India solar park sparks desire for school

By Roli Srivastava/Bhadla

The teenage girls of Bhadla, near one of the world's largest solar parks, store their books in tattered briefcases and their dreams in the essays they write between household chores.

Their remote pastoral community lost the land their animals grazed on until about a decade ago to the solar power plant in the northwestern state of Rajasthan – as well as the opportunity to work at the park due to a lack of education and skills.

Once resentful, these days Bhadla's young women say they want to get jobs at the solar facility, reflecting emerging aspirations as India expands its renewable power capacity amid a global shift to clean energy.

"I could work in the solar park if I was educated – I could manage files in the office or do their accounts," said Hira Bano, 18, who finished tenth grade two years ago.

"I have to study or I will be stuck in household work all my

life," said Bano, taking her books out of a briefcase gathering dust since the only village school shut more than two years ago.

Bhadla is home to one of the 52 solar parks India had approved across 14 states as of last year, in a drive to wean itself off planet-heating coal and meet a renewable energy goal of 500 gigawatts by 2030.

Sunny Rajasthan is a preferred state for building large new solar installations as it has available barren desert land that is sparsely populated, said state officials.

At 2,300 megawatts, Bhadla has the world's largest solar farm capacity – and more parks are in the offing in Rajasthan, according to officials at the state-run Rajasthan Renewable Energy Corporation Limited (RRECL).

That is creating opportunities in a region with previously few jobs due to its extreme natural conditions and lack of water, said RRECL chairman and managing director Subodh Agarwal.

Nonetheless, Bhadla locals – pastoralists who for generations kept animals on state land they treated as their own – feel left out of the development frenzy in their backyard.

"We have lost land and livestock, so it is only education that can give us a livelihood," said village elder Mohamed Sujawal Mehr.

"Now big companies surround us, but only a few of our men got jobs there," he said, noting that even a security guard position requires tenth-grade schooling. "How can they hire us if we can't read or write?"

Bhadla's school was once an unused village accessory, as education was not seen as a priority, until the arrival of the solar park infused new life into it.

The park's biggest operator, Saurya Urja, a joint venture of the state and infrastructure firm IL&FS, started sending two teachers to the school to hold regular classes.

One of them, Andaram Meghwal, said that when he first came to the village in 2017, the children climbed to the tops of the trees they were so afraid.

"We got students (to come in) from nearby towns to give them

exposure to the world outside," he said. "We shared stories of women achievers, the challenges they overcame."

Bano – who had previously spent her time grazing cattle, working on the farm and fetching firewood – fell in love with science, school games and the idea of pursuing a career.

Girls were more inspired to study than boys as they had lost their main activity of grazing animals, while men could find work at the solar park, Meghwal said.

This was between 2015 and 2020, when 900,000 blue solar panels were erected on 12,000 acres, 5,500 jobs were created, and eateries and tea shops opened along a new highway.

But as the park neared completion, jobs for unqualified workers began to shrink. The plant has created about 1,100 long-term jobs to operate and maintain it over 25 years – but locals lack the technical skills needed, said Saurya Urja officials.

Sarthak Shukla, a sustainability policy consultant, said clean energy provides fewer direct jobs than thermal coal power, which employs 800 to 900 people for a 1GW plant compared with 25 to 30 at a similar-sized solar park.

In Bhadla, Ayub Khan Chooda, 35, is among those who have benefited, crediting his contract to wash 400 solar panels daily to his three tractors – which pull small water tankers along the rows – despite having studied only up to first grade.

Dadda Khatoon, 32, was also happy when her husband returned from Dubai, after six years of milking and grazing camels, and got a security guard job at the solar park for Rs8,000 ($106.30) a month.

"He is happy, healthy and we are also able to save some money," said Khatoon, sitting with village women in the winter sun. "But I don't seem to have a role anymore apart from cooking and feeding my family. I think I had more respect then."

With no land left to graze their animals, Bhadla residents sold their livestock whose fodder, a bitter yellow fruit called "tumba", now lies uneaten on the vine between the solar

panels.
Women from this conservative community no longer venture out, fearing the busy highway and “the new people from cities”.
Local health workers said hypertension and diabetes have become quite common owing to the new sedentary lifestyles.
Shukla said that with a better understanding of the social and cultural impacts and the right policies, the solar sector could offer opportunities for Indian women, including training and other incentives such as health and education programmes.
Globally, women make up 32% of the renewable energy workforce compared with 22% in the oil and gas industry, according to the International Renewable Energy Agency.
Local elder Mehr loves to recall the celebrations two years ago when three girls, including Bano, passed their tenth grade, the first to do so in this village of 250 households. “We banged plates, clapped,” he said.
But their school, which had about 100 students, shut down soon after when a disgruntled teacher submitted a report showing zero attendance – a claim disputed by villagers.
The solar firm also stopped supporting classes and shifted to a broader community focus running mobile health and veterinary clinics, according to Saurya Urja CEO Keshav Prasad.
He told the Thomson Reuters Foundation that the company backed the villagers’ demand to reopen the school, pointing to rising demand for education across villages near the solar park.
Manphool Singh, the education official overseeing Bhadla school, said he had received the requests and a government decision was pending.
“We are trying our best to open it so children can study again,” he said.
Meanwhile, the girls cook, clean and stitch together colourful pieces of cloth to make rugs for their dowries.
Drawing water from a well, Asma Khatoon, 15, said her only desire was for the school to reopen so she could sit her tenth-grade exam.
In a short Hindi essay, she wrote: “This village has too many restrictions… I want to study, become a working woman.” –

Thomson Reuters Foundation

IMF’s misstep on climate finance

The International Monetary Fund seems determined to dilute one of the best examples of global co-operation in response to the economic disruptions induced by the Covid-19 pandemic and climate change. It must change course now, before it is too late.

The IMF’s allocation of $650bn in special drawing rights (SDRs, the Fund’s reserve asset) in August was long encouraged and widely welcomed. Given the IMF’s tight rules, it was clear from the start that the vast majority of SDRs would go to countries that did not need them. As a result, G7 leaders pledged to re-channel upwards of $100bn of their allocations to “countries most in need of … pandemic [support to] stabilise their economies, and mount a green and global recovery … aligned with shared development and climate goals.”

While these moves seem small compared to the $17tn that rich countries have spent to support their economies during the pandemic, they were nonetheless significant. In October, just two months after the allocation, the G20 backed a plan by the IMF and the World Bank to develop and implement a Resilience and Sustainability Trust, which would allow wealthy countries to channel their allotments to low- and middle-income

countries vulnerable to economic shocks. Because the RST could be used to address risks related to climate change, it would fill a glaring gap in international finance. The IMF announced that it would have a proposal ready for its 2022 spring meetings.

But will it be enough?

Extreme weather events like floods and hurricanes can trigger financial instability in vulnerable countries as they wipe out capital stock and sources of foreign exchange. Likewise, countries dependent on fossil-fuel exports face fiscal uncertainty as demand for oil and gas decreases to meet climate goals. In both cases, spillover effects can negatively affect trade. Countries confronting such conditions must undertake a structural transformation of their economies. But many low- and middle-income countries lack access to the cost-effective, flexible financing they need.

A well-designed RST would make the IMF criteria for resource allocation and country eligibility more adaptable. Unfortunately, five design flaws in the IMF's approach would render the planned RST ineffective for most climate-vulnerable countries.

