

# A global incentive to reduce emissions



- **A fair proposal for reducing emissions would go some way towards reassuring that we do not live on another planet. And it would give everyone a greater incentive to save this one**

With President Joe Biden's administration recommitting the United States to the Paris climate agreement, and with a major United Nations climate-change conference (COP26) coming later this year, there is new hope for meaningful global policies to meet the challenge. But while mounting evidence of increasing climate volatility – unprecedented wildfires in Australia, droughts in California and Sub-Saharan Africa, intensifying hurricane and cyclone seasons – suggests that we must move fast in curbing planet-warming greenhouse-gas (GHG) emissions, there are serious impediments to concluding any new global accord.

Economists generally agree that the way to reduce GHG emissions is to tax them. But such taxes almost certainly will cause disruptive economic changes in the short run, which is why discussions of imposing them tend to run quickly into

free-rider or fairness problems.

For example, industrialised countries such as the US are concerned that while they work hard to reduce emissions, developing countries will keep pumping them out with abandon. But at the same time, developing countries like Uganda point out that there is profound inequity in asking a country that emitted just 0.13 tonnes of carbon dioxide per capita in 2017 to bear the same burden as the US or Saudi Arabia, with their respective per capita emissions of 16 and 17.5 tonnes.

The least costly way to reduce global emissions would be to give every country similar incentives. While India should not keep building more dirty coal plants as it grows, Europe should be closing down the plants it already has. But each country will want to reduce emissions in its own way – some through taxation, others through regulation. The question, then, is how to balance national-level priorities with global needs so that we can save the one world we have.

The economic solution is simple: a global carbon incentive (GCI). Every country that emits more than the global average of around five tonnes per capita would pay annually into a global incentive fund, with the amount calculated by multiplying the excess emissions per capita by the population and the GCI. If the GCI started at \$10 per tonne, the US would pay around \$36 billion, and Saudi Arabia would pay \$4.6 billion.

Meanwhile, countries below the global per capita average would receive a commensurate payout (Uganda, for example, would receive around \$2.1 billion). This way, every country would face an effective loss of \$10 per capita for every additional tonne that it emits per capita, regardless of whether it started at a high, low, or average level. There would no longer be a free-rider problem, because Uganda would have the same incentives to economise on emissions as the US.

The GCI also would address the fairness problem. Low emitters, which are often the poorest countries and the ones most vulnerable to climatic changes they did not cause, would receive a payment with which they could help their people

adapt. If the GCI is raised over time, the collective sums paid out would approach the \$100 billion per year that rich countries promised to poor countries at COP15 in 2009. That would far exceed the meagre sums that have been made available thus far. Better still, the GCI would assign responsibility for payments in a feasible way, because big emitters typically are in the best position to pay.

Moreover, the GCI would not snuff out domestic experimentation. It recognises that what a country does domestically is its own business. Instead of levying a politically unpopular carbon tax, one country might impose prohibitive regulations on coal, another might tax energy inputs, and a third might incentivise renewables. Each one charts its own course, while the GCI supplements whatever moral incentives are already driving action at the country level.

The beauty of the GCI is its simplicity and self-financing structure. But it would require one adjustment in how per capita emissions are computed. What is consumed is as important as how it is produced, so there will need to be some accounting for the portion of emissions embedded in imported goods; these will need to be added to the importer's emissions tally and subtracted from the exporter's.

Also, most experts would regard a \$10 GCI as too low. But the point is to start small in order to get the scheme going and iron out the kinks. After that, the GCI can easily be raised by common agreement (or reduced, if there were some miraculous breakthrough in emissions-reduction technology). But to avoid creating uncertainty after an initial period of calibration, changes might be considered only every five years or so.

What about alternative proposals that have global effects? Some industrialised countries plan to impose a domestic carbon tax alongside a border-adjustment tax, effectively applying the same tax rate to goods coming in from countries that do not have a carbon tax. The border taxes might push other countries to impose their own carbon taxes, but it certainly would not improve fairness. On the contrary, they would let

large importing countries impose their tax preferences on poor exporting countries and might serve as a Trojan horse for protectionism.

