

Green power is the first domino



As world leaders convene at the UN Climate Change Conference (COP27), it is obvious to all that bolder action is needed to avert disaster. The UN warns that global efforts to reduce greenhouse-gas (GHG) emissions remain insufficient to limit temperature increases to 1.5C, relative to pre-industrial levels.

To meet this target, decarbonising the power sector is critical. Electricity accounts for about 25% of the world's GHG emissions, and it also will play a critical role in decarbonising other sectors, such as buildings, transportation, and manufacturing. The challenge, then, is to achieve "24/7 carbon-free energy" (24/7 CFE): the total elimination of carbon from the electricity sector – at every hour of every day, in every grid around the world.

Research in the United States and Europe has shown that 24/7 CFE strategies have a greater impact on the decarbonisation of electricity systems than the current practice of purchasing electricity from renewable sources to match annual consumption patterns. Recent International Energy Agency modelling for

India and Indonesia shows that hourly matching strategies lead to more diverse technology portfolios, with the clean, dispatchable generation and storage needed for net-zero transitions in the power sector. Critically, this approach helps electricity systems shift away from fossil fuels by accelerating uptake of the full suite of carbon-free technologies needed to deliver around-the-clock clean power. Decarbonising energy systems worldwide is possible, but it will require collective action to accelerate the development and deployment of advanced clean-energy technologies. New investments, supportive public policies, and partnerships among stakeholders are all part of the solution. That is why the UN, Sustainable Energy for All (SEforALL), Google, and a diverse group of signatories launched the 24/7 CFE Compact in 2021. The compact represents a growing global community of stakeholders that are committed to providing the support, tools, and partnerships needed to make 24/7 CFE a reality everywhere.

Among the most recent to join the 24/7 CFE Compact is the Scottish government. "Scotland was the first country in the United Kingdom to declare a climate emergency, and indeed among the first in the world to recognise the importance of taking immediate and bold action," notes Scottish First Minister Nicola Sturgeon. "Governments must hold themselves to account in limiting global temperature rise to 1.5C. We are committed to putting accountability at the centre of all that we do. Our position is clear that unlimited extraction of fossil fuels is not consistent with our climate obligations." Similarly, just last month, Google and C40, a network of almost 100 cities, launched a first-of-its-kind 24/7 CFE programme focusing on regional electricity grids. With urban areas accounting for over half the world's population and more than 70% of global carbon dioxide emissions, cities have a critical role to play in driving the changes needed to tackle the climate crisis.

Developing and emerging economies will need more energy to bridge energy-access gaps, and to support economic growth and

development. But as capacity expands, it must be clean. A 24/7 CFE approach can serve both purposes, providing both greater access and cleaner energy. We therefore must move faster to make 24/7 CFE cheaper and more accessible globally. According to the latest IEA data, the number of people living without electricity will rise by almost 20mn in 2022, reaching nearly 775mn. Most of that increase will be in Sub-Saharan Africa, where the size of the cohort lacking access has nearly returned to its 2013 peak.

The world cannot achieve net-zero emissions without first ensuring universal electricity access. That will require annual investments of at least \$30bn – two-thirds of which will need to go to Sub-Saharan Africa – between now and 2030. Fortunately, not only is 24/7 CFE a moral imperative, but it also represents the most cost-effective option for connecting underserved populations.

Many of these populations will otherwise continue to rely on dirtier sources of energy. Small island developing states such as Nauru, Palau, the Bahamas, and Trinidad and Tobago, for example, all have electricity grids that depend heavily on inefficient, carbon-intensive technologies such as diesel generators. These countries' experience shows why 24/7 CFE must not be framed merely as a European or North American issue. It is a global one, and it has become increasingly urgent for developing countries on the front lines of climate change.

Implementing 24/7 CFE strategies globally will require not only funding but also measures to scale up the deployment of advanced technologies, to create more favourable market conditions, and to share best practices and data. If we can fully decarbonise our grids, the rest of the green transition should become cheaper and easier.

The 24/7 CFE Compact provides an opportunity to drive the much-needed policy change, investment, and research in this crucial next phase of climate action. We invite all governments, companies, and organisations to join us and help chart a more sustainable path toward a net-zero future. –

COP27: Financing for climate damages gets a foot in the door



AFP/Sharm El-Sheikh

UN climate negotiations yesterday offered a sliver of hope and “solidarity” for developing countries battered by increasingly costly impacts of global warming, in agreeing to discuss the thorny issue of money for “loss and damage”.