The first flaw concerns eligibility. IMF programmes discriminate on the basis of income, but climate change does not. While the G20 explicitly called for the establishment of an RST covering low-income and climate-vulnerable middle-income countries, the IMF has adopted a narrow interpretation according to which middle-income countries would be eligible only if they do not exceed a certain income threshold.

But traditional measures of income are a poor criterion for determining eligibility. The IMF must adjust its thinking to actual circumstances and ensure that eligibility is based on climate vulnerability. It should not be controversial to integrate into the criteria simple measures such as susceptibility to physical climate risks like floods, droughts, and hurricanes, or economic factors like the share of fossil-fuel exports in total foreign-exchange earnings.

Second, there is a problem with the terms and accessibility of

the funds. Developing countries lack the fiscal space to mobilise domestic resources to address the structural changes their economies need. Many also lack access to external resources on reasonable borrowing terms. But the IMF is proposing that RST users be charged the SDR interest rate (currently five basis points and on the rise) plus a margin of up to 100 basis points. These rates are not very different from what the Fund currently charges middle-income countries. More problematic is the access limits, which would be 100% of quota, or less than the SDR equivalent of $1bn. These guidelines would do little to address the financing needs of all but the smallest countries.

The third flaw is the IMF's insistence on conditionality. The Fund sees the RST as a top-up scheme for existing programmes. This is deeply troubling. According to the IMF's own research, its existing lending facilities are stigmatised, owing to their high levels of conditionality and low levels of performance with respect to economic recovery and other social outcomes. The RST was supposed to be a new instrument that recognises and channels resources to the countries that are most vulnerable to climate change. But what the IMF plans is repackaged business as usual.

Climate-vulnerable countries have not applied for IMF support even during the pandemic, when the Fund has experienced the largest use of its facilities. Adding a small top-up at the same price and level of conditionality essentially will lock up much-needed financing for climate resilience.

The fourth flaw is that even though the IMF is only now devising a climate-change strategy, it would head the RST. Multilateral and regional development banks are also prescribed SDR institutions, and they have a longer view and a stronger track record on climate policy. They need to be part of the RST's governance.

Lastly, there is the question of scale. IMF Managing Director Kristalina Georgieva has said the RST would be funded with around $30bn initially and then scaled up to $50bn. While the RST alone cannot be expected to substitute finance needed to

address the intensifying effects of climate change, the needs assessment released by the Standing Committee on Finance of the United Nations Framework Convention on Climate Change put the figure at $6tn, and other estimates are significantly higher. At the recent UN Climate Change Conference (COP26), Barbados Prime Minister Mia Amor Mottley, whose country is among the world's most vulnerable, proposed an annual increase in SDRs of $500bn for 20 years to finance resilience and sustainability.

The IMF's shareholders and stakeholders must reconsider the RST's design. To succeed, it must include all climate-vulnerable developing countries, regardless of income level. It must provide low-cost financing that does not undermine members' debt sustainability and is not linked to pre-existing IMF programmes with onerous conditionalities. It must be governed by key stakeholders in development-finance institutions. And it must scale appropriately over time.

The IMF must make the necessary adjustments to its proposal for the RST. If it cannot, creditor countries should refrain from capitalising it. — Project Syndicate

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The West's wasted crisis

The silver lining in the gloomy cloud of the pandemic was the

opportunity it gave the West to mend its ways. During 2020, rays of light shone through. The European Union was forced to contemplate a fiscal union. Then, it helped remove Donald Trump from the White House. And a global Green New Deal suddenly appeared less far-fetched. Then 2021 came along and drew the blackout curtains.

Recently, in its financial stability review, the European Central Bank issued an angst-ridden warning: Europe is facing a self-perpetuating debt-fueled real estate bubble. What makes the report noteworthy is that the ECB knows who is causing the bubble: the ECB itself, through its policy of quantitative easing (QE) – a polite term for creating money on behalf of financiers. It is akin to your doctors alerting you that the medicine they have prescribed may be killing you.

The scariest part is that it is not the ECB's fault. The official excuse for QE is that once interest rates had fallen below zero, there was no other way to counter the deflation menacing Europe. But the hidden purpose of QE was to roll over the unsustainable debt of large loss-making corporations and, even more so, of key eurozone member states (like Italy).

Once Europe's political leaders chose, at the beginning of the euro crisis a decade ago, to remain in denial about massive unsustainable debts, they were bound to throw this hot potato into the central bank's lap. Ever since, the ECB has pursued a strategy best described as perpetual bankruptcy concealment.

Weeks after the pandemic hit, French President Emmanuel Macron and eight other eurozone heads of government called for debt restructuring via a proper eurobond. In essence, they proposed that, given the pandemic's appetite for new debt, a sizeable chunk of the mounting burden that our states cannot bear (unassisted by the ECB) be shifted onto the broader, debt-free, shoulders of the EU. Not only would this be a first step toward political union and increased pan-European investment, but it would also liberate the ECB from having to roll over a mountain of debt that EU member states can never repay.

Alas, it was not to be. German Chancellor Angela Merkel summarily killed the idea, offering instead a Recovery and

Resilience Facility, which is a terrible substitute. Not only is it macroeconomically insignificant; it also makes the prospect of a federal Europe even less appealing to poorer Dutch and German voters (by indebting them so that the oligarchs of Italy and Greece can receive large grants). And, despite an element of common borrowing, the recovery fund is designed to do nothing to restructure the unpayable debts that the ECB has been rolling over and over – and which the pandemic has multiplied.

So, the ECB's exercise in perpetual bankruptcy concealment continues, despite its functionaries' twin fears: being held to account for the dangerous debt-fueled bubble they are inflating, and losing their official rationale for QE as inflation stabilises above their formal target.

The scale of the opportunity Europe has wasted became obvious at the recent United Nations Climate Change Conference (COP26) in Glasgow. How could EU leaders lecture the rest of the world on renewable energy when rich Germany is building lignite-fueled power stations, France is doubling down on nuclear energy, and every other EU member state saddled with unpayable debts is left to its own devices to deal with the green transition?

The pandemic gave Europe an opening to devise a credible plan for a well-funded Green Energy Union. With a eurobond in place, and thus liberated from the purgatory of perpetual bankruptcy concealment, the ECB could be backing only the bonds that the European Investment Bank issues to fund a Green Energy Union. So, yes, Europe blew its opportunity to lead the world by example away from its addiction to fossil fuels.

We Europeans were not alone, of course. As US President Joe Biden was landing in Glasgow, the usual corrupt congressional politics back home were uncoupling his already much-shrunken green agenda from a very brown infrastructure bill, placing climate change on the back burner. While the United States, unlike the eurozone, at least has a Treasury Department that works in tandem with its central bank to keep debts sustainable, it, too, has missed a magnificent opportunity to

invest heavily in green energy and the high-quality jobs implied by the transition from fossil fuels. How can the West expect to persuade the rest of the world to embrace ambitious climate commitments when, after two years of waxing lyrical about the green transition, Biden and the Europeans arrived in Glasgow virtually empty-handed? As 2021 winds down, Western governments, having wasted their chance to do something about the clear and present climate emergency, are choosing to focus on exaggerated worries. One is inflation. While the acceleration in price growth must be checked, the widespread comparisons with the stagflation of the 1970s are ludicrous. Back then, inflation was essential for a US actively blowing up the Bretton Woods system in order to maintain the dollar's "exorbitant privilege." Today, inflation is not functional to American hegemony; rather, it is a side effect of the US economy's reliance on the financialisation process that imploded in 2008.