To be sure, the bureaucrats who dominate international meetings will want to dismiss this proposal as “interesting but simplistic” (or words to that effect). The most powerful countries are also the biggest emitters, and few want to pay into a global fund, especially in these times of massive budget overruns.

But a GCI is by far the best option available. As rich countries cast about for remedies to domestic inequality, they should spare a thought for inequality between countries, which the pandemic and the unequal vaccine rollout will only worsen. Developing countries feel abandoned today. A fair proposal for reducing emissions would go some way toward reassuring them that they do not live on another planet. And it would give everyone a greater incentive to save this one.

– Project Syndicate

• *Raghuram G Rajan, former governor of the Reserve Bank of India, is Professor of Finance at the University of Chicago Booth School of Business and the author, most recently, of The Third Pillar: How Markets and the State Leave the Community Behind.*

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## **Canada's Pembina agrees to buy rival Inter for \$6.9bn**



Pembina Pipeline Corporation agreed to acquire Inter Pipeline for about C\$8.3 billion (\$6.9bn) in an all-stock deal that will create one of the largest energy companies in Canada.

The proposal from Pembina trumps a hostile takeover offer for Inter made by Brookfield Infrastructure Partners earlier this year. Inter spurned that approach and began a review of its options, which included a sale.

The Pembina-Inter combination is the largest Canadian energy transaction in four years. It continues a trend of consolidation in the sector in the face of low oil prices and regulatory uncertainty, highlighted by US President Joe Biden's cancellation of TC Energy's Keystone XL oil export pipeline in January.

Adding Inter will give Pembina additional pipeline infrastructure across Western Canada, connecting the region's oil sands and natural gas producers with domestic and foreign customers. Pembina, a major processor of natural gas liquids, will increase its ability to deliver condensate on Inter's system to the oil sands, where the product is used to dilute the thick bitumen that's dug out of the ground so that it can be transported by pipeline or rail.

The two Calgary-based pipeline companies said on Tuesday the takeover will lead to annual cost savings of as much as C\$200 million and create an operator with capacity to transport 6.2 million barrels a day of gas, oil and natural gas liquids throughout the region. The merged company will run by Pembina's senior executive team.

Pembina said its offer values Inter at C\$19.45 per share prior to the start of trading, while Brookfield's offer was C\$16.50. Brookfield declined to comment on Tuesday's merger announcement.

"Brookfield could easily come back at a \$19.50 to \$20 cash offer and probably still make the numbers work," Ryan Bushell, a portfolio manager at Newhaven Asset Management, said. "We'll find out pretty shortly how badly Brookfield wanted this in the first place. But if I had to guess, I'd say they'd probably want to wash their hands of it."

Inter shares rose 8.8 per cent to C\$19.09 while Pembina fell 1.9 per cent to C\$38.15 at 12.26 pm in Toronto.

The Inter acquisition follows Pembina's purchase of a Canadian unit and pipeline assets from Kinder Morgan for about \$4.5bn in 2019 and its takeover of British Columbia pipeline operator Veresen for C\$5.8bn two years earlier. Pembina chief executive Michael Dilger said his company has tried to buy Inter on two previous occasions.

"Third time is lucky," he said on a conference call. "This is just the right time."

Pembina will also take on Inter's Heartland Petrochemical Complex, which is under construction in Alberta. Inter has been looking for a partner to help fund the C\$4.2bn construction cost while also trying to sign long-term sales contracts for 70 per cent of the plant's capacity.

Pembina previously suspended work on the petrochemical plant



it was planning to build in Alberta in a venture with Kuwait's Petrochemical Industries. The odds of reviving that project "go up a lot now," Mr Dilger said. "If you can add another plant, you are amortising those costs by half."

Buying Inter gives Pembina energy terminals in Sweden and Denmark. Inter chief executive Christian Bayle had plans to sell the European assets, Mr Dilger said. "It looks like a good business," he added. "It is strategic. We will see."

