CLIMATE CRISIS NEWSLETTER

A fortnightly newsletter brought to you by XR Gairloch

ISSUE 112 28/5/22

Editorial

Energy prices should be getting cheaper not more expensive ……..

The European Commission recently warned that the "fast" (fast in EU timescales) decoupling from Russian energy could "lead to a period of higher and more volatile energy prices, due to the rising cost of fossil fuels,"

"Fast" under the EUs recent plan, means Russian gas usage will be reduced by two thirds by the end of 2022. This will be followed by a more gradual, linear reduction of reliance due to the time it takes to build up renewable energy capacities, a senior European Commission official said. "If you would take that line, just for the sake of argument, you would reach independency, in about 2026 or 2027," the official added.

Since the war began, the UK has imported in the region of £250m worth of oil from Russia - this is known because Green Pease have been tracking Russian tankers coming into the UK. **Russian fossil fuel tracker Twitter bot**. Gas from Russia is currently being vastly discounted to try and sell it. Shell recently got caught buying this and have now said they won't buy any more Russian oil on the 'spot' market (which means they are still buying it on the main market).

The UK only imported less than 5% of our gas and 8% of our oil from Russia. Isn't it ironic that we have large quantities of gas and oil on our door step in the North Sea but are paying huge price increases. The cost of extracting the gas and oil has not gone up so the fossil fuel companies are making a fortune and that was proven to be the case when Shell and BP announced record profits for their first quarters.

UK Energy Security Strategy

So the UK governments knee jerk reaction to the Russian invasion of Ukraine and high energy prices is to develop a Energy Security Strategy that includes

- Opening up more oil and gas fields in the North Sea (recently incentivized by a 90% tax relief on the Windfall tax)

  This is wrong for two reasons, never mind contributing to global warming:

  Opening up new oil and gas fields in the North Sea will do nothing to lower energy bills or secure energy supplies for the UK, but it will make the climate crisis a whole lot worse. The oil and gas in new fields won't be controlled by the UK, it will belong to the fossil fuel companies who own the rights to extract the oil and gas. They won't hold oil

and gas especially for the UK market at affordable prices they will as they do now sell it on the international market at the highest price they can get.

New oil and gas fields starting now won't come on stream until 2026 by which time we will have much more renewable energy and reduced our reliance for oil and gas by our increased use of electric cars and electric heat pumps and hydrogen boilers.

It's now cheaper to switch from coal to renewables instead of coal to gas, report shows. **Read article.**

- Building another 8 nuclear power stations between now and 2030

  This is wrong on so many levels:

  Nuclear energy isn't a green fuel as nuclear waste is with us for thousands of years and we are current struggling to find long term storage places for our current nuclear waste never mind new waste.

  Building new nuclear power plants can be vastly more expensive than renewables and can take decades to build. The costs of the nuclear plant currently being built at Hinkley Point C will see costs soar by another £3bn, warns EDF. Currently this plant will not start generating power until 2028. That's one currently under construction so the chances of building another 8 before 2030 that haven't even gone through consultation and planning yet isn't going to happen.

  There could still be time to fix climate – but not with UK's nuclear plans. **Read article.**

  Also to pay for these power stations there will be a levy put on every ones energy bills therefore making energy even more expensive.

  UK's nuclear power push will add to energy bills, ministers say. **Read article.**

- Keeping the moratorium for onshore wind farms

  This is the cheapest and quickest for of energy to install, so why has the UK government not stopped the moratorium. It's political and down to middle class tory voters not wanting a wind farm near where they live.

  There were over a hundred possible onshore wind farms sites in the UK before former Conservative Prime Minister put a moratorium on them being built, which could be easily and cheaply activated.

- Additional 10GW of offshore wind energy

  Yes increasing a further 10 GW of offshore wind energy on top of the 40GW recommended but if you do not have the facilities to store the energy (batteries, the production of hydrogen or stored water for hydro schemes) then when we are about to generate too much wind energy we will have to shut down the wind turbine, which is wasteful.

Record Wind in Scotland Means Grid Tells Some Turbines to Stop because we are generating too much energy. **Read article.**

UK offshore wind will be "more valuable" than North Sea oil ever was. **Read article.**

Further Errors in UK Energy Strategy

Another flaw in the Governments Energy Security Strategy is promoting blue hydrogen (hydrogen made from fossil fuels).