The West's other constructed panic is China. Initiated by former US President Donald Trump, and zealously perpetuated by Biden, the emerging new cold war has an unacknowledged purpose: to enable Wall Street and Big Tech to take over China's finance and technology sectors. Terrified by China's advances, like a functioning central bank digital currency and a macroeconomic stance that is vastly more sophisticated than their own, the US and the EU are opting for an aggressive stance that is a mindless threat to peace and to the global co-operation needed to stabilise our planet's climate. A year that began hopefully is ending grimly. Western political elites, unable (and perhaps unwilling) to turn a deadly crisis into a life-preserving opportunity, have only themselves to blame. — Project Syndicate

? Yanis Varoufakis, a former finance minister of Greece, is leader of the MeRA25 party and Professor of Economics at the University of Athens.

The case against green central banking

The fact that central banks could use their limited policy tools to pursue climate targets does not mean that they should. There are far more effective climate measures available to fiscal policymakers and regulators, and central bankers already have enough on their plates.

NEW YORK – One way or another, central banks' behavior will have to change with the climate. But it should evolve only because climate change will create new constraints and drive new forms of public and private economic activity. Central banks' primary function should not change, nor should they adopt "green" targets that could undermine the pursuit of their traditional objectives: financial stability and price stability (which in the United States is a dual mandate of price stability and maximum employment).

Climate change will be a defining global issue for decades to come, because we are still a very long way from ushering in a low-carbon, climate-resilient world. Three features of our greenhouse-gas (GHG) emissions will impede the appropriate response. First, the benefits (cheap energy) are enjoyed in the present while the costs (global warming) are incurred in the future. Second, the benefits are "local" (they accrue to the GHG emitter) while the costs are global – a classic externality. Third, the most efficient methods of limiting GHG emissions impose disproportionate burdens on developing countries, while the task of compensating poor countries remains politically fraught.

The most efficient way to address climate-change externalities is through targeted fiscal and regulatory measures. Pigouvian taxes or tradable quotas would create the right incentives for reducing GHG emissions. Carbon taxes, as advocated by William D. Nordhaus of Yale University, must become the global norm (though it is difficult to envisage a global carbon tax working without a significant transfer of wealth from developed to developing countries). Rules and regulations targeting energy use and emissions can complement green taxes and quotas, and public spending can support research and development in the green technologies that we will need.

What does not belong in the mix is a green mandate for central banks. To be sure, legal mandates can change, and central banks have a well-established tradition of exceeding them. The European Central Bank's financial-stability mandate is secondary to – "without prejudice to" – its price-stability mandate. This did not prevent it from acting decisively and quite effectively during the global financial crisis, the eurozone sovereign debt crisis, and the COVID-19 crisis, even when this meant overriding the price-stability target in 2021 and likely also in 2022. Moreover, Article Three of the Treaty on European Union explicitly provides for "a high level of protection and improvement of the quality of the environment,"

so it is easy to see how the ECB's financial-stability and monetary instruments *could* be used to target climate change.

But that does not mean they should be used in this fashion. The standard monetary-policy instruments (one or more policy interest rates, the size and composition of the central bank's balance sheet, forward guidance, and yield curve control) are typically used to target price stability or the dual mandate. Judging by the results, there is no spare capacity in the monetary-policy arsenal.

These monetary-policy instruments impact financial stability as well, and not always in desirable ways. In addition, capital and liquidity requirements underpin micro- and macroprudential stability; and central banks can impose additional conditions on the size and composition of regulated entities' balance sheets. As the lender and market maker of last resort, the central bank can choose its eligible counterparties, the instruments accepted as collateral or bought outright, and the terms and conditions on which it lends or makes outright purchases.

There is no doubt that climate change affects a central bank's price-stability objective, including through current and anticipated changes in aggregate demand and supply, energy prices, and other channels. Climate change also could significantly alter the transmission of monetary policy, and thus will have to become an integral part of the models that guide central banks in pursuit of their primary objectives.

Green issues also affect financial stability in major ways. Extreme weather events can damage assets held by financial institutions and their counterparties. Climate-mitigation and adaptation efforts can depress the value of assets, potentially leaving many "stranded" or worthless. A central bank's financial-stability mandate requires it to recognize and respond appropriately to the foreseeable effects that climate change will have on asset valuations and on the

liquidity and solvency of all systemically important financial entities and their counterparties in the real economy.

But anticipating and responding appropriately to these risks now and in the future does not mean that higher capital or liquidity requirements should be imposed on “brown” loans, bonds, and other financial instruments. Financial-stability risks and global-warming risks are not perfectly correlated. Moreover, there are no redundant financial-stability policy instruments, and capital and liquidity requirements have a clear comparative advantage in pursuing financial-stability objectives, just as carbon taxes and emissions-trading systems have a clear comparative advantage in pursuing and achieving “green” objectives.

The shocks and disruptions caused by climate change will complicate central banks’ pursuit of their price-stability and financial-stability mandates. The last thing they need is to feel pressure to load additional objectives on their limited instruments. Just as it makes no sense to use carbon taxes or emissions-trading schemes to target financial stability, it makes no sense to use capital and liquidity requirements to address global warming. The appropriate tools to address climate change – fiscal and regulatory – are well-known and technically feasible. What is missing is the foresight, logic, and moral courage to deploy them.

Can small nuclear reactors really help the climate?

Much of the world has been turning away from nuclear power, with its ageing plants, legacy of meltdowns and radioactive waste. But some governments, big companies and billionaires including Bill Gates and Warren Buffett are convinced the technology can help save the planet.

Unlike wind and solar sources, nuclear power can be switched on and off at any time, and without the planet-warming emissions produced by gas and coal.

Investments of hundreds of millions of dollars are going toward a new generation of so-called small modular reactors (SMRs), which ultimately could provide a safe and nimble source of carbon-free energy – if they can overcome challenges related to economics, safety and public opinion.

HOW SMALL IS SMALL?

Of the more than 70 such reactors that the International Atomic Energy Agency lists as in some stage of design or development, the smallest are less than 5m in diameter and 10m in height. (The plant that would be built to operate the reactor would be bigger, of course.)

SMRs typically have less than 300 megawatts of generating capacity, about a third of that of existing reactors. The “M” in SMR – modular – means these reactors can largely be built in factories and shipped in standardised parts for assembly on-site. That means shorter construction times and greater flexibility to expand to meet demand.

WHY AREN’T TRADITIONAL NUCLEAR PLANTS ENOUGH?

Since the Fukushima Dai-ichi meltdowns in Japan in 2011, there has been a dearth of investor interest in building expensive new plants, with China, Russia and India as notable exceptions.

Instead, utilities have gravitated toward carbon-intensive coal and gas plants to supplement less reliable solar and wind resources. That has led climate advocates such as James Hansen, one of the first scientists to publicly warn about the danger of global warming, to call for more nuclear energy.

DO SMRS ALREADY EXIST?

The only ones currently in commercial operation are two 35-megawatt units on a floating power plant deployed by Russia in the Arctic in 2020. China expects to begin trials in 2026 on an SMR being built near an existing power plant on Hainan island.

