Only public-private co-operation can accelerate decarbonisation

As countries around the world experienced record temperatures last year, UN Secretary-General Antonio Guterres declared: “We must turn a year of burning heat into a year of burning ambition.” But to move away from fossil fuels and unlock the green transition’s economic benefits, such as job creation and universal access to clean energy, industry leaders and policymakers must work together to translate the commitments made at the UN Climate Change Conference in Dubai (COP28) into actual renewable gigawatts.

COP28 marked a historic turning point in the battle against climate change. Rallying around the UAE Consensus, world leaders pledged to move away from fossil fuels, agreeing to triple renewable power capacity to at least 11,000 gigawatts

and double energy efficiency by 2030.
But ambition alone is not enough to achieve these targets and limit global warming to 1.5C. Governments must invest in mature, cost-competitive renewable technologies that can be rapidly deployed at scale. When integrated with long-duration energy storage, green hydrogen, and system optimisation, these technologies represent the most reliable and flexible way to accelerate the energy transition.
Renewables will undoubtedly shape the global energy landscape in the coming years. Both solar and wind power are expected to grow significantly, with hydropower serving as the backbone of grid flexibility. Consequently, renewables are poised to become the twenty-first century’s dominant source of global electricity.
But as a joint report released by the International Renewable Energy Agency (IRENA) and the Global Renewables Alliance (GRA) ahead of COP28 noted, tripling renewable capacity will require cooperation between the private and public sectors. Partnerships should focus on initiatives that deliver immediate results, such as mobilising low-cost financing, accelerating permitting processes, clearing grid connection backlogs, reforming government auction mechanisms for renewable-energy projects, and diversifying global supply chains. A strong commitment to inclusivity and the active participation of developing economies must be at the heart of these efforts. IRENA and GRA are demonstrating this commitment by collaborating on the annual reports commissioned by the COP28 Presidency to monitor progress toward the global tripling target and facilitate the energy transition.
We must, however, move faster, especially if we aim to ensure that progress is equitably distributed around the world. While renewable power capacity rose by 473 gigawatts in 2023, the economic benefits of the energy transition did not reach every country. Remarkably, 83% of these increases were concentrated in China, the European Union, and the US, leaving many countries in the Global South behind.
In fact, the shift to renewables is alarmingly slow in many

parts of the world. Opportunities to address development and access challenges in Sub-Saharan Africa, where more than 500mn people still lack access to electricity, are being squandered. This sluggish transition can be attributed largely to the lack of affordable financing, adequate planning, and the policy and market frameworks needed to support the adoption of renewable energy. Tellingly, public fossil-fuel subsidies reached $1.3tn in 2022 – roughly the annual investment needed to triple renewable capacity by 2030.

A critical first step toward fostering greater public-private co-operation in pursuit of COP28's ambitious targets is to reform the global financial architecture. Africa, for example, accounts for 17% of the world's population but has received less than 2% of global investments in renewable energy over the past two decades, underscoring the need to reduce capital costs and attract private investors. Developing industrial clusters and initiating grant programs could also help foster environments conducive to innovation and private-public partnerships.

Recent commitments by world leaders offer glimmers of hope. African leaders at the September 2023 Africa Climate Summit in Nairobi, for example, pledged to increase the continent's renewable capacity to at least 300 gigawatts by 2030. This effort aims to reduce energy poverty and boost the global supply of cost-effective clean energy suitable for industrial use.

Kenyan President William Ruto, a key advocate of the Nairobi agreement, established the Accelerated Partnership for Renewables in Africa, an African-led international alliance of governments and stakeholders that aims to accelerate renewable-energy deployment, increase access, promote green industrialisation, and strengthen economic and societal resilience.

Governments and business leaders should harness the current political momentum to foster co-operation between policymakers and private investors. As governments develop appropriate policy and market frameworks to facilitate the transition to renewables, the private sector – historically responsible for 86% of global investments in renewable energy – is poised to lead the charge. Together, we can achieve a clean, secure, and just energy future. But to realise this vision, we must act fast. – Project Syndicate

- *Francesco La Camera is Director-General of the International Renewable Energy Agency. Bruce Douglas is CEO of the Global Renewables Alliance.*

Greece Spearheads a Dynamic Energy Transition

Countries have different energy priorities due to factors like the availability of energy resources, geopolitics, the population size, environmental considerations and excessive use of energy, the needs of industry, and the availability of technology.

The most representative energy priorities among countries, including Greece, revolve around energy security, reduction of greenhouse gas emissions, affordability, and avoidance of deforestation. Construction of additional energy infrastructure and charging energy consumers with more taxes for excessive energy use constitute additional energy priorities. According to a market survey conducted by IPSOS in late 2022 that engaged 24 thousand people in 28 countries, the top energy priority was that of energy security followed by the development of cleaner energy sources, like wind and solar, and the affordability of energy.

The war on Ukraine brought energy security to the forefront of concerns for many regions, particularly Europe. Directly impacted countries, like Germany, have had to reactivate coal production and extend the operational lives of nuclear power plants to ensure efficient supply of energy to consumers.

Electricity Generation from Renewables

Despite challenges associated with the war on Ukraine, Greece has emerged more resilient by enhancing reform of its energy market and accelerating deployment of renewables in accordance with the National Climate Law of 2022. The Climate Law signals concrete milestones for Greece’s energy transition with most prevalent the reduction of greenhouse gas emissions by 55 percent by 2030 and, achievement of net zero emissions by 2050.

The Climate Law also foresees a total phase-out of lignite generated electricity by 2028. Notably, Greece ranks 2nd out of the 27 EU member states in the reduction of electricity generation from certain solid fossil fuels; lignite generated electricity decreased by 57,7 percent in the first 8 months of 2023 compared to the same period of 2019 according to the

Greek Independent Power Transmission Operator (IPTO).

The reduction of the use of solid fossil fuels has been offset by the accelerated development of renewable sources of energy, construction of critical energy infrastructure, and promotion of plans for Greece to position itself as key hydrogen hub in Europe. It is only in four years that Greece enhanced the installed capacity of renewable energy plants, accounting for 50 percent of electricity generation, with a clear target for electricity generation from renewables to reach 80 percent by 2030. The Greek solar photovoltaic market has gained most traction with 1.4 GW of new photovoltaic projects connected to the grid in 2022 and with anticipation of 10.9 GW to be added during the period of 2024-2027 according to the latest report by industry association Solar Power Europe.