Countries least responsible for planet-heating emissions – but hardest hit by an onslaught of weather extremes – have been ramping up the pressure on wealthy polluting nations to provide financial help for accelerating damages.

But in a sign of how contentious the issue is among richer nations fearful of open-ended climate liability, the issue was

only added to the formal agenda to the UN's COP27 climate summit in the Egyptian resort town of Sharm el-Sheikh after two days of last-ditch negotiations.

This "reflects a sense of solidarity and empathy for the suffering of the victims of climate induced disasters," Egypt's Sameh Shoukry, the COP27 president, said to applause. At last year's UN summit in Glasgow, the European Union and the United States rejected calls for a separate financial mechanism.

Instead, negotiators agreed to start a "dialogue" extending through 2024 on financial compensation.

The issue has grown ever more urgent in recent months as nations were slammed by a crescendo of disasters, such as the massive flooding that put a third of Pakistan under water in August.

Senegal's Madeleine Diouf Sarr, who represents the Least Developed Countries negotiating bloc, said climate action across the board had been far too slow.

"Lives are being lost. Climate change is causing irreversible loss and damage, and our people carry the greatest cost," she said, adding that an agreement on funding arrangements must be reached in Egypt.

Appeals for more money are bolstered by a field known as event attribution science, which now makes it possible to measure how much global warming increases the likelihood or intensity of an individual cyclone, heat wave, drought or heavy rain event.

"Today, countries cleared an historic first hurdle toward acknowledging and answering the call for financing to address increasingly severe losses and damages," said Ani Dasgupta, head of the World Resources Institute, a climate policy think tank.

But he said that getting negotiators to agree to discuss the issue was only an initial step.

"We still have a marathon ahead of us before countries iron out a formal decision on this central issue for C027," he said.

Wrangling over loss and damage has unfolded against the backdrop of an unmet promise by rich nations to provide \$100bn a year starting in 2020 to help the developing world green their economies and anticipate future impacts, called "adaptation" in UN climate lingo.

That funding goal is still \$17bn short. Rich nations have vowed to hit the target by the end of 2023, but observers say the issue has severely undermined trust.

The UN Environment Programme has said the goal – first set in 2009 – has not kept up with reality, and estimates that funding to build resilience to future climate threats should be up to 10 times higher.

Meanwhile, countries are far off track to reach the Paris deal goal of limiting global warming to 1.5 degrees Celsius.

The UN says the world is currently heading to 2.8C of warming, or a still-catastrophic 2.4C even if all national pledges under the Paris treaty are fulfilled.

Depending on how deeply the world slashes carbon pollution, loss and damage from climate change could cost developing countries \$290-580bn a year by 2030, reaching \$1-1.8tn in 2050, according to the Grantham Research Institute on Climate Change and the Environment in London.

The World Bank has estimated the Pakistan floods alone caused \$30bn in damages and economic loss. Millions of people were displaced and two million homes destroyed.

Simon Stiell, the UN's climate change executive secretary, said vulnerable countries are "tired" and "frustrated".

"Here in Sharm el-Sheikh we have a duty to speed up our international efforts and turn words into action to catch up with their lived experience," he said.

Up to now, poor countries have had scant leverage in the UN wrangle over money. But as climate damages multiply, patience is wearing thin.

The AOSIS negotiating block of small island nations told AFP that they would like to see the details for a dedicated loss-and-damage fund worked out within a year.

"There's not enough support for us to even to begin to prepare

for the loss and damage that we are expected to face,” said AOSIS lead negotiator on climate finance Michai Robertson.

China is doubling down on coal despite its green ambitions



Bloomberg / Beijing

China is building a vast array of new coal-fired power stations, potentially more than the operating capacity of the US, even though it knows the plants will probably never be fully used.

The puzzle of why the world's leading installer of clean energy is investing so much in the worst polluting – and increasingly expensive – fossil fuel shows the depth of Beijing's concern over the global squeeze in energy supplies. But it also reflects planning for a gradual relegation of

coal's role, from prime power source to a widely available but often idle backup to China's rapidly expanding renewables fleet.

Work on at least 165 gigawatts of plants powered by coal should begin by the end of 2023, the National Development and Reform Commission told executives at a meeting in September, according to state-backed Jiemian News. The chairman of China Energy Engineering Corp, meanwhile, has forecast the country could add a total of 270 gigawatts in the five years to 2025 – more than currently exists in any other nation.