The first commercial SMR project in the US, planned for the site of the Idaho National Laboratory, will consist of six reactors capable of producing a combined 462 megawatts. It’s supposed to be operational by the end of this decade.

ARE THEY SAFE?

Proponents say SMRs will be safer than earlier generations of nuclear power plants.

The basic idea remains the same – splitting atoms to release energy, a process known as nuclear fission, that heats water to produce steam that spins turbines to make electricity. About half of the SMR models under development use water as a coolant, as most currently operating reactors do.

Explosions at Fukushima and at Three Mile Island in the US in 1979 were caused by heat from exposed fuel rods splitting the hydrogen from the steam used to cool the reactor.

Some SMR designs, by contrast, use molten salt and metals as coolants. SMR designs also integrate new kinds of fuel and backup emergency systems that should reduce the likelihood of meltdowns.

On the other hand, smaller reactors would ideally be located closer to population centers, increasing the possible danger from an accident. And like their larger brethren, SMRs produce radioactive waste that must be stored safely for centuries.

WHAT ARE THE ECONOMIC CHALLENGES?

Cost competitiveness is an uphill climb. US manufacturer NuScale Power, to cite one example, is aiming for an SMR that can sell power for US$55 per megawatt-hour.

Yet wind power in much of the world is now about US$44 a megawatt-hour, solar is US$50, and in some regions, renewable energy will be below US$20 a megawatt-hour by the end of the decade, according to BloombergNEF.

A 2020 study by professors at the University of British Columbia found that on a lifetime basis, the cost of

electricity produced by SMRs could be 10 times greater than the cost of electricity produced by diesel fuel.

The economics might be more favorable when considering SMRs as alternatives to large-scale batteries to serve as at-the-ready backups for solar and wind power when the sun isn’t shining or the wind isn’t blowing.

WHO’S INVESTING IN SMRS?

Electricite de France, China National Nuclear, Japan’s Toshiba and Russia’s Rosatom are pushing SMR designs, as is NuScale. Gates and Buffett have teamed up to build and test a reactor at an abandoned coal plant in Wyoming.

Rolls-Royce Holdings raised £455 million (US$608 million) to fund the development of SMRs, with almost half of the financing coming from the UK government. The Canadian and US governments have also offered hundreds of millions of dollars in subsidies to kick-start the SMR industry.

Where is the money? Climate finance shortfall threatens global warming goals

Rich nations under pressure to deliver unmet $100-billion pledge

* More ambitious climate plans hinge on international funding

* Eyes on U.S. to boost finance at U.N. gathering next week

KUALA LUMPUR/BARCELONA, Sept 16 (Thomson Reuters Foundation) – F or a storm-prone developing country like the Philippines, receiving international funding to protect its people from wild weather and adopt clean energy is not only an issue of global justice – the money is essential to deliver on its climate plan.

Without promised support, many vulnerable poorer nations – battered by the economic impacts of COVID-19 and surging climate disasters – say they simply cannot take more aggressive action to cut planet-heating emissions or adapt to a warmer world.

The Philippines, for example, has pledged to reduce its emissions 75% below business-as-usual levels by 2030.

But only about 3 percentage points of that commitment can be delivered with its own resources, its national climate plan says. The rest will require international finance to make sectors like farming, industry, transport and energy greener.

“Environmental groups say our (target) is unambitious because it’s highly conditional. What they don’t see, however, is what we submitted is what is doable for the Philippines,” said Paola Alvarez, a spokesperson at the Department of Finance.

“Our economy is not doing well because of the pandemic and we have back-to-back typhoons every now and then,” which means national resources need to be prioritised for social programmes, she told the Thomson Reuters Foundation.

As leaders prepare to attend the United Nations General Assembly in New York next week, wealthy nations are coming under ever-greater pressure to deliver on an unmet pledge, made in 2009, to channel $100 billion a year to poor countries to tackle climate change.

With budgets worldwide squeezed by the COVID-19 crisis and U.N. climate talks postponed for a year, the original 2020

deadline to meet the goal was likely missed, analysts have said.

But as November's COP26 climate summit approaches fast, time is running out to convince developing countries – both big and small emitters – that any efforts at home to raise their climate game will be met with solid financial backing, analysts say.

Alden Meyer, a senior associate in Washington for think-tank E3G, focused on accelerating a low-carbon transition, said the $100-billion promise is well below what is actually needed by emerging economies to mount an adequate response.

But delivering on it is key to spurring them on, he added.

Right now, they can say, "the developed countries aren't doing what they said they would do in terms of support, so why should we ramp up ambition (to cut emissions)?" Meyer said.

Government officials in India – the world's fourth-biggest emitter of planet-heating gases – have said, for example, that any further commitment to reduce its carbon footprint will depend on funding from rich countries.

National pledges to cut emissions so far are inadequate to keep global temperature rise to "well below" 2 degrees Celsius above preindustrial times, and ideally to 1.5C, as about 195 countries committed to under the 2015 Paris Agreement.

The U.N. climate science panel warned in a report in August that global warming is dangerously close to spiralling out of control and will bring climate disruption globally for decades to come, in wealthy countries as well as poor ones.

'BARE MINIMUM'

Some big greenhouse gas emitters, including China, Russia and India, have yet to submit more ambitious plans to the United Nations, as they committed to do by 2020 under the Paris pact.

But of the roughly 110 plans delivered by other countries ahead of an adjusted U.N. deadline in July, nearly all hinge on one key condition: money.

According to the World Resources Institute (WRI), a U.S.-based think-tank that tracks national climate pledges, “well over half” of those updated emissions goals include actions that can only happen with the support of international finance.

“This underscores why it’s so critical for developed countries to deliver on their $100-billion pledge. It’s the bare minimum,” said Taryn Fransen, a climate policy expert at WRI.

In the latest submissions, a growing number of developing nations have stepped up with emissions goals they can implement on their own, she added, including Argentina, Chile and Colombia, which have dropped requests for support entirely.

But honouring the $100-billion annual commitment – which covers the five years until 2025, when a new yet-to-be-negotiated goal is set to kick in – is key to fostering trust within the global climate talks and facilitating a faster green transition, she stressed.

The latest available figures from the Organisation for Economic Co-operation and Development show that in 2018, a little under $80 billion was delivered to vulnerable countries.

An analysis by aid charity Oxfam last year put the real figure – when counting only grants and not loans that have to be paid back – much lower, at $19 billion-$22.5 billion.

Meanwhile, the 46 least-developed countries between 2014 and 2018 received just $5.9 billion in total for adaptation, a level that would cover less than 3% of the funds they need this decade, found a July study from the International Institute for Environment and Development.

U.S. FALLS SHORT

Climate and development experts argue industrialised countries built their prosperity by burning fossil fuels, making them responsible for a large part of the losses happening in countries on the frontlines of worsening floods, droughts, storms and rising seas, many of them in the southern hemisphere.

A 2020 study in The Lancet Planetary Health journal estimated that, as of 2015, nations in the Global North were responsible for 92% of carbon emissions beyond safe levels for the planet, while the Global South accounted for just 8%.

Diann Black-Layne from the Caribbean nation of Antigua and Barbuda, which is battling sea level rise and more frequent hurricanes, said climate action for developing countries "has to be conditional, because we can't get the money".

Black-Layne, lead climate negotiator for the 39-member Alliance of Small Island States, questioned why wealthy governments continued to fund the fossil fuel industry while failing to meet their $100-billion-a-year pledge.

