

# Reeling in a deal to save the ocean



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The ocean covers more than 70% of our planet's surface, produces half of the oxygen we breathe, feeds billions of people, and provides hundreds of millions of jobs. It also plays a major role in mitigating climate change: over 80% of the global carbon cycle passes through the ocean. But this precious natural resource is not invincible. Despite all the benefits it affords us, the ocean today faces unprecedented man-made crises that threaten its health and its ability to sustain life on Earth.

The greatest threat to marine biodiversity is overfishing. More than one-third of global fish stocks are overfished and a further 60% are fully fished. Each year, governments around the world encourage overfishing by providing \$22bn in harmful fisheries subsidies. Although these subsidies are designed to help support coastal communities, they instead prop up unsustainable and unprofitable fishing activity, depleting the

very resource on which local populations' livelihoods depend. This problem is not new. In fact, the World Trade Organisation's members have been trying to negotiate a deal to curb these damaging payments since 2001. World leaders reiterated their commitment to tackling the issue when they agreed in 2015 to the Sustainable Development Goals (SDGs). Under SDG 14, which aims to put a healthy ocean at the heart of the global sustainable-development agenda, leaders promised by 2020 to reach an agreement at the WTO that would reduce fisheries subsidies. But they missed the deadline, as negotiations slowed during the worst of the Covid-19 pandemic. Research shows that if WTO members were to eliminate all harmful fisheries subsidies – the most ambitious scenario – global fish biomass could increase by 12.5% by 2050. That's an additional 35mn metric tonnes of fish, or more than four times North America's annual fish consumption in 2017. And this is a conservative estimate. Removing destructive subsidies really will mean more fish in the sea.

The aim is not to remove support from fishing communities, but rather to redirect it in a more meaningful and less damaging way. Even if a deal does not eliminate all harmful subsidies, it would create a global framework of accountability and transparency for subsidy programmes. That, in turn, would spur dialogue between governments, fishing communities, and other stakeholders to spur the development of redesigned policies that better support fisherfolk while protecting our global commons.

Moreover, an agreement is within reach – if the political will is there to deliver it. The most recent lapse of the negotiations resulted from differences over how to structure flexibility in subsidy regimes for developing countries, as well as how to define and enforce rules on illegal fishing and sustainable stocks. But after numerous proposals and discussions, the comprehensive draft now on the table combines measures to curb harmful subsidies with specific exceptions for developing countries.

With the start of the WTO's 12th Ministerial Conference in

Geneva just days away, now is the moment for a deal. Failure to conclude one would not only harm the ocean and the livelihoods of those who depend upon it, but also would diminish the global rules-based system and damage the pursuit of the 2030 Agenda for Sustainable Development. In contrast, ending harmful fisheries subsidies would reduce the cumulative pressures on the ocean and increase its resilience in the face of climate change.

In the wake of the UN Climate Change Conference (COP26) in Glasgow, governments must demonstrate their willingness to use every tool at their disposal to tackle the climate crisis. The stakes at the upcoming WTO Ministerial Conference have perhaps never been higher. The future of multilateral trade co-operation is at risk; but, above all, jobs, food security, and the health of our global commons are on the line.

That is why 33 former government leaders and ministers from around the world have joined forces with nearly 400 scientists in urging WTO members to “harness their political mandate to protect the health of the ocean and the well-being of society.”

Governments have given their word that they will curb destructive fisheries subsidies. Next week’s meeting in Geneva will test the credibility of that pledge.

This commentary is also signed by: Axel Addy – Minister of Commerce and Industry of Liberia (2013-18); Mercedes Araoz – Prime Minister of Peru (2017-18) and Vice-President of Peru (2016-2020); Hakim Ben Hammouda – Minister of Economy and Finance of Tunisia (2014-15); Herminio Blanco – Minister for Trade and Industry of Mexico (1994-2000); Maria Damanaki – European Commissioner for Maritime Affairs and Fisheries (2010-14); Eduardo Frei Ruiz-Tagle – President of Chile (1994-2000); Michael Froman – US Trade Representative (2013-17); Tim Groser – Minister of Trade of New Zealand (2008-2015); Enrique V Iglesias – President of the Inter-American Development Bank (1988-2005); Hilda Heine – President of the Marshall Islands (2016-2020); Ban Ki-moon – UN Secretary-General (2007-2016); Ricardo Lagos – President of