Scotia Capital is Pembina's financial adviser, while TD Securities advised Inter. JPMorgan Chase & Co. is the financial adviser to the special committee of Inter's board and gave a fairness opinion.

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## EU deficit rules to remain suspended in 2022



Rules against overspending by EU governments will remain suspended through 2022, leaving more time for stimulus plans to boost the economy to pre-crisis levels, the European Commission said on Wednesday.

“The recovery remains uneven and uncertainty is still high, so economic policy must remain supportive in both 2021 and 2022,” EU Executive Vice President Valdis Dombrovskis said.

The EU executive suspended the public spending rules for national governments in March 2020 as the European Union sank into its deepest recession since World War II, thanks to Covid-19 restrictions.

Based on current forecasts, “the general escape clause will stay activated in 2022 but no longer so as of 2023.”

Trailing the strong recoveries in the US and China, the economy in Europe fell into a second recession early this year and is not expected to regain its pre-crisis form until later in 2022.

The EU has been criticised for doing less to boost its economy than other powers, but has pinned its hopes on a 750 billion euro recovery programme, whose effects should begin to kick in later this year.

“A bleak winter is giving way to a bright spring for the European economy,” EU economic affairs commissioner Paolo Gentiloni said.

## **Telling the truth**

Known as the Stability and Growth Pact, the EU’s spending rules limit deficit spending at three percent of the overall economy and debt at 60 percent.

The rules are often violated but, while countries in theory risk penalties for ignoring them, no government has ever been sanctioned.



The limit on debt is often overshoot even in normal times and 13 countries are currently above the limit including Italy, Spain and France where debt is over 100 percent of GDP.

The pact mainly empowers the EU executive and fellow member states to keep a careful eye on how national governments run their budgets.

The commission, with the backing of the member states, also signals what reforms need to be carried out in order to get a thumbs up from the EU.

The fiscal rules are however quite controversial, with several member states complaining that they are ineffective and outdated.

There is also an argument over the actual danger of running a high debt when the financial markets seem to be unbothered by the public debt piles in countries like Italy, France or Belgium.

The EU-27 are committed to reforming the pact, with some hopeful that this will be done before the end of the suspension, which is now most likely on January 1, 2023.

But Gentiloni warned that reforming the rules will be highly controversial, with the so-called "frugal" countries in the north of Europe reluctant to show leniency to their southern, more indebted neighbours.

"We will work very strongly for this goal but when I'm saying that it is not an easy one, I am only telling the truth," he told reporters.

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# Le premier parc solaire flottant en haute altitude au monde est en Suisse



Dans les Alpes valaisannes en Suisse, le lac des Toules accueille le premier parc solaire flottant en haute altitude au monde. Ses panneaux produisent 50% d'énergie en plus que ceux installés en vallée.

*“Ce projet pilote produit 800 000 kWh par an,”* explique Maxime Ramstein, responsable de projets chez Romande Energie, l'entreprise, premier fournisseur d'électricité de Suisse romande, qui est à l'origine de cette installation. *“Ce qui correspond aux besoins de 220 foyers,”* précise l'ingénieur.

# Des conditions avantageuses en montagne

A 1810 mètres d'altitude, les coûts de mise en place plus élevés sur l'eau qu'au sol sont en partie compensés par des conditions plus avantageuses : en effet, en montagne, le rayonnement solaire est plus fort.

*“Le rayonnement solaire est meilleur en montagne,”* souligne Maxime Ramstein. *“Les températures plus faibles entraînent de meilleures performances et il y a aussi l'albédo, cet effet réfléchissant du rayonnement solaire, qui est très élevé au sol, sur la glace et sur la neige,”* fait-il remarquer.

## Limitation de l'impact environnemental

Le parc solaire est installé sur un réservoir artificiel pour la production hydroélectrique et non sur un lac naturel, limitant ainsi son impact environnemental.