The Offshore Wind Challenge

Wind energy in Greece has been surpassed by photovoltaics in new and total installations primarily due to delays in the licensing process. The largest onshore wind power plants include the 336 MW onshore Evia Wind Farm of Ellaktor located in Evia, Central Greece; the 330 MW Kafireas wind farm of Terna Energy on the island of Evia; and the 153MW Imathia Kozani Wind Farm under development by 547 Energy LLC, located in West Macedonia. Greece’s revised National Energy and Climate Plan (NECP) sets a clear target of 2 GW for onshore wind capacity and 2.7 GW for offshore wind capacity by 2030.

Greece swiftly moves forward to tap for the first time ever its offshore wind potential in pursuance of the national offshore wind farms development program that incorporates 25 eligible development areas in the Ionian, Aegean, and the East Mediterranean Seas.

An environmental impact assessment that has been completed by the Hellenic Hydrocarbons and Energy Resources Management Company includes maritime zones of over 2,712 square km where floating technology will be employed for the offshore wind farms in full compliance with environmental safeguards striking a balance between offshore wind energy, national security, and tourism.

Offshore wind energy falls under the creation and development of new markets along with carbon dioxide CO_2 capture and green hydrogen production.

Unlocking the CO_2 Storage Potential

Clean hydrogen can prove to be commercially viable due to the use of CO_2. CO_2 can be transported from where it is produced, via ship, truck or in a pipeline, and be used in commercial applications such as food and beverage production, metal fabrication, and cooling.

The majority of commercial applications center on the direct use of CO_2 by turning it into chemicals and construction materials. Liquid CO_2 can also be transported to an underground site where it can be permanently stored under strict environmental standards. The capture and storage of CO_2 contribute to the decarbonization of heavy industries and the development of clean hydrogen.

It is in this context that Greece swiftly moves to identify potential areas for CO_2 storage, with the most mature option being that of Prinos basin. Specifically, under Greek and European legal contexts, an exploration permit has been awarded to medium-sized Energean Oil & Gas for CO_2 storage in the depleted Prinos field evaluated as the best option because of its depth and structure.

Prinos is scheduled to be operational from the fourth Quarter of 2025 as small-scale project with capacity of up to 1 million tons (MT) of CO_2 annually and with plans to increase capacity from the fourth Quarter of 2027 up to 3 MT of CO_2 annually. Areas with saline aquifers, mafic rocks and oil and gas fields throughout Greek territory are evaluated as potential storage sites.

Prospects of a Hydrogen Hub for Europe

Green hydrogen production and transportation falls within the priorities of the Greek National Energy and Climate Plan. It is estimated that little investment is required, primarily in the form of developing compression stations, for the conversion of the existing national network to transport hydrogen. Extensive cross-border pipelines like Interconnector Greece-Bulgaria (IGB) and Trans Adriatic Pipeline (TAP) have the potential to transport hydrogen.

Proper energy infrastructure can guarantee that massive imports of hydrogen from the Middle East and North Africa are directed to Europe via Greece. The European Union has declared that as the Ukraine war goes on it will have to import 10 MT of renewable hydrogen annually until 2030.

The first major hydrogen project that meets demands of industrial production has been launched in the north-west of Saudi Arabia, in a region called NEOM, that has been declared an exclusive renewable and hydrogen zone. The Neom Green Hydrogen Company project constitutes an 8.4-billion-dollar green hydrogen and green ammonia production facility that will integrate 4 GW of wind and solar energy to produce 600 tons of carbon-free hydrogen per day. Large-scale production of renewable hydrogen from the NEOM region is expected to begin in 2026, and green hydrogen will be exported in the form of green ammonia.

Overall, Greece fosters an effective energy transition with a blend of renewable energy pathways and a match of CO2 storage and hydrogen transportation. It is with no doubt that important targets and deliverables are on the horizon.

Antonia Dimou

Antonia Dimou is Head of the Middle East Unit at the Institute

for Security and Defense Analyses, Greece; and, an Associate at the Center for Middle East Development, University of California, Los Angeles

---

Developing Countries Need Debt Relief to Act on Climate Change

While developed economies have pledged to increase climate financing sharply by 2030, developing-economy policymakers are struggling to cover the costs of action. With medium-term strategies being used to address a short-term threat, progress on the green transition will be undermined, with potentially catastrophic implications.

WASHINGTON, DC/PARIS – If developing economies found it hard to manage their debts in 2023, they are likely to face even more formidable challenges this year. Though most possess relatively small debt stocks and are not considered insolvent, many are in dire need of liquidity. As long as this remains true, they will struggle not only to manage their debts, but also to invest in the green transition.

Developing economies have faced a series of external shocks in recent years, including the COVID-19 pandemic, war-related disruptions of food and energy supply chains, and an uptick in global inflation. Moreover, their access to capital markets has been curtailed, preventing them from rolling over maturing loans, as they would do in normal times. As a result, countries have been forced to channel a large share of their tax and export revenues to service their debt, avoiding default at the cost of priorities like infrastructure investment, social-welfare programs, and climate action.

The outlook for these countries is likely to worsen in the next few years. According to estimates by the Finance for Development Lab (FDL), large debt payments are coming due in 2024 and 2026 for at least 20 low- and lower-middle-income countries. As countries hit this “debt wall,” their already fragile fiscal positions will deteriorate further. This does not bode well for climate action.

Climate change is not some distant menace; its effects are already being felt worldwide, especially in climate-vulnerable developing economies. But international summits on the topic last year sent a disappointing message: while developed economies pledged to increase climate financing by 2030, developing-economy policymakers are struggling against severe fiscal constraints. With medium-term strategies being used to address a short-term threat, developing and emerging economies have been expressing frustration, including at the Summit for a New Global Financing Pact that was held in Paris last June.

Multilateral development banks can provide an essential lifeline, but their capacity would have to be strengthened – and quickly. According to World Bank data, the new concessional loans the world’s poorest countries received from MDBs in 2022 were smaller than these countries’ debt-service payments, a large share of which went to private and bilateral creditors. Increasing capital flight from the developing world – driven not least by monetary tightening in advanced economies – will intensify the needs of illiquid lower-income countries.

But it is not only a matter of financial capacity. MDBs have so far been inconsistent, at best, when it comes to supporting countries struggling to repay their debts. For example, both Kenya and Ethiopia have been under pressure to repay their private and Chinese creditors, which are now collecting more in debt-service payments than they are providing in new loans. But only Kenya received enough support from the International Monetary Fund, the World Bank, and others to refinance its debt that is maturing this year.