Chile (2000-06); Pascal Lamy – Director-General of the WTO (2005-2013); Roberto Lavagna – Minister of Economy of Argentina (2002-05); Cecilia Malmstrom – European Commissioner for Trade (2014-19); Peter Mandelson – European Commissioner for Trade (2004-08); Sergio Marchi – Minister of International Trade of Canada (1997); Hernando Muñoz – Minister of Foreign Affairs of Chile (2014-18); Pierre Pettigrew – Minister for International Trade of Canada (1999-2003), Minister of Foreign Affairs of Canada (2004-06), Tommy Remengesau, Jr. – President of the Republic of Palau (2001-09, 2013-2021); Jose Luis Rodríguez Zapatero – Prime Minister of Spain (2004-2011); José Manuel Salazar – Minister of Foreign Trade of Costa Rica (1997-98); Susan Schwab – US Trade Representative (2006-09); Juan Somavia – Director-General of International Labour Organisation (1999-2012); Alberto Trejos – Minister of Foreign Trade of Costa Rica (2002-04); Allan Wagner – Minister of Foreign Affairs of Peru (1985-88, 2002-03, 2021); Andres Velasco – Minister of Finance of Chile (2002-06); Ernesto Zedillo Ponce de León – President of Mexico (1994-2000); and Robert Zoellick – US Trade Representative (2001-05). – Project Syndicate

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## بارودي: قرار بايدن لخفض أسعار

# النفط العالمية... ودول أخرى ستلجأ إلى احتياطها



المركزية- لفت الخبير الاقتصادي في شؤون الطاقة رودي بارودي إلى أن "القرار الذي اتخذته الرئيس الأميركي جو بايدن باستخدام جزء من احتياطي النفط الأميركي، "يهدف إلى خفض التضخم والمحافظة على الاسعار العالمية بشكل اقتصادي أكثر استدامة".

وأكد بارودي في مقابلة مع "الجزيرة" - إنكليزي، "استخدام ما يعدل 7% فقط من أصل مجموع الاحتياطي الأميركي الذي يعادل ٧١٤ مليون برميل". وكشف أن "واشنطن اتخذت هذا القرار للحد من تحكم دول "أوبك بلس" وروسيا بسعر النفط العالمي".

كذلك أكد أن "الصين، الهند، كوريا الجنوبية وبريطانيا سيبدأون باستخدام احتياطي النفط المتوفر لديهم، وذلك لدعم استقرار سوق النفط"، مشدداً على أن "الرئيس الأميركي لديه أسلحة وطرق اقتصادية أخرى ومنها الطلب من منتجي الغاز الصخري في الولايات المتحدة زيادة الإنتاج، والذي من الممكن أن يؤثر بشكل كبير على الأسعار العالمية".

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# 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) – For 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](http://news.trust.org))

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## How global institutions die



In the aftermath of World War II, the victors established a set of institutions that have underpinned the world order ever since. While those institutions have often been contested, they have proved to be highly resilient. But this does not mean they are invulnerable. On the contrary, their effectiveness may be gradually eroded – especially when they are used as geopolitical pawns.

Academic research offers abundant analysis of the factors that boost institutional hardiness, and those that tend to hasten institutional failure. One key message – which my own experience at the World Bank and in the European Union confirms – is that institutions thrive when there is trust. Small wonder, then, that the international order’s institutional arrangements are at risk.

Former US president Donald Trump’s administration threw the institutional-trust deficit into sharp relief. In just four

years, Trump either defunded or disengaged from several United Nations agencies and multilateral agreements, paralysed the World Trade Organisation, and withdrew the United States from the World Health Organisation.

The multilateral system passed the stress tests of Trump's attacks – but just barely. Moreover, Trump's departure from the White House did not bring the reprieve, let alone revival, for which some hoped. Instead, according to the 2021 Edelman Trust Barometer, global trust in institutions has continued to decline.

The Covid-19 pandemic is largely to blame. Despite some successes, multilateral institutions failed to bring about the collaboration needed to address the crisis effectively. The highly uneven distribution of vaccine doses is a case in point.

Some have already written off the post-WWII institutions, arguing that they have outlived their usefulness. For these critics, talk of reforming bodies like the UN Security Council or the International Monetary Fund merely distracts from the more important task of “figuring out what a new order should look like.” Should it, for example, rely more on ad hoc formations, like those that have proliferated in recent years? The answer to that question is plainly no. After all, those formations have so far failed to produce anything close to the kinds of multilateral cooperation the world needs.