"That money is available," she said. "There is no shortage of money to get us to the 1.5C (temperature goal)."

Ahead of the COP26 summit, which starts on Oct. 31, host nation Britain has tasked Germany and Canada with coming up with a delivery plan for the elusive $100 billion a year, but observers believe that is unlikely to land until next month.

A major question is whether U.S. President Joe Biden will unveil a bigger U.S. finance commitment at the U.N. General Assembly next week, as concerns grow that the world's biggest economy is failing to cough up its fair share.

At an April summit he hosted, Biden said the United States would double its climate finance to about $5.7 billion a year

by 2024 – but that level is still seen by many climate finance experts as far below what it owes to developing countries.

A recent analysis from the Overseas Development Institute said the United States should be stumping up more than $43 billion a year based on cumulative carbon emissions, gross national income and population size.

It called the United States the biggest offender among 23 donor states in terms of falling short of its responsibilities.

On Wednesday, the European Union pledged to boost the $25 billion per year it provides in climate funding to poorer countries by 4 billion euros ($4.7 billion) through 2027, and called on the United States to step up too.

Laurence Tubiana, CEO of the European Climate Foundation and a key broker of the Paris Agreement, said this week that "serious pledges" were now needed from Washington given that some European nations had already raised their commitments.

"The U.S. must step up solidarity," she said, adding she understood Washington was working hard to do so. ($1 = 0.8462 euros) (Reporting by Beh Lih Yi @behlihyi and Megan Rowling; Editing by Laurie Goering. Please credit the Thomson Reuters Foundation, the charitable arm of Thomson Reuters, that covers the lives of people around the world who struggle to live freely or fairly. Visit news.trust.org)

La Cop26 di Glasgow: le linee

guida per i Paesi del Mediterraneo

Roudi Baroudi: un appuntamento fondamentale per definire strategie politiche economiche efficaci a contrastare il cambiamento climatico.

Il noto esperto a livello internazionale in campo energetico Roudi Baroudi, pone in evidenza una riflessione in concomitanza con l'imminente arrivo della conferenza sul cambiamento climatico delle Nazioni Unite (COP26) che si terrà quest'anno a Glasgow.

Baroudi definisce questo appuntamento memorabile e storico in particolare per i paesi del bacino del Mar Mediterraneo, Italia compresa. Fa osservare che l'aumento delle temperature e la crisi climatica globale è in atto e gli eventi dell'estate 2021 ne sono la testimonianza reale.

Il fenomeno degli incendi, per esempio, si manifesta con

dimensioni e intensità insolite rispetto al passato ed anche nel caso di attività dolosa l'aridità circostante e le alte temperature hanno favorito la propagazione violenta nelle aree colpite generando numerose morti, danni alle proprietà e distruzioni dei terreni agricoli coltivati. In casi come quello della Turchia seguiti da forti inondazioni dovute a piogge torrenziali dopo pochi giorni.

Questi fenomeni non sono più eventi sporadici localizzati in determinate aree, ma costituiscono una vera e propria testimonianza della catastrofe climatica in atto.

Questo ci impone di moltiplicare gli sforzi e sperare di poter invertire la tendenza prima che raggiunga un punto di non ritorno. Se non andremo in questa direzione, continua Baroudi:" la nostra specie dovrà affrontare un futuro sempre più complesso con più incendi, innalzamento del livello del mare, accelerazione dell'acidificazione degli oceani, calo degli stock ittici, tempeste più violente, siccità più lunghe e intense, raccolti compromessi, milioni di rifugiati climatici e fame di massa".

Svariati paesi del Mediterraneo, specialmente appartenenti ad Asia ed Africa hanno già situazioni complesse dal punto di vista territoriale per via della posizione geografica (Sud Italia incluso), inoltre i paesi con meno disponibilità economica fanno ancora molta fatica nella conversione ad impianti con minor impatto ambientale.

Nonostante questo scenario apocalittico, incalza Baroudi, non tutto è perduto. L'Unione europea ha compiuto progressi importanti rispetto alla maggior parte del resto del mondo e sta adottando delle politiche più stringenti sulle emissioni.

Anche gli Stati Uniti stanno intensificando i propri sforzi dopo quattro anni di cambio rotta sotto l'amministrazione Trump. In tutto il mondo, finalmente, si sta avendo maggiore consapevolezza del problema in maniera più trasversale dal

pubblico al privato.

Alla COP26, i leader ed i referenti politici dei paesi partecipanti dovrebbero lavorare costruttivamente ed ascoltare scienziati ed attivisti che chiedono un'azione più rapida ed efficace, inclusa una maggiore assistenza finanziaria per aiutare i paesi meno fortunati a unirsi seriamente alla lotta per il cambiamento climatico.

I programmi che i paesi del Mediterraneo porteranno a Glasgow saranno cruciali perché, nonostante la situazione in atto, la maggior parte di questi stati ha un vantaggio territoriale: ampi spazi e condizioni quasi ideali per le turbine eoliche offshore. Uno studio recente, che utilizza una varietà di tecnologie per elaborare dati previsionali, stima il potenziale combinato di energia eolica di tutti i 23 paesi euro mediterranei (in modo alquanto prudente) a quasi 1,5 milioni di megawatt. Si consideri che l'intera industria nucleare mondiale ha una capacità di circa 400.000 MW, ovvero meno di un terzo di quella che il Mediterraneo potrebbe produrre solamente con impianti eolici. Senza calcolare l'impiego di altre tecnologie: l'idrocinetica sia fluviale che marina (onde e maree), geotermica (on e offshore) e solare (200.000-300.000 MW).

Questa strategia darebbe una propulsione allo sviluppo di molti paesi che oggi hanno uno scarso accesso all'energia elettrica a prezzi accessibili, inoltre l'indotto relativo alle costruzioni degli impianti darebbe nuovi posti di lavoro oltre a molteplici benefici: la possibilità di sostituire i vecchi impianti di produzione più inquinanti, ridurre gradualmente l'importazione di carburanti fossile, rivendere nella rete l'eccesso di produzione energetica ed investire il ricavato in infrastrutture, politiche sociali o ulteriori impianti green.

Uno sviluppo omogeneo delle rinnovabili favorirebbe la transizione progressiva dai combustibili fossili, riducendo le

emissioni di carbonio che causano il cambiamento climatico e quindi facendo gli interessi di tutti, ovunque.

Queste proiezioni positive non si avvereranno mai per osmosi. Molti paesi nel Mediterraneo hanno bisogno di assistenza finanziaria e tecnica per mettere in pratica i progetti di conversione. L'accordo di Parigi includeva impegni economici da parte degli stati più ricchi per finanziare i paesi più bisognosi, ma molti governi non hanno rispettato l'accordo. Questo è controproducente, proprio come la mancata distribuzione del vaccino contro il COVID ai paesi del Sud del mondo, un errore imperdonabile che non solo determina la morte di persone innocenti, ma crea anche terreno fertile per nuove varianti del virus. Se la transizione verso un'energia più pulita creasse difficoltà alle popolazioni già svantaggiate, potrebbe venire a mancare il sostegno popolare verso questo percorso, con conseguenze terribili per tutti noi. Se lasciato incontrollato, il cambiamento climatico potrebbe provocare morte e distruzione ovunque creando flussi migratori ingestibili.