*“Il se vide chaque année et il se remplit à la fonte des neiges au printemps et en été,”* indique le responsable de projets. *“Donc il y a très peu de flore et de faune et l'impact est très faible sur l'environnement,”* dit-il.

*“Une durée de vie de 50 ans”*

En cas de succès, ce projet pilote mis en service en décembre 2019 sera agrandi pour produire de l'énergie pour couvrir les besoins de plus de 6000 foyers.

*“Nous avons développé une structure d'une durée de vie de 50 ans avec deux cycles de 25 ans pour les modules solaires,”* déclare Guillaume Fuchs, codirecteur Solutions Energie chez Romande Energie.

*“On compte agrandir ce projet sur le lac des Toules, mais aussi reproduire ce type de technologie sur un autre lac,”* annonce-t-il.

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# Opec+ signs off on July increase at meet as oil market tightens



LONDON (BLOOMBERG) – The Opec group of oil producers and its allies, or Opec+, stuck to its plan to hike oil output next month, as Saudi Arabia’s energy minister struck a bullish tone about the global recovery.

The group will press ahead with an increase of 841,000 barrels a day next month, following hikes in May and June, according to delegates.

As the market tightens, a more difficult decision looms for the group as it tackles the deficit that is set to emerge later this year.

“The demand picture has shown clear signs of improvement,” Saudi Energy Minister Abdulaziz bin Salman said as the meeting started.

Russian Energy Minister Alexander Novak also spoke of the “gradual economic recovery”.

The Organisation of Petroleum Exporting Countries (Opec) and its allies have spent more than a year rescuing prices from historic lows and only cautiously adding supply.

Now the story is shifting: Oil prices above US\$71 are fuelling inflation concerns and if Opec does not add more oil, there is a risk the market becomes too tight, undermining the global recovery.

But the cartel is also embracing caution. Prince Abdulaziz echoed the concerns of his fellow delegates when he said there are still “clouds” on the horizon. Iran’s potential return to international markets is one factor weighing on ministers’ decision-making. The impact of new variants of Covid-19 is another.

And while there is a wide deficit in the market to fill in the second half of the year, those two considerations could see some producers argue for a pause before further hikes.

“Covid-19 is a persistent and unpredictable foe and vicious mutations remain a threat,” Opec secretary-general Mohammad Barkindo said.

After next month, Opec+ is scheduled to hold supply until April 2022, according to the deal signed a year ago to rescue producers from a bitter price war.

While the agreement can be renegotiated – and there will be pressure to do so as demand continues to recover – it provides a fallback position for the group.

Tuesday’s meeting did not tackle the period after next month,

according to two delegates.

If the alliance does not boost output later this year, prices will face further upward pressure, International Energy Agency executive director Fatih Birol told Bloomberg Television earlier on Tuesday.

“One thing is clear: In the absence of changing the policies, with the strong growth coming from the United States, China, Europe, we will see a widening gap” between demand and supply, Mr Birol said.

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## **LNG Makers Get Hint to Go Greener From U.S. Energy Secretary**





The days of promoting liquefied natural gas as “freedom gas” or “molecules of freedom” have ended at the U.S. Department of Energy.

During a Friday visit to Houston, U.S. Secretary of Energy Jennifer Granholm said the Biden administration would rather promote and sell a cleaner version of the superchilled power plant fuel. The statement marks a policy shift from the Trump administration, which rolled back environmental regulations and heavily promoted U.S. LNG around the world.

The energy industry has been under mounting pressure from investors and governments to step up efforts to reduce greenhouse-gas emissions, with some spectacular victories for activists over Big Oil this week. U.S. LNG makers are seeking to green their image in order to land supply deals with environmentally conscious customers in Europe and Asia.

The Biden administration, Granholm said, is looking closely at carbon capture and sequestration technology, which would take emissions from LNG plants and other facilities, move them by pipeline and then inject them underground.

“We want to be able to promote and sell clean technologies,” Granholm said following a tour at an Air Liquide SA hydrogen plant in La Porte, Texas. “That could be natural gas that has been decarbonized, or that could be natural gas where the methane flaring has been eliminated.”