In face of soaring gas prices, UK Government urged to reconsider support for blue hydrogen. **Read article.**

Fracking was also to be reassessed in the Energy Security Strategy, after previous bans in England and a moratorium in Scotland. As they were refused, not on financial reasons but on pollution, earth tremors etc, none of these reasons have changed so it ultimately should be refused again.

How we could drastically cut our energy bills

There is not a shortage of gas currently in the UK, so why the high bills. Energy prices (gas and electricity) are based on international gas prices and as countries like Germany who imported 40% of its gas from Russia saw this supply source having to reduce/shut down the demand for its gas elsewhere made the international price of gas soar.

UK has so much gas that prices are the lowest for 18 months. So why is the price so high. **See video.**

By the introduction of variable local electricity pricing system consumers in the UK could save £30 billion by 2035, a recent study by Energy Systems Catapult and Octopus Energy claims.

Consumers in Northern England and Scotland would see the highest savings on their energy bills due to the large amount of energy generated from local wind farms. Licences for offshore wind farms in Scottish waters have been recently issued for generating 25GW per year while Scotland only uses approximately 5GW of electric per year, so within the next 10 years Scotland will become a major exporter of renewable electricity.

Dirty business going on behind closed doors as big polluters AGMs going online to avoid protesters ……

It proves that protestors are winning the argument when big polluters have to hide online to carry out their dirty business as Lloyds and BP did recently when they moved their AGMs online. This was because they feared disruption from protesters and may-be because they knew that shareholders re-fusal to endorse increasing emission reduc-tion plans would be looked upon badly.

"Lloyd's faces a growing level of protests because, as the world's largest insurance market, they have a responsibility to act in accordance with climate science and the recommendations of the IEA [International Energy Agency] – and they are failing to do so," said Lindsay Keenan, European coordinator of the Insure Our Future climate campaign.

Despite what Bruce Carnegie-Brown the Chairman of Llyods would like us to believe, the reality is that Lloyd's continues to provide insurance for new coal, oil and gas projects de-spite its supposed ESG [environmental, social and governance] policy.

A string of other City institutions, including HSBC, Barclays and Standard Chartered, have already had their AGMs disrupted by climate protesters in the past month.

Lloyd's braces for climate activist disruption at AGM as BP shareholders reject stronger emissions plans. **Read article.**

Three arrested at Shell AGM as protesters chant 'We will stop you. **Read article.**

Windfall Tax…….

After fossil fuel companies made record profits at the expense of members of the public trying to pay soaring energy bills it was time for some Levelling Up.

Plans to impose a windfall tax on North Sea oil and gas firms were voted down last week by the Con-servatives in the House of Commons, despite gather-ing support from both Labour and the Liberals.

The shadow environment secretary, Ed Miliband, said: "The case for a windfall tax on the oil and gas giants making record profits whilst en-ergy bills spiral for working people has been clear since Labour first proposed it in Janu-ary. The Conservatives have opposed it at every turn. Now, as their excuses are wearing thin, we hear that they are finally considering it. But how much more time does this gov-ernment need to make up its mind, whilst the British people suffer?"

The Conservative government eventually caved in to mounting pressure and on the 26th

May announced there would now be a windfall tax but was calling it a "temporary, targeted energy profits levy" – a windfall tax, of £5 billion on energy companies.

Rishi Sunak announces £5bn windfall tax on energy firms. **Read article.**

But the sting in the tail is that the "temporary, targeted energy profits levy" of 25%, gives firms that invest in oil and gas extraction in the UK a 90% tax relief. Therefore the UK government are incentivizing fossil fuel companies to develop more oil and gas fields in the North Sea.

This adds insult to injury when a lot of the large fossil fuel companies don't pay any tax from North Sea revenues anyway. Shell for instance has not paid any tax on North Sea revenue for the last 3 years.

Confirmed—no need for new Cumbrian coal mine……..

The government is set to decide soon whether a new coal mine in Cumbria should go ahead.

As politicians argue over the controversial proposal, very little has been heard from the industry that is supposed to benefit from it.

Leading figures in the British steel industry have told this programme that they do not require its coal.

Exclusive: British steel industry leaders do not require coal from proposed Cumbria mine. **See video.**

Shell is still Hell……..

One of Shells consultant confirmed on Monday 23rd May what we all suspected, that Shell is still Hell on the earth.