By contrast, assistance to Ethiopia has declined in recent years. As a result, Ethiopia recently defaulted on its external debt, even though it amounts to just 25% of GDP. While the Kenya approach is not the solution – providing similar levels of support to all illiquid countries would require a tripling of MDB flows – this is clearly unacceptable.

A better approach would focus on closing the gap between short-term debt concerns and long-term investment needs, by unlocking net-positive inflows for countries facing liquidity constraints. As the FDL has proposed, an agreement among debtors, creditors, and MDBs to permit countries to reschedule debts coming due – delaying maturities by 5-10 years – would create fiscal space for climate-friendly investments, financed by MDBs.

For this liquidity bridge to work, MDBs would have to accelerate progress on implementing existing reform plans and increase funding substantially, while the IMF helps manage debt-rollover risks. Importantly, private and bilateral creditors would have to agree to the rescheduling. That is why, compared to the Debt Service Suspension Initiative that the G20 introduced in 2020, the proposal includes stronger incentives for private-sector creditors to participate, in addition to longer time horizons.

There are good reasons to believe that creditors can be convinced to join the program voluntarily. It is, after all, in their best interest to remain invested in solvent countries with strong growth prospects; no one benefits from debt crises like those that have ensnared Zambia and Sri Lanka. In any case, creditors would continue receiving interest payments, and as global interest rates fall and economic-growth prospects improve in the coming years, debtors may well be able to return to capital markets and resume repayment of the principal.

Shaping a workable blueprint along these lines is a task for upcoming international gatherings, such as the G20 summit in Brazil later this year. Logistical and financial coordination will be needed to ensure sufficient liquidity. Coordination among the IMF, the World Bank, and regional development banks will also be essential to ensure that participating debtor countries pursue investments that genuinely support green growth.

If nothing is done to help countries facing liquidity crises, the world will risk a wave of destabilizing debt defaults, and progress on the green transition will be severely undermined, with catastrophic implications for the entire world. Because promising solutions like the liquidity bridge can prevent such outcomes, they deserve broad global support.

UN climate chief calls for $2.4tn inclimate finance

The world needs to mobilise at least $2.4tn to keep global climate change goalswithin reach, the United Nations climate chief said in a speech yesterday.
Simon Stiell, executive secretary of the UN Framework Convention on ClimateChange (UNFCCC), addressed a group of students at the Azerbaijan DiplomaticAcademy in Baku, host of the COP29 climate summit in November, laying out thesteps that need to be taken this year to turn the commitments made at last year'ssummit in Dubai into reality.
This was Stiell's first major speech since the UN gathering in Dubai, where nearly200 countries agreed to begin a transition away from fossil fuels to avert the worstimpacts of climate change.
"It's clear that to achieve this transition, we need money, and lots of it – $2.4tn, ifnot more", excluding China, Stiell said in prepared remarks, citing a reportreleased in December from the High-Level Expert Group on Climate Finance.
"Whether on slashing emissions or building climate resilience, it's alreadyblazingly obvious that finance is the make-or-

break factor in the world’s climatefight – in quantity, quality, and innovation,” he said. “In fact, without far morefinance, 2023’s climate wins will quickly fizzle away into more empty promises.”
Climate finance will be the main focus of the Azerbaijan-hosted talks, wheregovernments will be tasked with setting a new target post-2025 for raising moneyto support developing country efforts to cut emissions and adapt to the worseningimpacts of climate change.
Setting a new financial goal will be challenging given that countries only met lastyear a goal set in 2009 to mobilise $100bn a year in climate finance by 2020.
“It’s already blazingly obvious that finance is the make-or-break factor in theworld’s climate fight,” he said, adding that without more finance, the winsachieved at the COP28 Dubai summit will fizzle out.
Stiell said that the year should be spent ensuring that the global financial systemand multilateral banks can meet the task of ramping up climate finance, and urgedbanks to triple the amount of climate grants and concessional finance by 2030and triple the rate of private capital they mobilise.
More broadly, he cautioned against taking “victory laps” after the UAE agreement,saying that the political agreement reached in Dubai enables countries to hidebehind “loopholes”.

“The action we take in the next two years will shape how much climate-drivendestruction we can avoid over the next two decades, and far beyond,” he said.
The world is currently far off track in delivering on its cornerstone climate deal,agreed in Paris in 2015.
Under the Paris Agreement, world leaders pledged to keep the rise in Earth’saverage temperature to “well below” 2.0° Celsius above the pre-industrial leveland preferably the much safer threshold of 1.5C.
The 2020s are critical for keeping that 1.5C target in view, with UN climate expertsestimating that planet-heating greenhouse gas emissions need to be slashed bysome 43% by

2030.
There is progress, with a surge in clean energy technologies like solar, wind andbatteries, as well as electric vehicles.
However, emissions continue to rise.
A key challenge that is likely to take centre stage at this year’s climate talks inBaku, as well as meetings of the World Bank and International Monetary Fund(IMF), is how to support emerging economies manage and pay for their transitionto clean energy.
Many of these nations are currently mired in debt and facing a raft of challenges,from inflation to growing climate impacts.
Meanwhile global warming continues, with 2023 confirmed as the hottest everrecorded and experts warning 2024 could be even hotter.
The Earth is now about 1.2C warmer than it was in the 1800s.
This is already having an accelerating impact on people and ecosystems acrossthe planet, from heatwaves and droughts, to devastating floods and storms.
A damning appraisal of countries’ decarbonisation efforts so far, released lastyear, showed the world heading for catastrophic planetary heating.
Stiell conceded it would take an “Olympian effort” to get the world on track.
One key task for countries will be to outline a new round of national climatetargets for 2035 ahead of a pivotal COP30 meeting, due to be held in Brazil in2025.
These pledges should be strengthened to align with the 1.5C goal, cover thewhole economy and all greenhouse gases, Stiell said.
“The action we take in the next two years will shape how much climate-drivendestruction we can avoid over the next two decades, and far beyond,” he added.