Roudi Baroudi conclude esortando la COP26 a produrre nuovi programmi di finanziamento da parte dei paesi ricchi verso quelli più poveri senza creare situazioni di assistenzialismo. Ci sono moltissime risorse a disposizione e c'è poco tempo per agire, quindi gli stati finanziatori non possono permettersi di sbagliare. I prestiti agevolati andranno messi a disposizione per i paesi più virtuosi che garantiranno la finalizzazione dei progetti. L'unico modo per farlo è articolare una strategia coerente per eseguire progetti rilevanti e fattibili con tempi e budget ben definiti. In particolare, i governi regionali devono dissipare i timori giustificati che, i fondi destinati ai progetti per le energie rinnovabili o ad altri strumenti di de carbonizzazione, andranno invece a riempire le tasche di funzionari locali corrotti.

Queste sono le linee guida che deve seguire quest'anno la

conferenza di Glasgow. La lotta ai cambiamenti climatici è ampiamente considerata come la sfida più importante che la nostra specie abbia mai affrontato e la capacità della regione di proteggersi e di esercitare il proprio peso sarà in bilico alla COP26. I paesi che si presentano con piani ben sviluppati per progetti concreti avranno la strada spianata per varie forme di finanziamento. Coloro che non lo faranno saranno inevitabilmente tagliati fuori.

What green artificial intelligence needs

Long before the real-world effects of climate change became so abundantly obvious, the data painted a bleak picture – in painful detail – of the scale of the problem. For decades, carefully collected data on weather patterns and sea temperatures were fed into models that analysed, predicted, and explained the effects of human activities on our climate. And now that we know the alarming answer, one of the biggest questions we face in the next few decades is how data-driven approaches can be used to overcome the climate crisis.

Data and technologies like artificial intelligence (AI) are expected to play a very large role. But that will happen only if we make major changes in data management. We will need to move away from the commercial proprietary models that currently predominate in large developed economies. While the

digital world might seem like a climate-friendly world (it is better to Zoom to work than to drive there), digital and Internet activity already accounts for around 3.7% of total greenhouse-gas (GHG) emissions, which is about the same as air travel. In the United States, data centres account for around 2% of total electricity use.

The figures for AI are much worse. According to one estimate, the process of training a machine-learning algorithm emits a staggering 626,000lb (284,000kg) of carbon dioxide – five times the lifetime fuel use of the average car, and 60 times more than a transatlantic flight. With the rapid growth of AI, these emissions are expected to rise sharply. And Blockchain, the technology behind Bitcoin, is perhaps the worst offender of all. On its own, Bitcoin mining (the computing process used to verify transactions) leaves a carbon footprint roughly equivalent to that of New Zealand.

Fortunately, there are also many ways that AI can be used to cut CO2 emissions, with the biggest opportunities in buildings, electricity, transport, and farming. The electricity sector, which accounts for around one-third of GHG emissions, advanced the furthest. The relatively small cohort of big companies that dominate the sector have recognised that AI is particularly useful for optimising electricity grids, which have complex inputs – including the intermittent contribution of renewables like wind power – and complex usage patterns. Similarly, one of Google DeepMind's AI projects aims to improve the prediction of wind patterns and thus the usability of wind power, enabling "optimal hourly delivery commitments to the power grid a full day in advance."

Using similar techniques, AI can also help to anticipate vehicle traffic flows or bring greater precision to agricultural management, such as by predicting weather patterns or pest infestations.

But Big Tech itself has been slow to engage seriously with the climate crisis. For example, Apple, under pressure to keep delivering new generations of iPhones or iPads, used to be notoriously uninterested in environmental issues, even though

it – like other hardware firms – contributes heavily to the problem of e-waste. Facebook, too, was long silent on the issue, before creating an online Climate Science Information Center late last year. And until the launch of the $10bn Bezos Earth Fund in 2020, Amazon and its leadership also was missing in action. These recent developments are welcome, but what took so long?

Big Tech's belated response reflects the deeper problem with using AI to help the world get to net-zero emissions. There is a wealth of data – the fuel that powers all AI systems – about what is happening in energy grids, buildings, and transportation systems, but it is almost all proprietary and jealously guarded within companies. To make the most of this critical resource – such as by training new generations of AI – these data sets will need to be opened up, standardised, and shared.

Work on this is already underway. The C40 Knowledge Hub offers an interactive dashboard to track global emissions; NGOs like Carbon Tracker use satellite data to map coal emissions; and the Icebreaker One project aims to help investors track the full carbon impact of their decisions. But these initiatives are still small-scale, fragmented, and limited by the data that are available.

Freeing up much more data ultimately will require an act of political will. With local or regional "data commons," AIs could be commissioned to help whole cities or countries cut their emissions. As a widely circulated 2019 paper by David Rolnick of the University of Pennsylvania and 21 other machine-learning experts demonstrates, there is no shortage of ideas for how this technology can be brought to bear.

But that brings us to a second major challenge: Who will own or govern these data and algorithms? Right now, no one has a good, complete answer. Over the next decade, we will need to devise new and different kinds of data trusts to curate and share data in a variety of contexts.

For example, in sectors like transport and energy, public-private partnerships (for example, to gather "smart-meter"

data) are probably the best approach, whereas in areas like research, purely public bodies will be more appropriate. The lack of such institutions is one reason why so many “smart-city” projects fail. Whether it is Google’s Sidewalk Labs in Toronto or Replica in Portland, they are unable to persuade the public that they are trustworthy.

We will also need new rules of the road. One option is to make data sharing a default condition for securing an operating license. Private entities that provide electricity, oversee 5G networks, use city streets (such as ride-hailing companies), or seek local planning permission would be required to provide relevant data in a suitably standardised, anonymised, and machine-readable form.

These are just a few of the structural changes that are needed to get the tech sector on the right side of the fight against climate change. The failure to mobilise the power of AI reflects both the dominance of data-harvesting business models and a deep imbalance in our public institutional structures. The European Union, for example, has major financial agencies like the European Investment Bank but no comparable institutions that specialise in orchestrating the flow of data and knowledge. We have the International Monetary Fund and the World Bank, but no equivalent World Data Fund.

This problem is not insoluble. But first, it must be acknowledged and taken seriously. Perhaps then a tiny fraction of the massive financing being channelled into green investments will be directed toward funding the basic data and knowledge plumbing that we so urgently need. — Project Syndicate

• *Geoff Mulgan, a former chief executive of NESTA, is Professor of Collective Intelligence, Public Policy and Social Innovation at University College London and the author of* Big Mind: How Collective Intelligence Can Change Our World.

Clean Energy Has Won the Economic Race

For decades, spectacularly inaccurate forecasts have underestimated the potential of clean energy, buying time for the fossil-fuel industry. But as two new analyses from authoritative institutions show, renewables have already convinced the market and are now poised for exponential growth.

DENVER – For decades, we at the Rocky Mountain Institute (now RMI) have argued that the transition to clean energy will cost less and proceed faster than governments, firms, and many analysts expect. In recent years, this outlook has been fully vindicated: costs of renewables have consistently fallen faster than expected, while deployment has proceeded more rapidly than predicted, thereby reducing costs even further.

Thanks to this virtuous cycle, renewables have broken through. And now, new analyses from two authoritative research institutions have added to the mountain of data showing that a

rapid clean-energy transition is the least expensive path forward.

