been sorted so far, said project manager Daphne Mantziou.

Setting up the project cost less than € 250,000 (\$254,550) –

and, according to Polygreen figures, running it does not exceed the combined cost of a regular municipal waste-management operation and the new tax of €20 per tonne of landfilled waste that Greece introduced in January.

More than ten Greek municipalities and some small countries have expressed interest in duplicating the project, said company spokesperson Elli Panagiotopoulou, who declined to give details.

Replicating Tilos' success on a larger scale could prove tricky, said Noll, the sustainability researcher.

Big cities may have the money and infrastructure to efficiently handle their waste, but enlisting key officials and millions of households is a tougher undertaking, he said.

"It's simply easier to engage with people on a more personal level in a smaller-sized municipality," said Noll.

When the island of Paros, about 200km northwest of Tilos, decided to clean up its act, it took on a city-sized challenge, said Zana Kontomanoli, who leads the Clean Blue Paros initiative run by Common Seas, a UK-based social enterprise.

The island's population of about 12,000 swells during the tourist season when hundreds of thousands of visitors drive a 5,000% spike in waste, including 4.5mn plastic bottles annually, said Kontomanoli.

In response, Common Seas launched an island-wide campaign in 2019 to curb the consumption of bottled water, one of a number of its anti-plastic pollution projects.

Using street banners and on-screen messages on ferries, the idea was to dispel the common but mistaken belief that the local water is non-potable.

The share of visitors who think they can't drink the island's tap water has since dropped from 100% to 33%, said Kontomanoli.

"If we can avoid those plastic bottles coming to the island altogether, we feel it's a better solution" than recycling them, she said.

Another anti-waste group thinking big is the nonprofit DAFNI

Network of Sustainable Greek Islands, which has been sending workers in electric vehicles to collect trash for recycling and reuse on Kythnos island since last summer.

Project manager Despina Bakogianni said this was once billed as “the largest technological innovation project ever implemented on a Greek island” – but the race to zero waste is now heating up, and already there are more ambitious plans in the works.

Those include CircularGreece, a new €16mn initiative DAFNI joined along with five Greek islands and several mainland areas, such as Athens, all aiming to reuse and recycle more and boost renewable energy use.

“That will be the biggest circular economy project in Greece,” said Bakogianni. – Thomson Reuters Foundation

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