Climate change march: From Paris to Glasgow

The latest IPCC report shows that we are dangerously close to 1.5C already. Every fraction of a degree matters

The COP26 climate conference will be a clarifying moment, poised between global co-operation and competition. As one of the key French officials tasked with delivering a deal at COP21 in Paris in 2015, I can attest to the weight of expectations placed upon this year’s hosts, Italy and the United Kingdom.
The summit in Glasgow this November is by far the most fraught meeting of governments since Paris. Paradoxically, greater global integration continues alongside emerging fault lines, including the injustices of the Covid-19 pandemic and a growing desire for inward, nationalistic policies.
While global trade is on track to increase by 8% this year, after falling by 5.3% in 2020, the rollout of medical supplies

along global supply chains has exposed deep sources of antagonism and rivalry. The issue of vaccine solidarity – compounded by wealthy countries earmarking trillions for their own economic recoveries – has seriously strained multilateral ties. COP26 is approaching under a cloud of tension.

This year's conference will test the spirit of co-operation that emerged in Paris, where – after several abortive efforts – 196 governments adopted the historic Paris accord and made "net zero" a geopolitical reality. The agreement has since provided the organising principle for all climate action – one that nation states, regions, cities, businesses, investors, civil society, and individuals all had a voice in, and can all act upon. This was people-powered multilateralism at its best.

Six years later, we ought to be seeing a positive domino effect of bold pledges from states. Instead, we are watching a nervous game of poker. As with vaccines, wealthier countries are not sharing their wealth and technology.

Tellingly, the international community still has not met the Paris agreement's target of $100bn per year for supporting climate investments in developing countries. This figure is a threshold, not an end goal: it is essential that we clear this hurdle for all parties at COP26 to know that wealthy countries mean business and are sincere in their solidarity.

Equally concerning is the absence of specifics for how G20 countries intend to meet abstract net-zero targets. Many remain fully locked into fossil fuels. Since these economies account for almost 80% of worldwide emissions, they must start including more concrete, comprehensive decarbonisation planning as part of their Nationally Determined Contributions (NDCs) under the Paris agreement.

The European Commission's new Fit for 55 plan shows how this can be done in a detailed, sector-specific way. Unfortunately, the European Union is the exception. Everyone else is still playing poker, even as the room fills up with water.

Just this year, climate-driven disasters have struck Brazil, Canada, Madagascar, China, Germany, Russia, the United States, and many others. There is no need to recall every cataclysmic

weather event, because it is already sufficient to say that the problem has broken beyond our readiness.
As climate modelling improves, the path to remaining within 1.5C of warming is narrowing before our eyes. In early August, the latest report from the Intergovernmental Panel on Climate Change (IPCC) showed that we are dangerously close to 1.5C already. Every fraction of a degree matters. The differences between a 1.5C world and a 2C world would be dramatic.
When we were negotiating the Paris agreement, the preceding G20 gathering was similarly fraught – some might say disastrous. Many felt the COP21 was doomed to fail as a result. But after weeks of intense work and dialogue, the Paris summit managed to exceed most expectations, mine included.
How can the UK and Italy steer the talks toward another successful outcome? If the parallels with 2015 offer any indication, the key for this final “sprint” is to emphasise that no-one, and no single country, can tackle the climate crisis alone. Because every single party to the United Nations Framework Convention on Climate Change has an equal say, any single signatory can cause negotiations to stumble. Good faith dialogue, concrete plans, and serious means to finance them are the only way forward.
There are some recent positive developments to build on. Earlier this year, South Korea and Japan – respectively the world’s second- and third-largest coal financiers after China – both pledged to end their public coal investments abroad.
But there are also clear areas where governments have more work to do. According to the International Energy Agency, staying on track for net-zero emissions by 2050 requires that no new coal, oil, or gas projects be started after 2021. That means all of the world’s largest emitters must immediately end coal investments abroad and clarify how they will phase out their own use of coal.
Only a sincere spirit of multilateralism can solve the imbalance at the heart of the climate crisis, the impacts of which are profoundly unfair. Countries that are hardly

responsible for the problem’s escalation are the ones facing the most severe, often existential risks. Why would small island states negotiate themselves into submersion?

The Paris agreement was only possible because of its commitment to multilateralism, and this remains the best guide to ensuring its relevance. It is telling that soon after a G20 climate meeting delivered few tangible positives this year, the world’s Least Developed Countries issued a statement calling on their wealthier counterparts to “take responsibility.”

Sovereign, competitive impulses will always strain the space for cooperation. But within that space, there are ample opportunities to achieve positive-sum outcomes – in technological innovation and adoption, for example. These instincts are rooted in the national interest, and thus should be responsive to the fearsome, increasing prospect of overshooting 1.5C.

In this spirit, some concrete steps to defuse tensions at COP26 would include a dedicated item for meaningful discussions on “loss and damage,” while this summer’s ferocious weather events still loom large in everyone’s memory. The conference also must press the issue of financing for climate adaptation efforts as part of the broader drive to meet the minimum $100bn per year target. Finally, G20 countries that have not delivered their NDCs must do so as soon as possible, demonstrating that their policies are sufficient to keep the world on a 1.5C pathway.

G20 countries anxious to promote their role as climate leaders must listen carefully to the warnings from others, particularly those on the front lines. If we see momentum on these fronts between now and November, the UK and Italy could herald COP26 as a success, keeping the 1.5C goal in our sights. – Project Syndicate

l Laurence Tubiana, a former French ambassador to the United Nations Framework Convention on Climate Change, is CEO of the European Climate Foundation and a professor at Sciences Po, Paris.

Cheap imports threaten US solar panel production boom

US companies have announced plans to build dozens of solar panel factories across the country since last year when President Joe Biden's signature climate law unleashed billions of dollars of subsidies, raising hopes a clean energy boom can provide tens of thousands of good paying jobs.

But global solar panel prices have collapsed due to a wave of new Asian production capacity in recent months, leading many in the US solar industry to worry many of these proposed factories may be uneconomical. As many as half may soon be delayed or canceled, a figure not previously reported, according to Reuters interviews with industry analysts, solar companies, and trade groups.

Changing market forces have already derailed solar manufacturing operations in Europe. In recent days, the US race for a clean energy transition has already been hit by huge writedowns and project cancellations the offshore wind industry.

“The more prices decline in the global market, the more difficult it is to build US local manufacturing,” said Edurne Zoco, executive director for clean energy technology at S&P Global Commodity Insights. “If the cost gap between imported modules and locally manufactured modules is too big … many of these announcements might not happen.”

Solar shipments into the US more than doubled through August to $10bn from about $4bn a year earlier, according to the US International Trade Commission.