New coal permits have already increased, and while the final extent of the ramp-up isn't known, adding 270 gigawatts could cost 568bn to 766bn yuan (\$79bn to \$106bn), according to a calculation based on BloombergNEF data. Excluding China, the rest of the world's pipeline of coal power projects stands at about 101 gigawatts, data compiled by Global Energy Monitor show.

China's strategy is designed to avoid the pitfalls that have hobbled parts of the US and Europe, which stopped investing in fossil fuel production and infrastructure before renewables were ready to take over. That's led to an over-reliance on imports in some places, and in others a dependence on grids that can fall prey to the unreliability of sunshine and wind.

At the recent party congress, President Xi Jinping laid out how China's energy transition would be different by following "the principle of building the new before discarding the old." In practice, that means adding both clean power and more coal to try and eliminate economy-crippling power shortages and create a buffer against volatile global fuel prices, while at the same time advancing the country's long-term climate goals. As China's economy grows, it requires ever more power, and it has said it plans to peak coal consumption only by the middle of the decade.

But even as new plants are built, the intention is for them to be used less and less as they're displaced by increasing amounts of clean energy.

In the context of global energy insecurity, it's not

surprising that China would ramp up its coal capacity, said Yan Qin, an analyst in Oslo, Norway, at Refinitiv. "But the push to add more clean energy to the grid hasn't slowed down, meaning that growing renewables will squeeze the running hours of coal plants," she said.

The plan carries big risks. Coal financiers are directing capital to investments that are almost designed to be stranded. If they protest because their projects are being underutilised, it could slow the decarbonisation of the planet's worst polluter. And the world's carbon budget is finite, which means that any coal burned at all in China increases the chances of missing targets to avoid catastrophic warming.

The NDRC's proposal is already facing some pushback from utilities and local lenders, according to a person familiar with the matter. Many coal power generators are losing money amid high fuel prices and aren't enthusiastic about funding and running plants that would only be used during times of peak demand, the person said, declining to be identified because the talks are private.

Still, it's clear that the regulator's tone on coal power has changed since last year's energy crisis, according to the person. More plants will be built in areas that are reliant on hydropower, and near the massive wind and solar farms being built in the desert interior, to ensure reliable supply when intermittent renewables generation stalls, the person said.

China is also making efforts to lessen the burden on coal power generators, in large part by leaning on miners to boost output to record levels and keep the Chinese market well below sky-high international prices. The government has also given utilities leeway to charge higher rates to industrial customers. And, it's making progress in developing a mechanism that would compensate coal plants that sit idle while on backup duty, Refinitiv's Qin said.

In any case, the rate at which clean energy is added will probably be more instructive than power plant spending in determining when coal burning starts to dwindle, said Dave

Jones, a lead analyst at the climate think tank Ember in London.

Once renewables are installed they're basically free to produce, which means they'll be prioritised over coal. The moment that new clean energy generation outpaces new power demand is when coal use begins to fall, he said.

China is by far the world's largest renewables market, and its expansion continues to accelerate. Spending in the first half of this year more than doubled to \$98bn, compared to \$12bn in the US. As wind, solar and hydropower all charted strong growth over the period, mostly coal-based thermal power generation dropped 3.5%.

Although the historic drought in the summer curtailed hydropower so much that coal is back on track for a year-on-year increase, it won't be long before new clean energy capacity puts the fuel into permanent decline, Jones said.

"There is so much wind and solar being built and generating clean electricity," he said. "As long as China's not inventing a whole new use for thousands of terrawatt-hours of power, then from a demand perspective it's got to be reducing coal power, because there's nowhere else for that electricity to go."

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

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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

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

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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

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

Double-edged sword: Global hunger and climate goals



Poor or rich, societies across the world are now suffering from an unprecedented food and hunger crisis.

A United Nations gauge of world food prices has jumped more than 70% since mid-2020 and is near a record after Russia's invasion of Ukraine.

Battling hunger has garnered heightened attention this year, as the Ukraine crisis choked exports from one of the world's biggest crop suppliers, stoking food inflation and potentially leaving millions more undernourished.

The global agriculture sector won't eradicate hunger by the end of the decade or meet climate goals from the Paris Agreement without a major overhaul, key agencies have cautioned.

A UN pledge to eliminate hunger by 2030 appears out of reach, as low-income nations struggle to afford better diets, the Food and Agriculture Organisation said in a joint report with the Organisation for Economic Co-operation and Development.

Greenhouse gas emissions from agriculture are also seen continuing to rise on a business-as-usual path.

The challenges are two of the most vital issues facing the world's food sector.