To be sure, traditional governance frameworks have indeed fallen short. For example, as Mark Leonard of the European Council on Foreign Relations recently observed, UN Climate Change Conferences have “failed to produce a model of global governance that can tame power politics, let alone forge a sense of shared destiny among countries.” The just-concluded COP26 in Glasgow lent further support to this conclusion.

But while post-WWII international institutions are far from perfect, their collective record suggests that they remain the world's best hope for coping with the complex challenges ahead. As Harvard University's Joseph S Nye recently pointed out, established institutions entrench “valuable patterns of

behaviour,” as they underpin a “regime of rules, norms, networks, and expectations that create social roles, which entail moral obligations.”

Of course, the mere existence of institutions is not enough to deliver solutions to the world’s problems. As Nye put it, they must be used in ways that “bind others to support global public goods” that advance shared long-term interests.

That is not what the EU did last week, when the debate over the taxonomy of green investment devolved into an acerbic exchange between the bloc’s renewable heavyweights and those who view gas and nuclear as integral to any green transition. This debate will surely dent the EU’s painstakingly built reputation as a global standard-bearer on sustainability.

If such division exists within the EU, it is difficult to imagine how consensus can be reached within global organisations, especially at a time of intensifying great-power competition. In fact, nowadays, international institutions are becoming a theatre – and often collateral damage – of geopolitical confrontation.

In recent years, China has taken steps to expand its influence within multilateral institutions. It now heads four of the 15 UN agencies – a gain that has helped to protect it from international scrutiny.

China is also at the centre of the recent data-rigging scandal at the World Bank. An independent investigation carried out by the US law firm WilmerHale found irregularities in the data used to determine China’s ranking in the 2018 and 2020 editions of the Doing Business index.

IMF Managing Director Kristalina Georgieva, who was serving as the World Bank’s Chief Executive Officer in 2018, was accused of playing a central role in the effort to boost China’s ranking. Within weeks, Doing Business was discontinued, and Georgieva’s IMF job was on the line.

Ultimately, the IMF board stood behind Georgieva. Furthermore, the WilmerHale investigation has faced heavy criticism for its lack of hard evidence and clear display of bias. Joseph E Stiglitz has aptly likened the entire episode to a “coup

attempt,” aimed at neutralising Georgieva’s efforts to advance bold reforms. Georgieva has also been justly praised for her leadership during the pandemic, including the IMF’s unprecedented use of special drawing rights.

Nonetheless, the Doing Business scandal could do lasting damage to an already beleaguered international system. Beyond eroding trust in the World Bank and the IMF, the debacle has highlighted how bilateral tensions can shape – and distort – the activities of multilateral institutions.

While the Covid-19 pandemic has highlighted international institutions’ shortcomings, it has also made plain, yet again, that the biggest challenges today are global in nature. In this context, defending multilateral institutions is hardly a display of “nostalgia.” Rather, it is an act of realism. Few would benefit from the unravelling of the existing order. The question is whether public trust can be restored before it is too late. – Project Syndicate

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## **Scoping out corporate carbon neutrality**



By Geoffrey Heal/New York

In the run-up to this year's United Nations Climate Change Conference in Glasgow (COP26), a growing number of companies hopped on the sustainability bandwagon, declaring commitments to achieve carbon neutrality – net-zero carbon-dioxide emissions – by mid-century. And among the many ambitious announcements to come out of COP26 is that almost 500 financial-services firms have “agreed to align \$130 trillion – some 40% of the world's financial assets – with the climate goals set out in the Paris agreement, including limiting global warming to 1.5°C.”

But many commentators have been sceptical about such proclamations, suggesting that they amount to greenwashing. Critics point to corporations' heavy reliance on “offsetting,” which has become an increasingly important – and controversial – issue in the broader climate debate. So great is the confusion about what is real and what is not that the Taskforce on Scaling Voluntary Carbon Markets, led by UN Special Envoy for Climate Action and Finance Mark Carney, has established a new governance committee to review corporate emissions pledges.

The sceptics are right to be concerned about the use of

offsets. The world needs to get to net-zero by mid-century, and it cannot do that with offsets. Companies buy offsets precisely so that they can continue emitting greenhouse gases (GHGs) while claiming that their emissions are zero, net of the offsets. The very existence of an offset means that the purchaser's emissions are not zero.