The domestic industry’s souring outlook could hurt Biden’s climate agenda and hinder reelection efforts for a president who has hailed solar project plans as proof his clean energy policies can create millions of good-paying jobs.

US solar manufacturers and trade groups have said they need more government help at the federal and state levels or those jobs may not materialise, and the US will keep relying on panels made with mainly Chinese components. US officials have repeatedly warned that over-reliance on Chinese clean energy technology could pose a security risk similar to Europe’s historical dependence on Russian natural gas.

A White House spokesperson did not respond to questions about recent market challenges facing domestic solar manufacturers, but said Biden’s policies had generated a huge wave of investment and were revitalising American manufacturing.

Companies have announced over three dozen solar factories since passage of the Inflation Reduction Act in August 2022 that collectively promised to create 17,000 jobs and bring in nearly $10bn in investment, according to projects tracked by the clean energy business advocacy group E2.

Of eight solar company representatives, trade groups and researchers who spoke to Reuters, all eight agreed the market has worsened. Energy research firm Wood Mackenzie shared its new forecast that just 52% of the 112 gigawatts of solar module capacity companies planned will be online by the target date of 2026, a projection it has not previously made public.

Mike Carr, executive director of the Solar Energy Manufacturers for America trade group, said factories could be delayed, extending US dependence on China.

“A misunderstanding of the policy opportunity here could really undermine a signature initiative of this administration, which is to restore manufacturing competitiveness to the United States, and particularly in such a key industry,” Carr said.

Globally, the solar industry has already absorbed a 26% drop in panel prices this year to about 19 cents per watt, according to S&P Global Commodity Insights. US prices have been more resilient, but SEMA and analysts say spot prices are declining for those without long-term contracts.

The increase in solar imports stems partly from a temporary waiver of tariffs on Malaysia, Thailand, Cambodia and Vietnam, which expires in June, 2024. Imports are also up sharply from India, Mexico and other nations unaffected by that move.

The IRA provides a decade of tax incentives worth 30% of a project’s cost. But industry consultant Brian Lynch said that could be outweighed by the glut of cheap panels and worries about rising costs for labor, raw materials and financing.

“It’s almost like Dr Jekyll and Mr. Hyde. The incentives to site and open up a US factory are phenomenal,” Lynch said. “But if pricing is going to continue to go down, if the continued gamesmanship on the trade is going to continue, they can’t justify it.”

The US Commerce Department said imported panels and cells remained important to the clean energy transition.

“Commerce is committed to holding foreign producers accountable to playing by the same rules as US producers,” a Commerce spokesperson said.

The IRA also contains a 10% bonus credit for panel manufacturers using American-made components. This perk is critical for domestic panels that may command a 40% price premium to imported alternatives, according to Wood Mackenzie. But so few components are produced domestically that much of the industry cannot secure that bonus. So far, solar module factory announcements have been more than double those for solar cells, the crucial components that transform sunlight into energy.

The industry needs more government help, including “the right tax and trade policies that build on the IRA and similar state laws that create the space for emerging US solar manufacturers to compete on a global scale,” said Danny O’Brien, president of corporate affairs at Hanwha Qcells, which is making one of the largest investments in the domestic solar supply chain.

Meyer Burger, which plans to build a factory in Colorado, said the government needs to help domestic manufacturers deal with “underpriced products that are coming from Asia”.

The Solar Energy Industries Association (SEIA), a large solar trade group that has long opposed tariffs, is also advocating for more support for manufacturers, warning it does not expect that every proposed factory will be built.

Convalt Energy plans next year to open 2 gigawatts of module capacity in New York and Maine followed by a facility for components in 2025. CEO Hari Achuthan said module production lines are already about four months behind schedule because the company’s financiers are waiting for the Treasury Department to issue crucial rules on how to secure the IRA tax credits.

“Our country has done a phenomenal job seeing through the IRA bill. But now it’s going to come down to the details of the IRA and how we execute it and the support that we need to get from the Commerce Department and anybody else with regard to tariffs on imports,” he said. — Reuters

Climate's 'Catch-22': Cutting pollution heats up planet

Air pollution, a global scourge that kills millions of people a year, is shielding us from the full force of the sun. Getting rid of it will accelerate climate change.

That's the unpalatable conclusion reached by scientists poring over the results of China's decade-long and highly effective "war on pollution", according to six leading climate experts.

The drive to banish pollution, caused mainly by sulphur dioxide (SO2) spewed from coal plants, has cut SO2 emissions by close to 90% and saved hundreds of thousands of lives, Chinese official data and health studies show.

Yet stripped of its toxic shield, which scatters and reflects solar radiation, China's average temperatures have gone up by 0.7 degrees Celsius since 2014, triggering fiercer heatwaves, according to a Reuters review of meteorological data and the scientists interviewed.

"It's this Catch-22," said Patricia Quinn, an atmospheric chemist at the US National Oceanic and Atmospheric

Administration (NOAA), speaking about cleaning up sulphur pollution globally. “We want to clean up our air for air quality purposes but, by doing that, we’re increasing warming.”

The removal of the air pollution – a term scientists call “unmasking” – may have had a greater effect on temperatures in some industrial Chinese cities over the last decade than the warming from greenhouse gases themselves, the scientists said.

Other highly polluted parts of the world, such as India and the Middle East, would see similar jumps in warming if they follow China’s lead in cleaning the skies of sulphur dioxide and the polluting aerosols it forms, the experts warned.

They said efforts to improve air quality could actually push the world into catastrophic warming scenarios and irreversible impacts.

“Aerosols are masking one-third of the heating of the planet,” said Paulo Artaxo, an environmental physicist and lead author of the chapter on short-lived climate pollutants in the most recent round of reports by the Intergovernmental Panel on Climate Change (IPCC), completed this year.

“If you implement technologies to reduce air pollution, this will accelerate – very significantly – global warming in the short term.”

The Chinese and Indian environment ministries didn’t immediately respond to requests for comment on the effects of pollution unmasking.

The link between reducing sulphur dioxide and warming was flagged by the IPCC in a 2021 report which concluded that, without the solar shield of SO2 pollution, the global average temperature would already have risen by 1.6 degrees Celsius above preindustrial levels.

That misses the world’s goal of limiting warming to 1.5C, beyond which scientists predict irreversible and catastrophic changes to the climate, according to the IPCC, which pegs the current level at 1.1C.