Shell consultant quits, accusing firm of 'extreme harms' to environment. **Read article.**

Also on the same day Brandalism started their poster campaign in Aberdeen outing Shell and other major oil companies for their exploitation of workers while profits soar and their lack of action in helping workers with a just transition from the oil industry to the renewables.

Aberdeen billboards 'hijacked' to slam oil firms ahead of major conference. **Read article.**

Banks/Asset Managers just want to make money and don't care how they do it…….

Want to know what we're up against in the climate change debate? Here's the HSBC's Stuart Kirk, who is their Asset Management global head of **responsible investing**. He was speaking at a Financial Times event and compared the climate crisis to the Y2K bug, bemoaning there has always been "some nutjob telling me about the end of the world". He went on: "Who cares if Miami is six metres under water in 100 years? Amsterdam has been six metres underwater for ages. We will cope."

Mr Kirk also likened the climate crisis to the millenium bug, the feared widespread global computer glitch at the end of 1999.

Kirk also questioned the importance of the impact of climate change for HSBC, suggesting the possible devastating effects are irrelevant to the running of its business. "At a big bank like ours, what do people think the average loan length is?" he asked. "It is six years. What happens to the planet in year seven is irrelevant to our loan book. For coal, what happens in year seven is actually irrelevant." He concluded: "Let's get back to making money".

To reduce the bad publicity to HSBC, Stuart Kirk has now been suspended but by him even giving this speech in the first place he must have thought it acceptable, implying this is an established view behind the closed doors of the bank.

HSBC suspends head of responsible investing who called climate warnings 'shrill. **Read article.**

Vanguard refuses to end new fossil fuel investments…….

By Chris Flood

World's second-largest asset manager cites its duty to maximise returns for clients. Vanguard has refused to stop new investments in fossil fuel projects and end its support for coal, oil and gas production. Chief executive Tim Buckley said the group, which manages $8.1tn for more than 30mn investors and is the largest investor in coal companies globally, was determined to safeguard its clients from climate risks but this would not require it to end new commitments to fossil fuel industries. "Vanguard does not seek to direct company strategy. We engage with companies on climate change, ask them to set goals and to report how they are mitigating climate risks. That transparency will ensure that climate risks are priced appropriately by the market," Buckley said in an interview with the Financial Times.

Companies that have a large carbon footprint now could play a critical role in the transition to a low-carbon future, he added. "Our duty is to maximise long-term total returns for clients. Climate change is a material risk but it is only one factor in an investment decision. There is already a pensions crisis and we have to make sure that climate concerns do not make that even worse," said Buckley. The financial implications of climate change have hit the headlines recently after a senior HSBC executive accused central bankers and

policymakers of overstating the risks of global warming.

Buckley's comments were made ahead of the publication of Vanguard's first progress report towards the goal of reaching net zero carbon emissions across its investment portfolios by 2050.

Just $290bn, or 17 per cent, of Vanguard's $1.7tn in actively managed assets are aligned with net zero by 2050. It expects this to increase to 50 per cent by 2030, the agreed interim target date set for members of the Net Zero Asset Managers initiative, a coalition of 235 large investors that together manage around $57.5tn. But Vanguard has chosen not to attach interim net zero targets to the passive index-tracking funds that form the bulk of its assets.

The company has said that this is because net zero targets were not built into the original objectives of these funds. US asset managers also have a fiduciary duty to maximise returns so adding other goals that are not in a fund's prospectus could expose them to legal challenges.

Active managers have more leeway to decide what factors to use when deciding which companies to buy. Vanguard also believes achieving a 50 per cent reduction in emissions in these passive funds by 2030 will be very difficult without substantial action by the companies themselves and much more clarity on how government policy might evolve. "More than 70 per cent of Vanguard's index equity assets are invested in companies with publicly stated emission reduction goals. Over $1 trillion of those assets are invested in companies that have already committed to net zero targets," Buckley said. Environmental campaigners argue that none of the world's three largest asset managers — BlackRock, Vanguard and State Street — have policies that will achieve absolute reductions in carbon emissions by the end of the decade. Vanguard ranked last of 25 large asset managers in a fossil fuel and climate change evaluation published by Reclaim Finance and Urgewald, two environmental campaign groups, in April. "Asset managers need to send clearer signals to the fossil fuel industry. Any investor committed to achieving carbon neutrality by 2050 must immediately cease all investments in companies developing new oil and gas supply projects," said Lara Cuvelier from Reclaim Finance.