Houston-based Cheniere Energy Inc., the largest U.S. LNG exporter, recently announced that it would be including carbon emission tags with its cargoes, allowing customers to audit the environmental footprint of a shipment. One of the company’s LNG tankers recently participated in a study analyzing emissions on a roundtrip between Texas and Europe.

Arlington, Virginia-based Venture Global LNG announced Thursday that it plans to implement carbon capture and sequestration at three export terminals in Louisiana, where one is already under construction and expected to produce its first drops of the fuel later this year.

Still seeking to sell enough contracts to support its proposed Rio Grande LNG export terminal in South Texas, Houston-based LNG developer NextDecade Corp. has also pledged to add carbon capture and storage to its plant.

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## **This Time Is Different: Outside OPEC+, Oil Growth Stalls**



(Bloomberg) – “This time is different” may be the most dangerous words in business: billions of dollars have been lost betting that history won’t repeat itself. And yet now, in the oil world, it looks like this time really will be.

For the first time in decades, oil companies aren’t rushing to increase production to chase rising oil prices as Brent crude approaches \$70. Even in the Permian, the prolific shale basin at the center of the U.S. energy boom, drillers are resisting their traditional boom-and-bust cycle of spending.

The oil industry is on the ropes, constrained by Wall Street investors demanding that companies spend less on drilling and instead return more money to shareholders, and climate change activists pushing against fossil fuels. Exxon Mobil Corp. is paradigmatic of the trend, after its humiliating defeat at the hands of a tiny activist elbowing itself onto the board.

The dramatic events in the industry last week only add to what is emerging as an opportunity for the producers of OPEC+, giving the coalition led by Saudi Arabia and Russia more room

for maneuver to bring back their own production. As non-OPEC output fails to rebound as fast as many expected – or feared based on past experience – the cartel is likely to continue adding more supply when it meets on June 1.

### 'Criminalization'

Shareholders are asking Exxon to drill less and focus on returning money to investors. "They have been throwing money down the drill hole like crazy," Christopher Ailman, chief investment officer for CalSTRS. "We really saw that company just heading down the hole, not surviving into the future, unless they change and adapt. And now they have to."

Exxon is unlikely to be alone. Royal Dutch Shell Plc lost a landmark legal battle last week when a Dutch court told it to cut emissions significantly by 2030 – something that would require less oil production. Many in the industry fear a wave of lawsuits elsewhere, with western oil majors more immediate targets than the state-owned oil companies that make up much of OPEC production.

"We see a shift from stigmatization toward criminalization of investing in higher oil production," said Bob McNally, president of consultant Rapidan Energy Group and a former White House official.

While it's true that non-OPEC+ output is creeping back from the crash of 2020 – and the ultra-depressed levels of April and May last year – it's far from a full recovery. Overall, non-OPEC+ output will grow this year by 620,000 barrels a day, less than half the 1.3 million barrels a day it fell in 2020. The supply growth forecast through the rest of this year "comes nowhere close to matching" the expected increase in demand, according to the International Energy Agency.

Beyond 2021, oil output is likely to rise in a handful of nations, including the U.S., Brazil, Canada and new oil-producer Guyana. But production will decline elsewhere, from

the U.K. to Colombia, Malaysia and Argentina.

As non-OPEC+ production increases less than global oil demand, the cartel will be in control of the market, executives and traders said. It's a major break with the past, when oil companies responded to higher prices by rushing to invest again, boosting non-OPEC output and leaving the ministers led by Saudi Arabia's Abdulaziz bin Salman with a much more difficult balancing act.

### Drilling Down

So far, the lack of non-OPEC+ oil production growth isn't registering much in the market. After all, the coronavirus pandemic continues to constrain global oil demand. It may be more noticeable later this year and into 2022. By then, vaccination campaigns against Covid-19 are likely to be bearing fruit, and the world will need more oil. The expected return of Iran into the market will provide some of that, but there will likely be a need for more.