The Reuters review of the Chinese data provides the most detailed picture yet of how this phenomenon is playing out in the real world, drawing on previously unreported numbers on changes in temperatures and SO2 emissions over the past decade and corroborated by environmental scientists.

Reuters interviewed 12 scientists in total on the phenomenon of unmasking globally, including four who have acted as authors or reviewers of sections on air pollution in IPCC reports.

They said there was no suggestion among climate experts that the world should let-up on fighting air pollution, a clear and present danger that the World Health Organisation says causes about 7mn premature deaths a year, mostly in poorer countries.

Instead they stressed the need for more aggressive action to cut emissions of climate-warming greenhouse gases, with reducing methane seen as one of the most promising paths to offset pollution unmasking in the short term.

President Xi Jinping pledged to tackle pollution when he took power in 2012 following decades of coal-burning that had helped turn China into “the factory of the world”. The following year, as record smog in Beijing inspired “Airpocalypse” newspaper headlines, the government unveiled what scientists called China’s version of the US Clean Air Act.

On March 5, 2014, a week after Xi went on a walkabout during another extreme bout of smog in the capital, the government officially declared a war on pollution at the National People’s Congress.

Under the new rules, power plants and steel mills were forced to switch to lower-sulphur coal. Hundreds of inefficient factories were shuttered, and vehicle fuel standards toughened up. While coal continues to be China’s largest power source, smokestack scrubbers now strip out most SO2 emissions.

China’s SO2 emissions had decreased from a 2006 peak of at nearly 26mn metric tons to 20.4mn tons in 2013 thanks to more gradual emissions restrictions. But with the war on pollution, those emissions had plummeted by about 87% to 2.7mn metric tons by 2021.

The drop in pollution was accompanied by a leap in warming –

the nine years since 2014 have seen national average annual temperatures in China of 10.34C, up more than 0.7C compared with the 2001-2010 period, according to Reuters calculations based on yearly weather reports published by the China Meteorological Administration.

Scientific estimates vary as to how much of that rise comes from unmasking versus greenhouse gas emissions or natural climate variations like El Nino.

The impacts are more acute at a local level near the pollution source. Almost immediately, China saw big warming jumps from its unmasking of pollution near heavy industrial regions, according to climate scientist Yangyang Xu at Texas A&M University, who models the impact of aerosols on the climate.

Xu told Reuters he estimated that unmasking had caused temperatures near the cities of Chongqing and Wuhan, long known as China’s “furnaces”, to rise by almost 1C since sulphur emissions peaked in the mid-2000s.

During heatwaves, the unmasking effect can be even more pronounced. Laura Wilcox, a climate scientist who studies the effects of aerosols at Britain’s University of Reading, said a computer simulation showed that the rapid decline in SO_2 in China could raise temperatures on extreme-heat days by as much as 2C.

“Those are big differences, especially for somewhere like China, where heat is already pretty dangerous,” she said.

Indeed, heatwaves in China have been particularly ferocious this year. A town in the northwestern region of Xinjiang saw temperatures of 52.2C (126F) in July, shattering the national temperature record of 50.3C set in 2015.

Beijing also experienced a record heatwave, with temperatures topping 35C (95F) for more than four weeks.

The effects of sulphur unmasking are most pronounced in developing countries, as the US and most of Europe cleaned up their skies decades ago. While the heat rise from sulphur cleanup is strongest locally, the effects can be felt in far-distant regions. One 2021 study co-authored by Xu found that a decrease in European aerosol emissions since the 1980s may

have shifted weather patterns in Northern China.
In India, sulphur pollution is still rising, roughly doubling in the last two decades, according to calculations by NOAA researchers based on figures from the US-funded Community Emissions Data System.
In 2020, when that pollution plummeted due to Covid lockdowns, ground temperatures in India were the eighth warmest on record, 0.29 C higher than the 1981-2010 average, despite the cooling effects of the La Nina climate pattern, according to the India Meteorological Department.
India aims for an air cleanup like China’s, and in 2019 launched its National Clean Air Programme to reduce pollution by 40% in more than 100 cities by 2026.
Once polluted regions in India or the Middle East improve their air quality by abandoning fossil fuels and transitioning to green energy sources, they too will lose their shield of sulphates, scientists said.
“You stop your anthropogenic activities for a brief moment of time and the atmosphere cleans up very, very quickly and the temperatures jump instantaneously,” added Sergey Osipov, a climate modeller at the King Abdullah University of Science and Technology in Saudi Arabia.
As the implications of the pollution unmasking become more apparent, experts are casting around for methods to counter the associated warming.
One proposal called “solar radiation management” envisions deliberately injecting sulphur aerosols into the atmosphere to cool temperatures. But many scientists worry that the approach could unleash unintended consequences.
A more mainstream plan is to curb methane emissions. This is seen as the quickest way to tame global temperatures because the effects of the gas in the atmosphere last only a decade or so, so cutting emissions now would deliver results within a decade. Carbon dioxide, by comparison, persists for centuries.
As of 2019, methane had caused about 0.5C in warming compared with preindustrial levels, according to IPCC figures.
While more than 100 countries have pledged to reduce methane

emissions by 30% by the end of the decade, few have gone further than drawing up “action plans” and “pathways” to cuts. China — the world’s biggest emitter — has yet to publish its plan.
By targeting methane, the world could mitigate the warming effect of the reduction in pollution and potentially avert catastrophic consequences, said Michael Diamond, an atmospheric scientist at Florida State University.
“This doesn’t doom us to going above 1.5 degrees Celsius if we clean up the air.”

What can COP28 achieve?

COP season is almost here. For the climate-conscious, the annual Conference of the Parties of the UN Framework Convention on Climate Change (UNFCCC) is a fixture of the late-year calendar and an opportunity to take stock of our goals, needs, and achievements. We spend two weeks preoccupied with a distant event hoping that negotiators will make meaningful progress toward mitigating the climate threat. But to keep our expectations for COP28 realistic, we must understand what a COP can and cannot do.

We are steadily decarbonising our economies. Within a decade, wind and solar power will be the major sources of electricity, and sales of electric vehicles (EVs) are likely to overtake those with internal combustion engines. According to the International Energy Agency, the world’s fossil-fuel consumption will start falling by 2030. Though this is probably too late to limit the global temperature increase to 2C, let alone 1.5C, above pre-industrial levels, it is sooner than one would have expected only a short time ago.