We continue to beat records year on year but in the wrong direction…….

Climate change indicators hit record highs in 2021: UN. **Read article.**

'How much more evidence do we need'? Planet breaks four climate records in one year, WMO warns. **Read article.**

Earth's CO2 hits highest recorded level in human history – exceeding 420 parts per million for the first time ever. **Read article.**

Latest

Daily CO_2

A leading signal of environmental, economic and social changes ahead.

May. 24, 2022	**421.27 ppm**
May. 24, 2021	**417.82 ppm**
1 Year Change	3.45 ppm (0.83%)

Last CO_2 Earth update: 2:35:02 AM on May. 25, 2022, Hawaii local time (UTC -10)

This table presents the most up-to-date, daily average reading for atmospheric CO_2 on the planet. Units = parts per million (ppm). Measurement location = Mauna Loa Observatory, Hawaii. Source = NOAA GML. See the tabs below for more info and CO_2 readings.

Greenwash, misinformation, hypocrisy and deceit

Revealed: How Car and Airline Advertising 'Misleads' the Public and Threatens Climate Action. **Read article.**

Carbon storage: climate cure or palliative care for fossil fuels. **Read article.**

Carbon capture technology has been around for decades — here's why it hasn't taken off. **Read article.**

Exxon's Own Research Confirmed Fossil Fuels' Role in Global Warming Decades Ago. **Read article.**

How phantom forests are used for greenwashing. **Read article.**

Retailers blasted over 'deceitful' plastic phase-out claims. **Read article.**

Oregon Gas Utility Wants to Bill Customers Millions for Executive Bonuses and 'Misleading' Advertising. **Read article.**

Cambo in better position to start production, say new owners. **Read article.** Yes things have moved on since Cambo was stopped last year—global warming has increased and two major reports in March (IPCC and IEA) said there should be no more new oil and gas projects.

Corrupt Politicians and Climate Criminals…….

Members of the Global Warming Policy Foundation (GWPF) and the Net Zero Scrutiny Group.

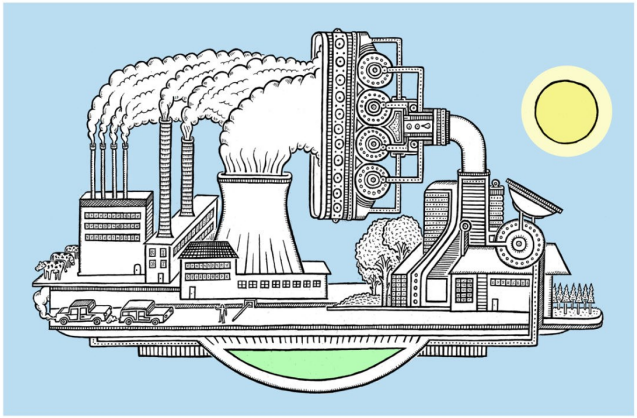
Climate sceptic thinktank reported to charity commission over fossil fuel interest funding. **Read article.**

Technological Advances

Bringing 'Dead' Batteries Back to Life – Researchers Extend Battery Lifetime by 30%. **Read article.**

"Extremely fast-charging" battery hits 60 percent in under 6 minutes. **Read article.**

Enzyme breaks down PET plastic in record time. **Read article.**



Sustainable Farming/Food

How to avoid eating the world: From degrowth to a sustainable food system transformation. **Read article.**

We're running out of time': Dan Saladino on why the loss of diversity in our foods matters. **Read article.**

Five charts that show why our food is not ready for the climate crisis. **Read article.**

The Scales of Justice

'Ella's law' bill seeks to establish right to clean air in UK. **Read article.**

Why Florida's New 'Anti-Protest' Law Could Signal Trouble for the Climate Movement. **Read article.**

Ukraine builds legal case against Russia for environmental damage. **Read article.**

In the Philippines, a Landmark Finding Moves Fossil Fuel Companies' Climate Liability into the Realm of Human Rights. **Read article.**

Eco'nomic Recovery—Building Back Better (Mostly Not)

UN calls for trebling of renewable energy investment in face of climate crisis and Russia's war. **Read article.**

Boost to future of electric cars as UK's first lithium plant secures new investment. **Read article.**

Building organisations call on Chancellor to unlock £2.3bn 'retrofit revolution'. **Read article.**

The Fight Against Fossil Fuels

UK has approved several fossil fuel projects since Cop26, analysis finds. **Read article.**