Policymakers, business leaders, and financial institutions urgently need to consider the promising implications of this development. With the United Nations Climate Change Conference (COP26) in Glasgow fast approaching, it is imperative that world leaders recognize that achieving the Paris climate agreement's 1.5° Celsius warming target is not about making sacrifices; it is about seizing opportunities. The negotiation process must be reframed so that it is less about burden-sharing and more about a lucrative race to deploy cleaner, cheaper energy technologies.

With the world already suffering from climate-driven extreme weather events, a rapid clean-energy transition also has the virtue of being the safest route ahead. If we fail at this historic task, we risk not only wasting trillions of dollars but also pushing civilization further down a dangerous and potentially catastrophic path of climate change.

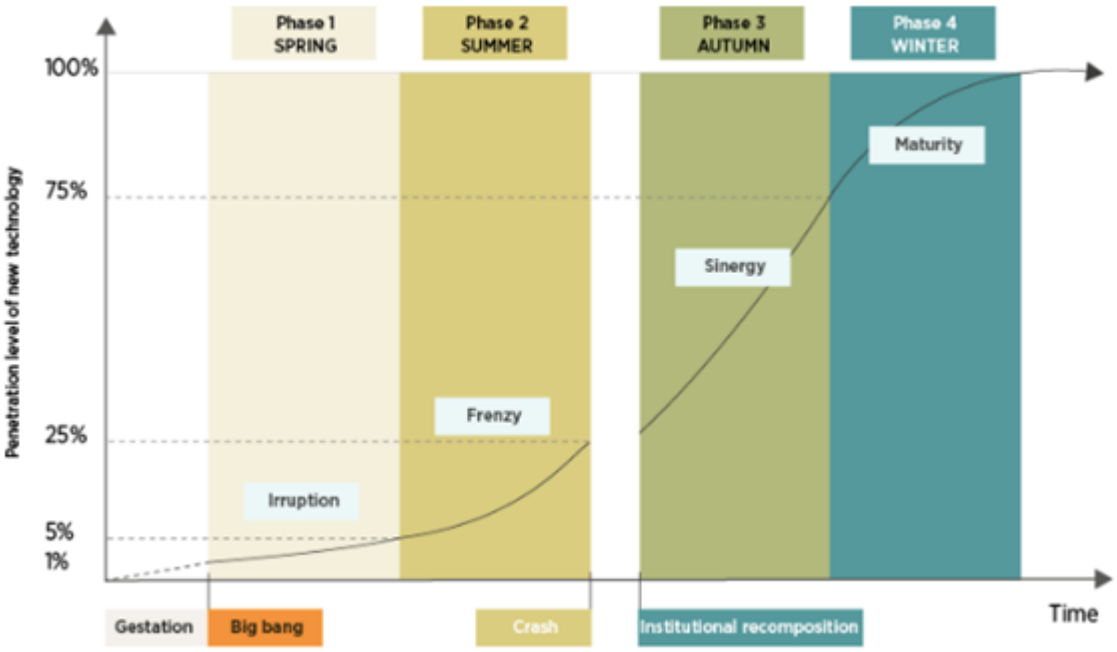
One can only guess why forecasters have, for decades, underestimated the falling costs and accelerating pace of deployment for renewables. But the results are clear: bad predictions have underwritten trillions of dollars of investment in energy infrastructure that is not only more expensive but also more damaging to human society and all life on the planet.

We now face what may be our last chance to correct for decades of missed opportunities. Either we will continue to waste trillions more on a system that is killing us, or we will move rapidly to the cheaper, cleaner, more advanced energy solutions of the future.

New studies have shed light on how a rapid clean-energy transition would work. In the International Renewable Energy Agency (IRENA) report *The Renewable Spring*, lead

author Kingsmill Bond shows that renewables are following the same exponential growth curve as past technology revolutions, hewing to predictable and well-understood patterns.

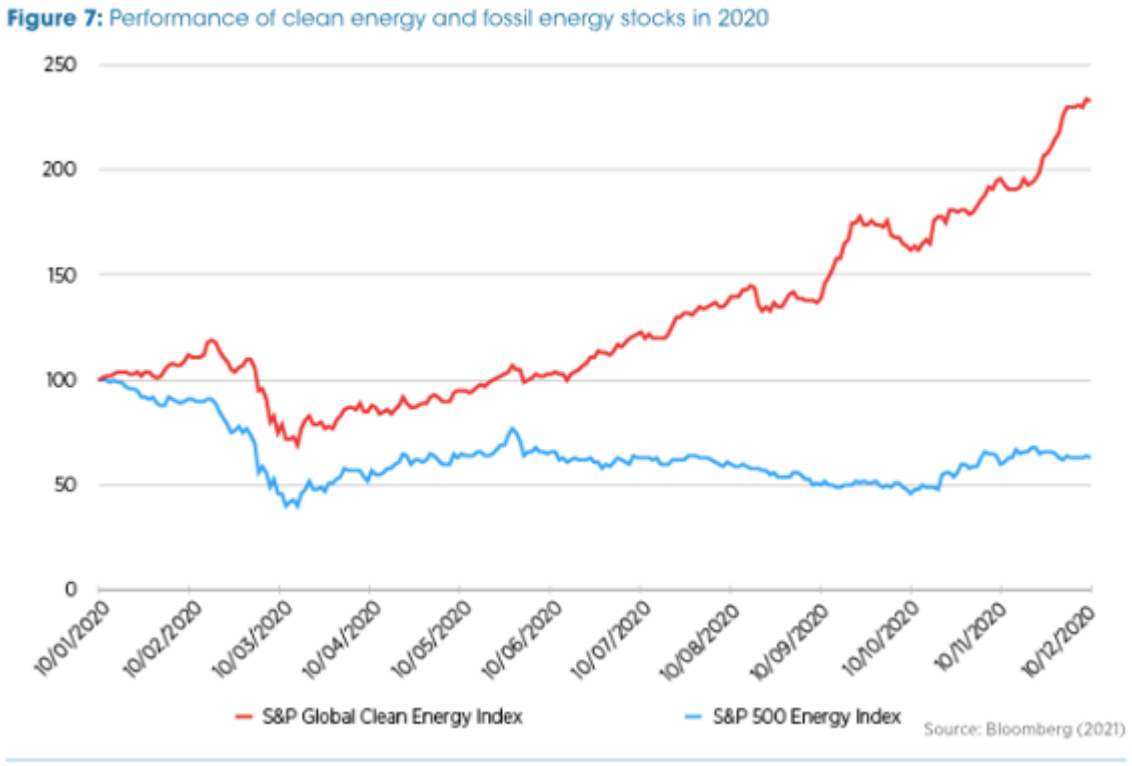
Accordingly, Bond notes that the energy transition will continue to attract capital and build its own momentum. But this process can and should be supported to ensure that it proceeds as quickly as possible. Policymakers who want to drive change must create an enabling environment for the optimal flow of capital. Bond clearly lays out the sequence of steps that this process entails.



Examining past energy revolutions reveals several important insights. First, capital is attracted to technological disruptions, and tends to flow to the areas of growth and opportunity associated with the start of these revolutions. As a result, once a new set of technologies passes its gestation period, capital becomes widely available. Second, financial markets draw forward change. As capital moves, it speeds up the process of change by allocating new capital to growth industries, and by withdrawing it from those in decline.