But little of this progress is directly attributable to COPs, including COP21 in 2015, from which the Paris climate agreement emerged. In fact, the Paris agreement specifies nothing about EVs or wind or solar power. Instead, it is Tesla that is responsible for the growth of EV sales: the commercial success of the company’s Model S drove other high-end automakers to develop the competitive products which are now debuting.

Is there any connection between COPs and Tesla’s success? If there is, it is not direct. During its early growth stages, Tesla benefited greatly from the United States’ Corporate Average Fuel Economy (CAFE) regulations, which enabled it to sell zero-emissions credits to other manufacturers. The revenues from ZEC sales sometimes surpassed those of car sales.

The CAFE regulations date back to 1975, two decades before the first COP was held. They have, however, been tightened over time, a process that might partly reflect increased awareness, fostered by the COPs, of the climate challenge. Similarly, the COPs might have encouraged the subsidies, in both the US and the European Union, from which Tesla has benefited more recently, after it had already become a major force in the auto industry.

As for solar and wind, the sharp decline in costs has driven their dramatic growth. From 2009 to 2019, the cost of solar power fell from $0.36 per kilowatt-hour to $0.03. This decline is attributable to two main factors: economies of scale, which lowered the costs of producing each silicon wafer, and learning by doing, which led to more efficient – and thus cheaper – manufacturing processes. Both factors sustain a virtuous cycle: as the use of solar power increases, costs come down, further accelerating the adoption of solar power.

This process was kicked off by Germany's adoption of generous feed-in tariffs for solar power in 2000. The Chinese government subsequently began investing heavily in solar, which it identified as a strategically important industry. Again, these important policy moves could have been encouraged by the increased awareness of climate change that they generate at COP meetings.

For offshore wind, the decline in costs has been driven largely by Orsted and Equinor, two Scandinavian companies that leveraged their offshore oil and gas expertise to develop offshore wind farms, which use many of the same technologies. Government subsidies helped the nascent technology to become commercially viable.

In short, progress on decarbonisation has primarily reflected technological breakthroughs brought about by for-profit ventures with the help and guidance of supportive government policies. Those policies might have been crystallised by the discussions at, and publicity surrounding, the COPs, though they were not the result of specific directives from those meetings or contained in the Paris agreement.

So, what should we hope emerges from COP28? COPs can produce two types of positive outcomes. The first are "big picture" outcomes, such as maintaining pressure on governments and corporations to reduce emissions. Here, it is important not only to reiterate the importance of reaching zero emissions and highlight how far we have yet to go, but also to recognise the progress that has already been made.

The second type of outcome is more granular. This year's COP must mark the beginning of a process that will clarify what constitutes a valid carbon offset. Many corporations are currently expecting to reduce, but not eliminate, their emissions, on the assumption that they can buy carbon offsets to take them to net-zero. But the world obviously cannot get to zero emissions – the ultimate goal – if anyone is still emitting.

Equally important, it has lately become clear that many voluntary carbon offsets are worthless, as they do not meet the standard of additionality (the guarantee that the relevant emissions reductions would not have occurred without support from carbon credit sales) or avoid leakage (the shifting of emissions elsewhere). An international body must set clear standards for the validity of offsets and impose limits on their use, and the UNFCCC is the obvious candidate.

COP28 has the potential to encourage further climate action, including the introduction or strengthening of policies that can lead to emissions-reducing technological breakthroughs, as well as to deliver a much-needed rulebook on important technical issues, such as the use of offsets. Whether it succeeds depends entirely on execution. – Project Syndicate

- *Geoffrey Heal is Professor of Social Enterprise at Columbia Business School and a professor at Columbia University's School of International and Public Affairs.*

Human-centric globalization: Taking G20 to the Last Mile,

leaving none behind

Vasudhaiva Kutumbakam – these two words capture a deep philosophy. It means 'the world is one family.' This is an all-embracing outlook that encourages us to progress as one universal family, transcending borders, languages and ideologies. During India's G20 presidency, this has translated into a call for human-centric progress. As One Earth, we are coming together to nurture our planet. As One Family, we support each other in the pursuit of growth. And we move together towards a shared future – One Future – which is an undeniable truth in these interconnected times.

The post-pandemic world order is very different from the world before it. There are three important changes, among others.

First, there is a growing realization that a shift away from a GDP-centric view of the world to a human-centric view is needed.

Second, the world is recognizing the importance of resilience and reliability in global supply chains.

Third, there is a collective call for boosting multilateralism through the reform of global institutions.

Our G20 presidency has played the role of a catalyst in these shifts.

In December 2022, when we took over the presidency from Indonesia, I had written that a mindset shift must be catalyzed by the G20. This was especially needed in the context of mainstreaming the marginalized aspirations of developing countries, the Global South and Africa.

The Voice of Global South Summit in January 2023, which witnessed participation from 125 countries, was one of the foremost initiatives under our presidency. It was an important exercise to gather inputs and ideas from the Global South. Further, our presidency has not only seen the largest-ever participation from African countries but has also pushed for the inclusion of the African Union as a permanent member of the G20.

An interconnected world means our challenges across domains are interlinked. This is the midway year of the 2030 Agenda and many are noting with great concern that the progress on SDGs is off-track. The G20 2023 Action Plan on Accelerating Progress on SDGs will spearhead the future direction of the G20 towards implementing the SDGs.

In India, living in harmony with nature has been a norm since ancient times and we have been contributing our share towards climate action even in modern times.

Many countries of the Global South are at various stages of development and climate action must be a complementary pursuit. Ambitions for climate action must be matched with actions on climate finance and transfer of technology.

We believe there is a need to move away from a purely restrictive attitude of what should not be done, to a more constructive attitude focusing on what can be done to fight climate change.

The Chennai High-Level Principles for a Sustainable and Resilient Blue Economy focus on keeping our oceans healthy.

A global ecosystem for clean and green hydrogen will emerge from our presidency, along with a Green Hydrogen Innovation Center.

In 2015, we launched the International Solar Alliance. Now, through the Global Biofuels Alliance, we will support the world to enable energy transitions in tune with the benefits of a circular economy.

Democratizing climate action is the best way to impart momentum to the movement. Just as individuals make daily decisions based on their long-term health, they can make lifestyle decisions based on the impact on the planet's long-term health. Just like yoga became a global mass movement for wellness, we have also nudged the world with Lifestyles for Sustainable Environment (LiFE).