China Coal Expansions Threaten Higher Methane Levels Worldwide. **Read article.**

Australia's greenhouse pollution from coal higher per person than any other developed country, data shows . **Read article.**

Britain is sitting on 50 years' worth of shale gas with untapped reserves that could boost our energy supplies, says Ineos. **Read article.**

Do not work for 'climate wreckers', UN head tells graduates. **Read article.**

The Amazon Rainforest Is Still Burning

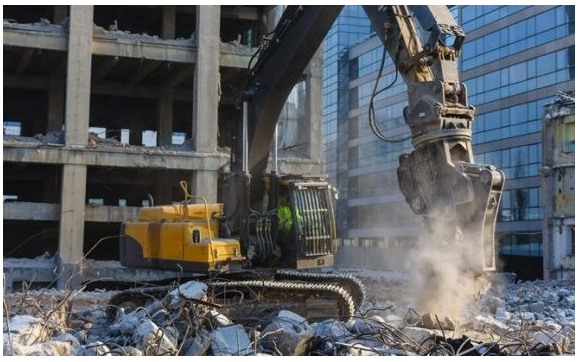
Brazilian Community Leaders Call on EU to Stop Promoting "Ecocide". **Read article.**

Amazon deforestation threatens newly discovered fish species in Brazil. **Read article.**

The Brazilian Amazon has been a net carbon emitter since 2016 . **Read article.**

The destruction of Gran Chaco, forgotten sister of the Amazon rainforest – podcast. **Listen to podcast.**

The Circular Economy



New global circular economy drive launched for the building and construction sector. **Read article.**

Law to Recycle e-Waste, Push to Startups for Battery Manufacturing: Centre's 'Circular Economy' Agenda. **Read article.**

We need optimism – but Disneyfied climate predictions are just dangerous

By George Monbiot

Techno-utopianism is popular precisely because it doesn't challenge the status quo, and lets polluters off the hook

In seeking to prevent environmental breakdown, what counts above all is not the new things we do, but the old things we stop doing. Renewable power, for instance, is useful in preventing climate chaos only to the extent that it displaces fossil fuels. Unfortunately, new technologies do not always lead automatically to the destruction of old ones.

In the UK, for example, building new offshore wind power has been cheaper than building new gas plants since 2017. But the wholesale disinvestment from fossil fuels you might have expected is yet to happen. Since the UN climate summit last November, the government has commissioned one new oil and gas field, and reportedly plans to license six more. It has overridden the Welsh government to insist on the extension of the Aberpergwm coalmine. Similar permissions have been granted in most rich nations, even before Russia's invasion of Ukraine.

Why? Politics. Fossil fuel companies need spend just a fraction of their income on lobbying – funding politicians and their parties, buying the services of thinktanks and public relations agencies, using advertising to greenwash their credentials – to impede the energy transition and defend their investments. Fossil fuels will become stranded assets only when governments insist that they be left in the ground. Yet, somehow, a major strand of thinking in rich nations continues to ignore this obvious truth.

The latest example is the economist Oded Galor's much-praised new book, The Journey of Humanity. Galor argues that the driving forces of human development override setbacks such as wars, pandemics and depressions to deliver ever-increasing prosperity and welfare. They will, he believes, continue to propel a "relentless march of humanity" towards an "even more bountiful future". While the book makes some interesting points, you might have imagined that climate and ecological breakdown, as they present the greatest threat to the optimism that he professes, would be covered in depth. But while he acknowledges their importance, his treatment is remarkably brief, even glib. The only source he cites in support of his main contention on the issue is Bill Gates, whose techno-utopianism and political naivety are notorious among environmentalists.

Instead of detailed analysis, I found handwaving and magical thinking. Galor claims, without providing the necessary evidence, that "the power of innovation accompanied by fertility decline" may allow us to avoid a difficult choice between economic growth and environmental protection. He asserts that a decline in fertility will buy us the time we need to develop unspecified "revolutionary technologies" that will one day rescue us from the climate crisis. So, rather than encouraging countries to adopt "clean energy technologies and environmental regulations", we should instead help them further to reduce fertility.