The current signals from financial markets show that we are in the first phase of a predictable energy transition, with spectacular outperformance by new energy sectors and the de-

rating of the fossil-fuel sector. This is the point where wise policymakers can step in to establish the necessary institutional framework to accelerate the energy transition and realize the economic benefits of building local clean-energy supply chains. As we can see from market trends highlighted in the IRENA report, the shift is already well underway.



Source: Carbon Tracker based on Carlota Perez

Reinforcing the findings from the IRENA report, a recent analysis from the Institute for New Economic Thinking (INET) at the Oxford Martin School shows that a rapid transition to clean energy solutions will save trillions of dollars, in addition to keeping the world aligned with the Paris agreement's 1.5°C goal. A slower deployment path would be financially costlier than a faster one and would incur significantly higher climate costs from avoidable disasters and deteriorating living conditions.

Owing to the power of exponential growth, an accelerated path for renewables is eminently achievable. The INET Oxford report finds that if the deployment of solar, wind, batteries, and hydrogen electrolyzers continues to follow exponential growth

trends for another decade, the world will be on track to achieve net-zero-emissions energy generation within 25 years.

In its own coverage of the report, *Bloomberg News* suggests as a "conservative estimate" that a rapid clean-energy transition would save $26 trillion compared with continuing with today's energy system. After all, the more solar and wind power we build, the greater the price reductions for those technologies.

Moreover, in his own response to the INET Oxford study, Bill McKibben of 350.org points out that the cost of fossil fuels will not fall, and that any technological learning curve advantage for oil and gas will be offset by the fact that the world's easy-access reserves have already been exploited. Hence, he warns that precisely because solar and wind will save consumers money, the fossil-fuel industry will continue to try to slow down the transition in order to mitigate its own losses.

We must not allow any further delay. As we approach COP26, it is essential that world leaders understand that we already have cleaner, cheaper energy solutions ready to deploy now. Hitting our 1.5°C target is not about making sacrifices; it is about seizing opportunities. If we get to work now, we can save trillions of dollars and avert the climate devastation that otherwise will be visited upon our children and grandchildren.

How to Avert a Global Climate

Catastrophe

Sep 23, 2021OMAR RAZZAZ

Current global efforts to raise awareness and nudge and shame policymakers are necessary but not sufficient to prevent an existential climate crisis. Addressing the problem more effectively requires international governance arrangements that amount to a new social contract on global public goods.

AMMAN – The hottest day on record in Jordan since 1960 was a staggering 49.3° Celsius, (120.7° Fahrenheit) in July 2018, one month after I became prime minister. Jordan is not unique: heat waves have been causing record-high temperatures in countries from Canada to Australia in recent years. The effects of climate change (including increased frequency and severity of floods, hurricanes, and droughts), while felt locally, demand a global response, which should set binding targets that take into account countries' contributions to the problem and to the solution.

Jordan has been actively pursuing policies and programs to reduce carbon-dioxide emissions. Over the past 15 years, Jordan's annual emissions per capita fell from 3.5 tons to 2.5

tons. But Jordan, like the vast majority of countries, accounts for a negligible share of global CO_2 emissions – just 0.04% annually. So even if Jordan was to turn its whole economy green overnight, it would hardly make a dent. This does not absolve us of responsibility, but we cannot overlook the fact that emissions are concentrated: the top 20 emitters account for almost 80% of the annual total, with the United States and China alone accounting for 38%.

In many countries, the ramifications of climate change for water supply have been staggering. In the case of Jordan, it made an already tight constraint much more acute. Rainfall was previously the savior for rural communities that engaged in seasonal rainfed agriculture and herding on semi-arid land. Over the last decade, however, a steady decline in average annual rainfall and an increase in the frequency and severity of droughts have undermined these modes of agriculture, deepening the socioeconomic divide between rural and urban areas.

Jordan is by no means unique: the World Health Organization estimates that half of the world's population will be living in water-stressed areas by 2025. In essence, what was previously a regional challenge has now become a serious global governance issue with environmental, political, and economic ramifications.

More broadly, other manifestations of climate change, and the lack of an internationally coordinated response to them – not to mention to additional threats such as the COVID-19 pandemic – suggest that something is seriously wrong at the global level. According to the recent sober assessment by the United Nations Intergovernmental Panel on Climate Change, the world will not meet the 2015 Paris climate agreement goal of limiting global warming to well below 2°C unless it makes huge additional cuts in CO_2 emissions.

Quite simply, the results of the world's climate efforts are

dangerously inadequate. According to the Climate Action Tracker, current policies put the world on course to be an alarming 2.7-3.1°C warmer by 2100, relative to pre-industrial levels. Yes, many emerging green technologies are promising and should be supported. But in the absence of a global approach, these innovations risk merely redistributing the impact of climate change among countries and regions.

Raising awareness and nudging (and shaming) policymakers is necessary, but not sufficient to avert what UN Secretary-General António Guterres has referred to as a "climate catastrophe." Climate-change mitigation must be pursued as a global public good. The problem is that such goods are plagued by collective-action problems, because the costs tend to be spatially and temporally concentrated while the benefits are diffuse. These difficulties can be tackled only by global governance structures that reduce the cost of collective action, internalize externalities, and counter short-term biases in decision-making.

To address climate change more effectively, we need global governance arrangements that amount to a new global social contract. Existing international governance structures can serve as a foundation for these new institutions, but will need to be amended and supplemented to address specific problems related to public goods and collective action.

For starters, we need a governance structure whose jurisdiction is limited to global public goods that cannot be provided adequately at the national level. Nation-states would be free to opt in and opt out, with the benefits of opting in outweighing those of opting out. Decisions would be taken on a majoritarian basis, with no single country having veto power. There would also be an appeals and adjudication process that allows decisions to be challenged.

Second, a custodial entity would keep track of global natural wealth accounts to address intergenerational equity issues.

This entity should be able to place items on the global governance institution’s agenda and to appeal decisions.

Lastly, a regime of incentives and disincentives would aim to preserve nature and biodiversity and tax those who consume it, taking wealth and income disparities across countries into account.

Establishing global governance mechanisms that focus on the public-goods and collective-action challenges of climate change will not be easy. Concerns and fears related to a “democratic deficit” and the need to protect national sovereignty are legitimate, and cannot simply be brushed aside.

Nevertheless, we are not starting from scratch. The World Trade Organization provides an example of a strong and successful global governance structure with binding rules. It is thus both ironic and sad that the WTO has failed to incorporate trade-related environmental and human-rights issues into its regulations in order to ensure a level international playing field. After all, with its sanctioning authority, the WTO is best positioned to link issues such as greenhouse-gas emissions and labor rights to trade rules.

Jordan cannot successfully tackle today’s global climate challenges on its own. Nor can the Middle East, owing to regional conflicts and rivalries. Now that the world has become a village, the task facing the region is instead to agree with other countries – our fellow villagers – on how to mitigate our own excesses and avert an existential threat. This can be achieved only by finding suitable ways to hold ourselves and each other accountable. The solution lies in establishing a global governance system that is based on the nation-state but has the capacity to sanction harmful behavior.

Some might regard the idea of creating such a structure as

far-fetched. But unless we do, there is scant hope of preventing the climate crisis – already apparent in Jordan and around the world – from continuing to destroy countless lives and livelihoods.

OMAR RAZZAZ

Writing for PS since **2021**
1 Commentary

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