When that happens, it will be largely up to OPEC to plug the gap. One signal of how the recovery will be different this time is the U.S. drilling count: It is gradually increasing, but the recovery is slower than it was after the last big oil price crash in 2008-09. Shale companies are sticking to their commitment to return more money to shareholders via dividends. While before the pandemic shale companies re-used 70-90% of their cash flow into further drilling, they are now keeping that metric at around 50%.

The result is that U.S. crude production has flat-lined at around 11 million barrels a day since July 2020. Outside the U.S. and Canada, the outlook is even more somber: at the end of April, the ex-North America oil rig count stood at 523, lower than it was a year ago, and nearly 40% below the same month two years earlier, according to data from Baker Hughes Co.

When Saudi Energy Minister Prince Abdulaziz predicted earlier this year that “‘drill, baby, drill’ is gone for ever,” it sounded like a bold call. As ministers meet this week, they may dare to hope he’s right.

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## **Exxon Mobil’s last-ditch attempt to stave off a climate vote coup**



It was a stunning moment for Exxon Mobil Corp and the wider corporate world: a tiny activist fund had succeeded in changing the company’s board.

But in the hours leading up to this week’s annual shareholders meeting, Exxon went to extraordinary lengths to head off the threat from a campaign about which it had been largely dismissive months earlier.

Exxon telephoned investors the morning of the ballot – and even during an unscheduled, hour-long pause during the virtual meeting – asking them to reconsider their votes, according to several of those who received calls.

Some said they found the last-ditch outreach and halt to the meeting unorthodox and troubling.

“It was a very unusual annual general meeting,” said Aeisha Mastagni, a fund manager at the California State Teachers’ Retirement System, a major Exxon investor that backed the



activist campaign from the beginning. "It didn't feel good as an investor."

The May 26 meeting concluded with Exxon stating that two of the dissident's four director nominees had been elected, a coup for Engine No 1, a little-known investment firm calling for the company overhaul its strategy, cut costs and come up with a plan to address climate change.

Its victory is widely seen as a warning to the rest of the industry that investors will now hold energy companies to account for environmental concerns.

The full results of the vote still haven't been disclosed; a third Engine No 1 nominee is still in the running to fill one of the two remaining board seats.

While there's no suggestion Exxon broke any rules during Wednesday's meeting, such tactics are unusual for a blue-chip company.

In response to questions about the meeting, the company said it's been "actively engaged" with investors and welcomes the newly elected directors.

Net Zero Exxon opposed Engine No 1 from the outset.

The fund holds a stake in Exxon of just 0.02%, valued at about \$54mn.

The oil company described the fund's four candidates as unqualified and said its proposals would imperil Exxon's dividend.

Still, the company made a concession in March to another investor, D.E. Shaw & Co, appointing two new directors, including activist investor Jeff Ubben.

But Exxon still refused to meet with the Engine No 1 candidates.

A significant hurdle faced by the company was winning support of large institutions including its top three investors, Vanguard Group Inc, BlackRock Inc

and State Street Corp, which collectively hold a stake of more than 21%. BlackRock has been vocal about its voting guidelines on climate change.

Discussions with many large investors in the run-up to the

vote were primarily focused on Exxon's strategy to get to net zero emissions by 2050, and not the company's financial performance, according to people familiar with the talks.

Chief Executive Officer Darren Woods got down in the trenches during the proxy fight and made commitments to keeping the dialog going after the meeting, the people said.

But Vanguard, BlackRock and State Street ultimately supported a partial slate of nominees from Engine No 1. An indication the fight might be tilting in Engine No 1's favour came mid-May with the partial backing from two leading proxy advisory firms.

Two days before the vote, Exxon said it would appoint two new directors, one with "climate experience" and another with industry expertise.

On the morning of the meeting, Engine No 1 issued a statement alerting shareholders that Exxon may try, "in a targeted manner," to persuade them to change their vote.

Sure enough, by the time the virtual meeting began at 9:30am.