Just a few problems. While the decline in population growth rates is real enough, it comes far too late to deliver the salvation that Galor anticipates. The most optimistic of current projections, which assumes the deployment of all the measures Galor recommends, sees global population peaking in 2064, then declining to a little higher than today's level by 2100. But already, as the current devastating heatwave in India and Pakistan suggests, the conditions required to sustain human life in some parts of the world are at grave risk, while some Earth systems could be approaching their tipping points. If they pass these critical thresholds, and this triggers a cascade of change, the living planet could flip into a state that is largely uninhabitable. There's likely to be no return from this on any human time-scale. The long arc of human history for which Galor claims to have developed a "unified theory" is a mere instant of Earth systems' time.

He also fails to establish a connection between fertility rates and fossil fuel use. There are plenty of countries whose low fertility rates are accompanied by very high fossil fuel consumption: Canada, for instance, has a fertility rate of just 1.5 children for every woman of childbearing age, Russia 1.6, and the US, Australia, China and the UK 1.7. We already possess the technologies required to avoid catastrophe. What's missing is the political will to deploy them at sufficient speed, and to shutter the legacy industries with which they compete.

A few days before his book was published in the UK, the UN Office for Disaster Risk Reduction warned that irrational optimism and a misperception of risk greatly exacerbate our exposure to disaster. The timing was coincidental, but it stands as a direct riposte to his claims. Groundless optimism could be seen as one of the "cultural traits" that, Galor says, help determine the journey of humanity. It leads us not to his "even more bountiful future", but to a different place altogether.

His is the latest in a line of books by professional optimists – Gates, Steven Pinker, Matt Ridley – who have failed to grasp the nature of either Earth systems or the political economy that bears upon them. These men are not climate deniers; they are politics deniers. They appear to believe that the transformations necessary to prevent systemic collapse can happen without political pressure or political change. Understandably, the media loves them. Nothing fundamental needs to change, we can sit and wait for technological and demographic shifts and everything will work out in the end. A simple story with a happy ending, telling power what it wants to hear, this is the Disney version of environmental science.

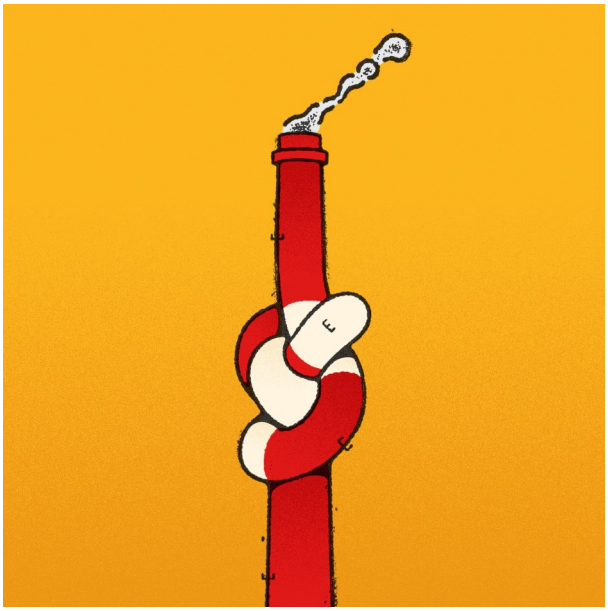
If we leave these issues to "the market" and other supposedly automatic processes, we can see what will happen. . New oil and gas projects, if not stopped, will push global temperatures beyond the limits to which governments claim to have committed us, and are likely to drive Earth systems past their tipping points. In other words, only a radical break from business as usual will prevent planetary disaster. This requires the mass mobilisation of citizens to demand that their governments stop these projects and keep fossil fuels in the ground. How do we know such protests work? Because if they didn't, our government would not be planning to ban them. Politics, which means seeking to change the decisions made in our name, is all that stand between us and catastrophe. This is why I see the politics deniers as more dangerous now than the climate deniers.

We need optimism, and there could be some grounds for it, but it must be rooted in political and environmental reality. Fairytales are a threat to life on Earth.

Could Google's Carbon Emissions Have Effectively Doubled Overnight

By Bill McKibben

A new report suggests that the money Big Tech companies keep in the banking system can do more climate damage than the products they sell.