But not all offsets are alike. The critics focus on offsets in which one company or country pays another to reduce emissions and then claims the reduction as its own. This is the kind of offset that cannot be allowed if the world as a whole is to get to zero emissions. There is a place, however, for offsets generated by removing GHGs from the atmosphere, for example by direct air capture or forest growth. If a company emits 100 tons of CO<sub>2</sub> and then removes the same amount, its net emissions really are zero. If all companies do this, the world as a whole will achieve net-zero emissions.

True, the recourse to forestry requires a cautionary note. Growing trees raises issues of both additionality and permanence – additionality because it is hard to be sure that the forest growth would not have occurred anyway, and permanence because there is a risk that the forest will burn, a problem that has grown more visible and severe in recent years.

Still, offsets can play a positive role. The costs of reducing GHG emissions, and the willingness and ability to pay for such reductions, vary greatly from country to country, depending on the sources of its emissions and its stage of development. Some countries may not be willing or able to pay for an expensive reduction in emissions at home but could still pay for less costly reductions abroad. When this happens, an offset market can facilitate a reduction in emissions that would not otherwise have occurred, or that would not occur without a policy that penalises CO<sub>2</sub> emissions.

In this case, offsets may be useful at least in moving the world closer to net-zero emissions. But to reach the finish line, they will have to be phased out at some point. There ultimately is no place for offsets in a zero-emissions world.



In the meantime, policymakers and business leaders would do well to attend to a related issue that has been neglected: the failure to distinguish between so-called scope-one, scope-two, and scope-three emissions. Scope one refers to emissions that arise from a company's own operations, whereas scope two applies to those associated with the production of electric power purchased by the company, and scope three to those arising from other parts of the supply chain, particularly from the consumption of the product.

Clearly, there is potential for massive double counting here if one adds up all the emissions across companies. If my company purchases electricity from a local utility, the associated emissions are scope two for me and scope one for the utility. If Exxon sells jet fuel to American Airlines for use in Boeing aircraft, the emissions are scope three for Exxon and Boeing, and scope one for American Airlines. These emissions are counted three times, which is anathema to any competent accounting system. Every scope-two or -three emission is someone else's scope-one emission.

Fortunately, such confusion is avoidable. If every company has reduced its scope-one emissions to zero, aggregate corporate emissions will be zero. It therefore makes sense for every company to focus only on this factor. If scope-one emissions are brought to zero, scope-two and scope-three emissions will take care of themselves.

This should help to simplify the general policy guidance and instructions given to companies: Focus on reducing your scope-one emissions. Plan on phasing out offsets over the long run. And continue to look for opportunities to remove GHGs from the atmosphere, as these reductions can still be counted against your own scope-one emissions. – Project Syndicate

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# Electrification and urbanisation will drive growth in copper



## The long-term growth drivers of copper

The green transformation will electrify the global economy as cars go electric and more homes in colder areas will switch from natural gas as heating source to that of air to water heat pumps. In warmer parts of the world we will continue to see an acceleration in air conditioners to cool homes. The main usage of refined copper is for electrical applications, but it is also used in housing (pipes and fittings), cars, telecommunication and industrial machines. Copper has the second highest thermal conductivity at room temperature among pure metals and is thus the preferred metal used in electrical applications. As the world electrifies in the name of the green transformation and rapid urbanization continues in Asia,

Africa, and South America, copper will continue to enjoy strong annual growth rates.

### **How to get exposure to copper?**

Copper has been rebranded as a *green metal* because of its importance for the green transformation and investors are increasingly asking us how to invest in copper. The most direct way is of course to invest in high grade copper futures on COMEX (part of CME Group) with the current active contract being the Mar 2022 contract (Saxo ticker: HGH2), but the contract has a contract value of around \$106,537 at current level making it inaccessible to most retail investors. One could also invest through CFD on futures (Saxo ticker on the Mar 2022 is COPPERUSMAR22) where the investor could buy 100 pounds of copper instead of 25,000 pounds in the futures reducing the contract size to \$425. However, getting exposure through CFDs and futures the investor must regularly roll the contract to the next active contract, and the investor could also incur financing cost increasing the drag on performance. The chart below shows the continuous futures contract on high grade copper since 2002.