Reversing current trends to meet both goals would require a 28% increase in agricultural productivity this decade – triple the rate of the last ten years – highlighting the scale of the problem.

The world's hunger problem has already reached its worst in years as the pandemic exacerbates food inequalities, compounding extreme weather and political conflicts.

The prolonged gains across the staple commodities are trickling through to store shelves, with countries from Kenya to Mexico reporting higher food costs.

The pain could be particularly pronounced in some of the poorest import-dependent nations, which have limited purchasing power and social safety net.

Soaring food and fuel costs recently helped send US inflation to a 40-year high. The US Department of Agriculture now expects retail food prices to gain 5% to 6% this year – roughly double its forecast from three months ago.

In Lebanon, poverty rates are sky-rocketing in the population of about 6.5mn, with around 80% of people classed as poor, says the UN agency ESCWA.

Last September, more than half of families had at least one child who skipped a meal, Unicef has said, compared with just over a third in April 2021.

Amid a devastating foreign exchange crisis, Sri Lanka, a country of 22mn people, is unable to pay for essential import of food items, fertiliser, medicines and fuel due to a severe dollar crunch.

Food costs account for 40% of consumer spending in sub-Saharan Africa, compared with 17% in advanced economies.

In 2020, Africa imported \$4bn of agricultural products from Russia.

Across the world, approximately 1.2bn people live in extreme poverty, on less than one dollar per day, according to a 2018 World Health Organisation report.

At least 17mn children suffer from severe acute malnutrition around the world, which is the direct cause of death for 2mn children every year.

Here's the disturbing other side of the lingering tragedy.

One-third of all food produced – around 1.3bn tonnes a year – is lost or wasted, according to the FAO. It costs the global economy close to \$940bn each year.

In the Gulf, between a third and half of the food produced is estimated to go to waste.

Improving food access through social safety nets and distribution programmes, especially for the most vulnerable, is key to reducing global hunger, according to the latest joint FAO-OECD report. Curbing emissions, reducing food waste and limiting calorie intake in rich countries are measures needed to meet climate goals, it said.

Aviation: long-term climate goal key to net-zero carbon emissions by 2050



The global aviation industry has committed to achieving net-zero carbon emissions by 2050. This commitment brings the industry in line with the Paris Agreement's 1.5C goal.

Climate change is the greatest threat facing our societies and achieving net-zero emissions will be a huge challenge as the expected scale of the industry in 2050 will require the mitigation of nearly 1.8 gigatonnes of carbon.

To fulfil aviation's net-zero commitment, current estimates are for sustainable aviation fuels (SAF) to account for 65% of aviation's carbon mitigation in 2050. That would require an annual production capacity of 449bn litres.

Investments are in place to expand SAF annual production from the current 125mn litres to 5bn by 2025. With effective government incentives, production could reach 30bn litres by 2030, which would be a tipping point for SAF production and utilisation.

In 2021, irrespective of price (SAF is between two and four times the price of conventional jet fuel), airlines have purchased every drop of the 125mn litres of SAF that was available. And already more than 38 countries have SAF-specific policies that clear the way for the market to develop.

Taking their cue from these policy measures, airlines have

entered into \$17bn of forward-purchasing agreements for SAF. Further investment in production needs support from the right policies, according to the International Air Transport Association, the global body of airlines. This would boost supply and drive down costs.

Electricity production through solar or wind power faced similar hurdles as these technologies replaced fossil fuels. With effective policy incentives, both are now affordable and widely available.

By applying similar incentive-based policies to SAF, governments can support global SAF production to reach 30bn litres by the end of the decade.

This would be a tipping point as it would send a clear signal to the market that SAF is playing its intended long-term role in aviation's decarbonisation and encourage investments to drive up production and drive down the price.

The market for SAF needs stimulation on the production side. The United States is setting an example for others to follow. Its SAF production is expected to reach 11bn litres in 2030 on the back of heavy government incentives.

Europe, on the other hand, is the example not to follow. Under its Fit for 55 initiative, the EU is planning to mandate that airlines uplift 5% SAF at every European airport by 2030.

Decentralising production will delay the development of economies of scale. And forcing the land transport of SAF will reduce the environmental benefit of using SAF.

To provide the right set of consistent policies and long-term stability needed for investments, the global aviation industry has called upon all governments to support the adoption of a long term climate goal for air transport at the 41st Assembly of the International Civil Aviation Organisation (ICAO) this September, aligned with industry commitments.

Undoubtedly, this climate goal is critical to back up the industry's decarbonisation ambitions and would provide a global multilateral framework for action without distorting competition.