The temperature in parts of the Antarctic was seventy degrees Fahrenheit above normal in mid-March. Pakistan and India saw their hottest March and April in more than half a century, and the temperature in areas of the subcontinent is above a hundred and twenty degrees this week. Temperatures in Chicago last week topped those in Death Valley. But, on Tuesday, three nonprofit environmental groups jointly released a report containing a different set of numbers that appear to be nearly as scary. They indicate that the world's biggest companies—and, indeed, any company or individual with cash in the bank—have been inadvertently fuelling the climate crisis. Such cash, left in banks and other financial institutions that lend to the fossil-fuel industry, builds pipelines and funds oil exploration and, in the process, produces truly immense amounts of carbon. The report raises deep questions about the sanity of our financial system, but it also suggests a potential realignment of corporate players that could move decisively to change the balance of power which has so far thwarted rapid climate action.

To grasp the implications of the new numbers, consider Google's parent company, Alphabet. It has worked hard to rein in the emissions from its products. Last year, for example, Google Sustainability published an account of the work it put into having casing suppliers convert from using virgin to recycled aluminum for Google's new Pixel 5 phone, an immense effort involving everyone from the metallurgy team—which, the company said, "studied the chemical compositions of different recycled aluminum alloys and grades, looking for an optimal combination of alloying elements to meet our performance standards"—to executives who had "to go far upstream in the supply chain to the source that was supplying our aluminum, then negotiate a new type of deal that they'd never done before." All this was done, Google said, in order to "lower the carbon footprint of manufacturing the enclosure by 35 percent." It's the kind of grinding work that goes on day after day at companies that take the climate crisis seriously.

But, according to the new report, these efforts have missed perhaps the most important source of corporate emissions: the money that these companies earn and then store in banks, equities, and bonds. The consortium of environmental groups—the Climate Safe Lending Network, the Outdoor Policy Outfit, and BankFWD—examined corporate financial statements to find out how much cash the world's biggest companies had on hand, and then calculated how much carbon each dollar sitting in the financial system may have generated. According to these calculations, Google's carbon emissions, in effect, would have risen a hundred and eleven per cent overnight. Meta's emissions would have increased by a

hundred and twelve per cent, and Apple's by sixty-four per cent. For Microsoft in 2021, the report claims, "the emissions generated by the company's $130 billion in cash and investments were comparable to the cumulative emissions generated by the manufacturing, transporting, and use of every Microsoft product in the world." Amazon, too, has worked to cut emissions; it plans to run its delivery fleet on electric trucks, for instance. But in 2020, the report claims, its "$81 billion in cash and financial investments still generated more carbon emissions than emissions generated by the energy Amazon purchased to power all their facilities across the world—its fulfillment centers, data centers, physical stores." Also according to the report, in 2021, the annual emissions from Netflix's cash would have been ten times larger than what was produced by everyone in the world streaming their programming—which is to say, Netflix and heat.

The authors are quick to note caveats. The companies mentioned do not disclose banking arrangements; some of their cash is in the major banks, but some of it is reportedly held overseas, and a portion is in sovereign debt, such as Treasury bills, or in other assets that can be quickly sold, such as stocks. So the numbers, though precise, are extrapolations based on averages and emissions estimates. The report is based on research and analysis performed by South Pole, an international climate-finance consultancy that has worked with companies such as Nestle and Hilton on emissions reporting. South Pole maintains that "the carbon intensity figures for the asset classes analyzed in this report are conservative estimates that constitute an indicative underestimation of the actual emissions banks generate through their financial services"—and that, if you added in companies' pension plans and insurance arrangements, it would "generate a larger financial footprint calculation than simply cash and investments." Even if these figures are crude-cut, however, they are the first of their kind that we have seen and, as such, they offer a unique analysis.

Since the global-warming alarm was first publicly sounded, in the late nineteen-eighties, activists have pushed countries and companies to catalogue their emissions. Beginning in 2001, companies that want to pay attention to their progress—which includes the companies mentioned in the new report—have used a set of "greenhouse-gas protocols" which are overseen by the World Resources Institute, a global nonprofit organization. Under the protocols, a business can report its Scope 1, Scope 2, and Scope 3 emissions. Scope 1 includes direct emissions from operations that a company controls or owns: a factory's boilers; a delivery fleet's gas tanks. Scope 2 emissions come from energy purchased by a company, such as those that a local utility produces when generating power for the company. And Scope 3 emissions are the indirect emissions that "occur in a company's value chain," such as, for example, the carbon produced by the companies that make the aluminum casings for Google's phones.