Dallas time, Exxon representatives were ringing investors. In some cases, those calls entailed cajoling holders to at least reduce their support to one or two dissident nominees rather than all four, according to people familiar with the conversations, who asked not to be identified because the discussions were private.

At about 10:15 a.m., investor relations head Stephen Littleton announced proceedings would be paused for 60 minutes, citing the volume of votes still coming in.

As classical music played on the webcast, emails started flying between investors left bewildered by the halt.

One executive at a major Exxon shareholder said they were contacted during this hiatus and pushed to change their vote.

The person, who has decades of experience dealing with boardroom elections, said that while such appeals a day before a vote are commonplace, it was the first time they'd fielded such a request during a meeting.

Meanwhile, Engine No.1 released another statement saying shareholders should "not be fooled by ExxonMobil's last-ditch

attempt to stave off much-needed board change.” Charlie Penner, head of active engagement at Engine No 1, went on television to complain. “They’re doing a tactic called the whittle-down, where they tell a shareholder to draw down your votes for this person, they tell another shareholder they’ll draw down their votes for this person, and they gradually try to whittle people down,” he told CNBC. “It has a very banana-republic feel.”

The pause was something that Anne Simpson – the California Public Employees’ Retirement System’s managing investment director for board governance and sustainability – had never seen before in her three-decade career.

Simpson didn’t get a call from Exxon about altering her votes. But the practice still disturbed her. “If the comments are true, this raises the question about the sanctity of the ballot box and whether companies should have privileged access,” she said.

The meeting didn’t conclude until almost three hours after it first began, with Littleton reading out a summary of the preliminary tally of votes.

“We welcome the new directors Gregory Goff and Kaisa Hietala to the board,” Woods said in his concluding remarks, “and look forward to working with them constructively and collectively on behalf of all shareholders.”

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## **Spain to invest 1.5B euros in ‘green hydrogen’**



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The goal is for Spain to become Europe's leading hydrogen producer using renewable sources instead of fossil fuels to curb greenhouse gas emissions and create jobs, he said.

"The Spanish government is firmly committed to green hydrogen," the Socialist premier said at a ceremony in Toledo, just south of Madrid.

His government expects the outlay will stimulate 8.9 billion euros of mainly private-sector investment to develop the technology by 2030.

Madrid has already received over 500 "green hydrogen" project proposals from energy firms, a government statement said.

Creating “green” or emissions-free hydrogen is seen as a key step towards developing sustainable energy sources and slashing carbon emissions.

One reason for the strong interest in hydrogen technology is when used to fuel motors, the only emission is water vapour.

But it is expensive to produce and the electricity needed generates a lot of carbon dioxide emissions or other pollutants.

Green hydrogen is produced via electrolysis – an electrical current passing through water – with wind, solar or hydro-electric power providing the electricity.

Europe in particular is anxious to get a handle on the new and still costly fuel, having missed the boat on solar and battery technology, which is dominated by China.

Experts predict green hydrogen using renewable energy will soon plunge in cost and become cheaper than natural gas in many areas.

US engine maker Cummins announced Monday it would spend 50 million euros to build one of the world’s biggest electrolyser plants for the production of green hydrogen in Spain.

The plant, which will be built in the central region of Castilla-La Mancha, is expected to open in 2023.

“Spain offers a strong and dynamic local environment for hydrogen production, and we are excited to invest,” said Cummins chairman Tom Linebarger.

Spain is set to receive 140 billion euros – half in direct payments, half in loans – from the 750 billion-euro recovery plan adopted by EU leaders last year as the economy reeled under virus lockdown restrictions. (AFP)

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# Climate change goals: green art of the possible



By Daniel Gros/Brussels

US President Joe Biden recently gathered 40 world leaders for a summit on combating climate change, a welcome sign of progress on forging a global strategy. But tackling global warming is a marathon, not a sprint. And while the recent increase in climate ambition from the United States and the European Union is welcome, more difficult choices lie ahead.