### **Few miners offer pure exposure to copper**

Another way to get exposure to copper that removes the difficulties of rolling futures or CFD contracts is to invest in mining companies that extract or refine copper. The table below shows 16 mining companies with exposure to copper with Codelco, the largest copper producer in the world, absent from the list as the Chilean miner is only listed in Chile and thus not investable for our clients. The copper mining industry has delivered a median total return in USD of 132.6% over the past five years beating the global equity up 105% in the same period. The rising copper prices the past year driven by investors positioning themselves in *green metals* (defined as metals that will play a key role in the green transformation) which in turn has pushed up revenue in the industry by almost

40%. Sell-side analysts are generally bullish on copper miners with a median upside of 16% from current levels. In our view investors should select one or two copper miners to get exposure and avoid the ETFs on the industry as they are too broad-based and lack the pure exposure profile needed to play the copper market.

As the table also show, there is no such thing as pure exposure to copper except for futures, options and CFDs on the underlying copper. The miner with the highest revenue exposure to copper is Antofagasta with 84.8% revenue share from copper extraction and refining. Most copper miners also extract gold and silver as part of their copper operations. Out of the 16 copper miners in our list, only 6 of these miners have more than 50% of revenue coming from copper extraction and refining.

## **Outlook and risks**

High grade copper futures have been range trading for more than half a year as slowing demand out of China due to a slowdown in housing construction has weighed on the demand side. On the positive side inventories have been tight in copper which has helped support the copper price and the global pipeline of new copper mines, but also potential tax charges in Chile and Peru (roughly around 40% of global supply) could negative impact supply and keep copper prices high. The annualized growth rate in global refined copper demand has been around 3% in the period 2009-2020.

China has for many years been the key driver of demand growth for copper, but going forward electrification (electric vehicles and air-to-water heat pumps and urbanization in India will begin to play a bigger marginal role on demand creating a more steady and diversified demand picture. In 2022, demand outside China will be driven by construction, grid infrastructure, and transport. Another risk to copper demand is significantly higher interest rates next year as that would

curtail growth in construction which is interest rate sensitive.

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# 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.*

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## **Energy crunch deepening as US**



# warns Europe isn't doing enough



Europe's energy crunch is deepening, with gas and power prices hitting fresh records after the US warned the continent isn't doing enough to prepare for what could be potentially a dire winter.

With about a month to go before the start of the heating season, Europe doesn't have enough natural gas in storage sites and isn't building inventories fast enough either. Amos Hochstein, the US State Department's envoy for energy security, said on Friday he was worried about supplies this winter.

Energy demand is rebounding across the world as economies reopen and people return to the office. Gas stockpiles in Europe are already at the lowest level in more than a decade for this time of year, pushing up the cost of producing electricity. The rally in European energy prices is just a taste of what's to come for other commodities, Goldman Sachs Group Inc said in a report.

"European energy pricing dynamics offer a glimpse of what is in store for other commodity markets, with widening deficits and depleting inventories leading to elevated price volatility," said Goldman analysts including Jeff Currie. For European gas, "demand destruction is the only option to rebalance markets," they said.

Europe is struggling to boost supplies, with flows from No 2 supplier Norway currently limited due to maintenance. Top seller Russia is "is coming off an extended period of

inexplicably low supply” at a time when US deliveries of liquefied natural gas can’t be increased further, Hochstein said.

“I worry because I don’t think we should ever be in a position knowing that if it’s a cold winter, there’s not enough supply,” he told reporters during a visit to Warsaw. Benchmark European gas futures traded in the Netherlands exceeded €60 a megawatt-hour, climbing as much as 4.6% to a new record. The UK contract for next-month surged as much as 4.3% to 151.79 pence a therm.

Soaring gas prices are fuelling a rally in electricity. German power futures for next year, a benchmark for Europe, surged to a record €99.25 a megawatt-hour, while the equivalent French contract reached an all-time high of €102.75 a megawatt-hour on the European Energy Exchange.

Short-term prices are also gaining, with low wind power across most of Europe boosting costs. A bigger requirement from more expensive fossil-fuelled plants to meet demand has lifted the German day-ahead contract to the highest since 2007 and the UK equivalent above 200 pounds for the fourth time in two weeks.

“If supply were to disappoint further and winter weather turns out colder than normal, European gas and power prices may have to rise further to ration demand and thus curb energy-intensive industrial production,” Goldman said.