Due to the impact of climate change, ensuring food and nutritional security will be crucial. Millets, or Shree Anna, can help with this while also boosting climate-smart agriculture. In the International Year of Millets, we have taken millets to global palates. The Deccan High Level Principles on Food Security and Nutrition is also helpful in this direction.

Technology is transformative but it also needs to be made inclusive. In the past, the benefits of technological advancements have not benefited all sections of society equally. India, over the last few years, has shown how technology can be leveraged to narrow inequalities, rather than widen them.

For instance, the billions across the world that remain unbanked, or lack digital identities, can be financially included through digital public infrastructure (DPI). The solutions we have built using our DPI have now been recognized globally. Now, through the G20, we will help developing countries adapt, build and scale DPI to unlock the power of inclusive growth.

That India is the fastest-growing large economy is no accident. Our simple, scalable and sustainable solutions have empowered the vulnerable and the marginalized to lead our development story. From space to sports, economy to entrepreneurship, Indian women have taken the lead in various sectors. They have shifted the narrative from the development of women to women-led development. Our G20 presidency is working on bridging the gender digital divide, reducing labor force participation gaps and enabling a larger role for women in leadership and decision-making.

For India, the G20 presidency is not merely a high-level diplomatic endeavor. As the Mother of Democracy and a model of diversity, we opened the doors of this experience to the world.

Today, accomplishing things at scale is a quality that is associated with India. The G20 presidency is no exception. It has become a people-driven movement. Over 200 meetings will have been organized in 60 Indian cities across the length and breadth of our nation, hosting nearly 100,000 delegates from 125 countries by the end of our term. No presidency has ever encompassed such a vast and diverse geographical expanse.

It is one thing to hear about India’s demography, democracy, diversity and development from someone else. It is totally different to experience them first-hand. I am sure our G20 delegates would vouch for this.

Our G20 presidency strives to bridge divides, dismantle barriers and sow seeds of collaboration that nourish a world where unity prevails over discord, where shared destiny eclipses isolation. As the G20 president, we had pledged to make the global table larger, ensuring that every voice is heard and every country contributes. I am positive that we have matched our pledge with actions and outcomes.

ABU DHABI — Faced with mounting pressure over planet-heating pollution, Gulf Arab energy giants are turning to humble tech start-ups as they search for ways to remove emissions while keeping oil flowing.

Oil producers have for years touted capturing carbon before it goes into the atmosphere as a potential global warming solution, against criticism from climate experts who say it risks distracting from the urgent goal of slashing fossil fuel pollution.

With little investment and few projects in operation around the world so far, the technology is currently nowhere near the scale needed to make a difference to global emissions.

Now, major players from Saudi Aramco to the United Arab Emirates' state oil and gas firm Abu Dhabi National Oil Company (Adnoc) say that is about to change, as the UAE hosts climate negotiations this year with a message of cutting emissions rather than fossil fuels.

"For the industry and for countries as well to achieve net zero by 2050, I don't see us achieving this without embracing carbon capture," Mr Musabbeh Al Kaabi, Adnoc's executive director of low-carbon solutions, told Agence France-Presse.

"I would love to see more wind and solar energy, but to be practical and transparent, it's not going to solve the problem."

Carbon capture was a hot topic at a recent climate tech conference in Abu Dhabi, UAE's capital.

Start-ups displayed their advances in carbon capture and storage (CCS), which removes carbon dioxide (CO_2) as it is pumped from power plants and heavy industry.

There were also companies presenting their plans for direct air capture, a newer technology that extracts CO_2 directly from the atmosphere.

The United Nation's Intergovernmental Panel on Climate Change (IPCC) says the existing fossil fuel infrastructure – without the use of carbon capture – will push the world beyond the Paris deal's safer global warming limit of 1.5 deg C above pre-industrial levels.

Industrial smokestacks

The debate between whether to primarily target fossil fuels or emissions is shaping as a key battleground at the COP28 climate talks, which will be held in UAE financial hub Dubai.

Citing the IPCC, the COP28 president-designate, Sultan Ahmed Al Jaber – Adnoc's chief executive and his country's climate envoy – last week said it was time to "get serious about carbon capture".

But environmentalists are sceptical about the central role that big energy companies are seeking in climate solutions, saying they have a vested interest in maintaining fossil fuel sales.

Greenpeace Mena (Middle East and North Africa) programme director Julien Jreissati labelled it a "distraction".

Adnoc's Mr Kaabi, however, argued that the oil giant's engineering capabilities and deep pockets make them best placed to propel climate tech.

"The world has two options: We could leave it to the small players or have the big players accelerating this decarbonisation," Mr Kaabi said.

In 2016, Adnoc launched the region's first commercial-scale CCS project, Al Reyadah, which has the capacity to capture 800,000 tonnes of CO2 per year.

Globally, there are only around 35 commercial facilities using carbon capture utilisation and storage globally, according to the International Energy Agency, which says even those planned until 2030 would capture only a fraction of the emissions needed.

‘We need to move quicker’

The entrepreneurs at the UAE conference included Omani company 44.01, a winner of Britain’s Earthshot Prize for its technology that permanently removes CO2 from the air by mineralising it in peridotite rock.

“Climate change is an urgent challenge and for us to be able to tackle that challenge we need to move quicker,” said 44.01 CEO Talal Hasan.

“The oil and gas partnerships help us move quickly,” he told AFP.

Mr Hasan’s 44.01 has partnered Adnoc to develop a carbon capture and mineralisation site in Fujairah, one of the UAE’s seven emirates – the first such project by an energy company in the Middle East.

“In one tonne of peridotite, you could probably mineralise 500 to 600 kilograms of CO2… this means that with the rocks just in this region, you could potentially mineralise trillions of tons,” he said.

For Mr Hasan, energy companies are good partners because “we use a lot of the same equipment, infrastructure, people and resources”.

“That will help us accelerate scaling,” he said, arguing that the speed of execution is “very important”.

State-owned Saudi Aramco, one of the world’s richest companies, has invested in Carbon Clean, a British-based company that has developed compact technology that captures carbon from industrial smokestacks.

The company, which has 49 sites around the world, will deploy its latest technology in the UAE this year – its first project in the Middle East.

When asked about the logic of working with big oil, Carbon Clean CEO Aniruddha Sharma said: “If I were a fireman and there was a fire – a big fire and a small fire – where would I go first? Obviously, the big fire.” AFP