Back in 2009, for example, the US led the global effort to achieve the Copenhagen Accord at the COP15 climate-change summit, which was attended by more than 100 world leaders. But hopes of a meaningful US contribution were subsequently killed by bipartisan opposition in Congress, which balked at the perceived cost of reducing emissions.

Biden, who was then vice president, faces a similar problem today: how to make good on his pledges while knowing that



Congress will not approve any serious climate measure. He has therefore chosen the path of least political resistance, which is why Biden's climate plan carefully avoids notions such as a "carbon tax" or a "cap-and-trade" emissions scheme, both of which are politically toxic in the US.

Biden's target of halving US emissions by 2030 sounds ambitious, but the substance is actually much less demanding. Governments invariably choose the benchmark year that makes the biggest headlines. The US has chosen 2005, because that represents the high-water mark for US emissions. Since then, emissions have already declined by about 25%, thanks to the substitution of shale gas for coal. Reducing emissions by 50% from 2005 levels requires a further fall of about 30%.

The EU also has chosen a convenient baseline, namely, its own peak emissions year of 1990. But its target of lowering emissions by 55% by 2030 entails a further reduction of over 40% from today's level.

Given that US per capita emissions are currently about twice the European level, achieving Biden's pledge would reduce them only to the EU's level of today by 2030. By that year, US per capita emissions would still be more than double those of the EU.

The key to the Biden administration achieving its 2030 target is its pledge to make the US power sector emissions-free by 2035. But this might be difficult to achieve, given that fossil fuels currently account for about 60% of US electricity (compared to about 34% in the EU).

Moreover, making one sector totally emissions-free while taking little action in other areas increases the cost of reaching the overall target. This is a mistake the EU previously tried to avoid when establishing its Emissions Trading System (ETS), which covers both industry and the power sector.

The Biden plan boldly asserts that decarbonising the power sector "can be achieved through multiple cost-effective pathways." This is difficult to believe. For starters, it took more than a decade of subsidies before renewables made a

meaningful contribution to the overall energy mix in Europe. The cost of renewables has fallen greatly over the last decade, in many cases by a factor of five, partly thanks to these subsidies setting in motion a cost-reduction process as demand for solar panels and batteries increased.

The Biden administration also says that carbon capture and storage can make a potentially important contribution. But CCS remains an expensive technology, with a much smaller potential for cost reductions.

US climate policy thus makes little sense from an economic point of view. Biden's approach is instead best understood as a political strategy aimed at so-called battleground states such as Pennsylvania, where coal remains economically and politically important. A carbon price will become possible in the US only when the last coal mine has closed.

The European approach – with the ETS and its emissions allowances that can be traded across sectors and countries – looks much more sensible at first sight. But a closer look reveals similarities with Biden's plan. When the ETS was created, industrial firms argued that sectors subject to international competition should receive their allowances for free to avoid so-called "carbon leakage." Predictably, the risk of carbon leakage was found to exist in almost all industries. EU industry thus obtained most of the allowances for free. The ETS worked only because the EU's power sector was treated differently, given that there is no international competition in this sector.

The implicit deal underpinning the ETS was thus that industry would be spared the pain of emissions reductions. The entire burden of adjustment fell on power generation, where an increasing supply of renewables made it possible to reduce emissions by about a quarter over the last decade. EU industrial emissions have not fallen significantly. But this might change now that the price of emissions certificates, which for many years had remained in the single digits, has reached almost €50 (\$60) per ton.

Free allocation of emissions allowances also meant that the EU

has had little justification for introducing a carbon border tax. Such a measure would be justified (and should be approved by the World Trade Organisation) only if the free allowances were abolished at the same time – but this is vehemently opposed by industry.

The underlying political deal is thus similar on both sides of the Atlantic: decarbonise the power sector first, while sheltering industry from higher costs. Europe's experience suggests that this can generate some modest progress in reducing emissions, but achieving the more ambitious targets ahead will require tougher choices. The US will not be able to rely on renewables providing all its power, and the EU will have to start putting pressure on its own industry. – Project Syndicate

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