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**Environmental threats are the  
‘greatest challenge to human  
rights’: UN**



## United Nations

The UN rights chief has said the “triple planetary crises” of climate change, pollution, and nature loss represented the biggest threat to human rights globally, at the opening yesterday of a month-long session set to prioritise environmental issues.

“The interlinked crises of pollution, climate change and biodiversity act as threat multipliers, amplifying conflicts, tensions and structural inequalities, and forcing people into increasingly vulnerable situations,” Michelle Bachelet told the opening of the 48th session of the UN Human Rights Council in Geneva.

“As these environmental threats intensify, they will constitute the single greatest challenge to human rights of our era,” she added.

The former Chilean president said the threats were already “directly and severely impacting a broad range of rights, including the rights to adequate food, water, education, housing, health, development, and even life itself”.

She said environmental damage usually hurt the poorest people and nations the most, as they often have the least capacity to respond.

Bachelet referred to recent “extreme and murderous” climate events such as floods in Germany and California’s wildfires.

She also said drought was potentially forcing millions of people into misery, hunger and displacement.

Bachelet said that addressing the environmental crisis was “a humanitarian imperative, a human rights imperative, a peace-building imperative and a development imperative. It is also doable”.

She said spending to revive economies in the wake of the coronavirus (Covid-19) pandemic could be focused on environmentally-friendly projects, but “this is a shift that unfortunately is not being consistently and robustly undertaken”.

She also said that countries had “consistently failed to fund and implement” commitments made under the Paris climate accords.

“We must set the bar higher – indeed, our common future depends on it,” she added.

Her remarks come at the opening session of the September 13 to October 8 session of the Human Rights Council, where climate change themes were expected to be central, alongside debates on alleged rights violations in Afghanistan, Myanmar, and Tigray, Ethiopia.

In the same speech, she voiced alarm at attacks on indigenous people in Brazil by illegal miners in the Amazon.

Geneva-based diplomats told Reuters that two new resolutions on the environment were expected, including one that would create a new Special Rapporteur on Climate Change and another that would create a new right to a safe, clean, healthy and sustainable environment.

Yesterday Germany’s Foreign Minister Heiko Maas voiced support for the first idea, which has not yet been formally submitted in draft form.

“Climate change affects virtually all human rights,” he said.

Marc Limon of the Universal Rights Group think-tank said the Council’s recognition of the right to a healthy environment would be “good news”.

“It would empower individuals to protect the environment and fight climate change,” he said.

During her address, Bachelet said that at the 12-day COP26 climate talks in Glasgow, set to begin on October 31, her office would push for more ambitious, rights-based commitments.

She added that in many regions, environmental human rights defenders were threatened, harassed and killed, often with complete impunity.

She said economic shifts triggered by the Covid-19 pandemic had apparently prompted increased exploitation of mineral resources, forests and land, with indigenous peoples particularly at risk.

“In Brazil, I am alarmed by recent attacks against members of the Yanomami and Munduruku peoples by illegal miners in the Amazon,” she said.

In her opening global update, Bachelet touched on the human rights situations in several countries, including Chad, the Central African Republic, Haiti, India, Mali and Tunisia.

On China, she said no progress had been made in her years-long efforts to seek “meaningful access” to Xinjiang.

“In the meantime, my office is finalising its assessment of the available information on allegations of serious human rights violations in that region, with a view to making it public,” she said.

Rights groups believe at least 1mn Uyghurs and other mostly Muslim minorities have been incarcerated in camps in the northwestern region, where China is also accused of forcibly sterilising women and imposing forced labour.

Beijing has strongly denied the allegations and says training programmes, work schemes and better education have helped stamp out extremism in the region.

Decisions made by the Council’s 47 members are not legally binding but carry political weight.

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# The Reality of Climate Financial Risk



Those who argue that climate change has little to do with macroprudential risk management are offering a counsel of despair. If the 2008 global financial crisis revealed anything, it is that regulation matters, even if it isn't always politically popular or easily optimized.

LAUSANNE, SWITZERLAND – In a recent commentary, John H. Cochrane, a senior fellow at the Hoover Institution, argues that “climate financial risk” is a fallacy. His eye-catching premise is that climate change doesn't pose a threat to the global financial system, because it – and the phase-out of fossil fuels that is needed to address it – are developments that everyone already knows are underway. He sees climate-related financial regulation as a Trojan horse for an otherwise unpopular political agenda.

We disagree. For starters, one should acknowledge the context in which regulation emerges. With respect to climate policy, the Intergovernmental Panel on Climate Change has set the stage with its sixth assessment report, which concludes with a high degree of certainty that the Earth's climate is changing,

and that human activities are the cause. Ecologist William Ripple, the co-author of another recent study of planetary “vital signs,” goes further: “There is growing evidence we are getting close to or have already gone beyond tipping points associated with important parts of the Earth system.”

Unlike the 2008 global financial crisis – when banks that took excessive risks were bailed out, and global financial regulation was overhauled in light of our new understanding about interdependent financial markets – unmitigated climate change will lead to a crisis with irreversible outcomes.

The question, as Cochrane puts it, is whether climate-related financial regulation can do anything to help us avoid such outcomes. Although the answer is complex and currently incomplete, we would argue that it can. Financial regulation to mitigate climate risk is indeed worth pursuing, because the stakes are too high to let the perfect become the enemy of the good.

Consider some of the arguments about systemic financial risk and extreme climate events. First, we are told that the risk of “stranded assets” – particularly fossil-fuel assets – will become a fact of life, to be borne only by investors. Here, Cochrane points out, correctly, that fossil-fuel investments have always been risky. But can we reasonably say that the prevalence of this energy source should be left to market players alone, or that only investors will bear the costs?

Though per capita fossil-fuel consumption in countries such as the United States and the United Kingdom has declined since 1990, total consumption has grown dramatically elsewhere, rising by 50% globally over the last 40 years. In 2020, China and India were the planet’s two largest coal-energy producers, relying on coal for 61% and 71% of their electricity, respectively. Their economies, and those of many other developing countries, simply would not sustain a precipitous reduction in fossil-fuel energy.

Cochrane also suggests that there is no scientifically validated possibility that extreme climate events will cause systemic financial crises over the next decade, and that regulators are therefore stymied from assessing the risks on financial institutions' balance sheets over a five- or ten-year horizon. But the sheer scale of the challenge should make us reconsider the temporal dimensions of regulation.

If temperature increases are to be kept within 2° Celsius of pre-industrial levels this century, about 80% of all coal, one-third of all oil, and half of all gas reserves must be left unburned. All of the Arctic's oil and the remainder of Canada's oil sands – the world's largest deposit of crude oil – must be left in the ground, starting almost immediately.

Finally, it is said that the technocratic regulation of climate investments cannot protect us against un-modeled tipping points. But this view simply ignores the extensive literature in climate economics. In this field, the work of Nobel laureate economist William Nordhaus is widely referenced. His Dynamic Integrated Climate-Economy (DICE) model has influenced many scientists' and economists' own modeling of tipping points, and the US government already relies on these "integrated assessment models" to formulate policy and calculate the "social cost of carbon."

This interdependency between economics, policy, politics, public opinion, and regulation should be familiar from the crash of 2008. The dangerous over-leveraging that generated that crisis was an open secret; but those in a position, politically and culturally, to do something about it were willing to deny the systemic risk it posed. One can find the same denialism in the climate debate. According to the Center for American Progress, 139 members of the current US Congress (109 representatives and 30 senators; a majority of the Republican caucus) "have made recent statements casting doubt on the clear, established scientific consensus that the world is warming – and that human activity is to blame."



Cochrane makes an eloquent case for why policymakers should focus on creating coherent, scientifically valid policy responses to climate change and financial systemic risk separately, rather than pursuing climate financial regulation. But this isn't an either/or choice. We need both kinds of policies, and we need coordination between the two domains.

We therefore should welcome the approach being taken by US Secretary of the Treasury Janet Yellen's Financial Stability Oversight Council, which has brought together leading regulators and tasked them with preventing a repeat of the 2008 Wall Street meltdown. Yellen has said she will use this multi-regulator body as her principal tool to assess climate risks and develop the disclosure policies needed to shift to a low-carbon economy.

Counterintuitive though it may be, climate-related financial regulation could usher in a new form of political accountability, by putting governments and individuals (elected and unelected) on the hook for their decisions. Such accountability was notably absent before and during the 2008 crisis. With political will, serious thinking about regulating climate financial risk could open up a fruitful debate for similar action on all neglected policy fronts.