The authors are quick to note caveats. The companies mentioned do not disclose banking arrangements; some of their cash is in the major banks, but some of it is reportedly held overseas, and a portion is in sovereign debt, such as Treasury bills, or in other assets that can be quickly sold, such as stocks. So the numbers, though precise, are extrapolations based on averages and emissions estimates. The report is based on research and analysis performed by South Pole, an international climate-finance consultancy that has worked with companies such as Nestle and Hilton on emissions reporting. South Pole maintains that "the carbon intensity figures for the asset classes analyzed in this report are conservative estimates that constitute an indicative underestimation of the actual emissions banks generate through their financial services"—and that, if you added in companies' pension plans and insurance arrangements, it would "generate a larger financial footprint calculation than simply cash and investments." Even if these figures are crude-cut, however, they are the first of their kind that we have seen and, as such, they offer a unique analysis.

Since the global-warming alarm was first publicly sounded, in the late nineteen-eighties, activists have pushed countries and companies to catalogue their emissions. Beginning in 2001, companies that want to pay attention to their progress—which includes the companies mentioned in the new report—have used a set of "greenhouse-gas protocols" which are overseen by the World Resources Institute, a global nonprofit organization. Under the protocols, a business can report its Scope 1, Scope 2, and Scope 3 emissions. Scope 1 includes direct emissions from operations that a company controls or owns: a factory's boilers; a delivery fleet's gas tanks. Scope 2 emissions come from energy purchased by a company, such as those that a local utility produces when generating power for the company. And Scope 3 emissions are the indirect emissions that "occur in a company's value chain," such as, for example, the carbon produced by the companies that make the aluminum casings for Google's phones.

Scope 3 emissions could also include downstream, indirect emissions—such as those produced by a company's cash held in banks. In the official accounting framework that the World Resources Institute has provided to companies since the launch of its emissions protocols, there has been a space for carbon emissions that come from cash on hand—category 15, under Scope 3. But in the past most non-financial companies have left it blank, because there's never been a good method for calculating those emissions. "There's nothing more core to a business than making money—it's the thing they exist to do," Paul Moinester, the executive director of the Outdoor Policy Outfit, a think tank, said. "So the fact that we couldn't incorporate the role that their money plays into their carbon emissions—there's nothing more material than that." Vanessa Fajans-Turner, who has announced a congressional run in upstate New York, is the executive director of BankFWD, which members of the Rockefeller family founded in part to track the carbon emissions of the financial system. She noted, "This is part of a company's supply chain. They need to source financial resources and products. They need loans, they need places to keep their cash, they need interest rates, they need international transfers. These are things they source through a partner. That's the definition of a supply chain."

The effort to develop the new calculations began with conversations between James Vaccaro, a former European banker who heads the Climate Safe Lending Network, and Moinester. "We started to do some back-of-the-envelope calculations about how much carbon their cash was producing," Vaccaro explained to me. "And we were, like, 'This has to be wrong. Surely we've transposed a decimal place. This has to be an order of magnitude too large.' " The biggest banks, especially in the U.S., supply huge amounts of capital to keep the fossil-fuel industry expanding. According to Banking on Climate Chaos, an annual report from the Rainforest Action Network and other environmental organizations, JPMorgan Chase, Citigroup, Bank of America, and Wells Fargo have together disbursed more than a trillion dollars to the industry in the years since the Paris climate accord was adopted, in December, 2015. This includes to companies developing new projects that scientists, Indigenous leaders, and climate activists have decried, from the Keystone and Dakota Access Pipelines and new fracking fields to drilling in areas of the newly melted Arctic.

The environmental groups point out that the companies singled out in the report shouldn't be embarrassed by the numbers, which are not exactly their fault. Instead, they say, the numbers should empower them—and any other operation or individual who's making money and storing it in the U.S. financial system—to insist that banks stop lending money to finance the expansion of the fossil-fuel system. And, if they leaned on them as effectively as they do on, say, aluminum suppliers, the results could be remarkable. Google, for instance, is one of the world's largest purchasers of renewable energy. But, the report states, if it could reduce its "financial footprint by 43%, the emissions reduction would be equivalent to the carbon savings Alphabet has generated" with all that solar and wind

power. And maybe it will—after all, when Google did the work on its aluminum casings, the company noted that its suppliers had agreed to make the recycled aluminum "available to the consumer electronics industry as a whole," because "it's a core Google principle to try to lift all boats."

Though the new report doesn't list impacts for individuals, its authors say that the implications are fairly clear. By their reckoning, if someone has savings of a hundred and twenty-five thousand dollars in the big banks, that cash generates as much carbon each year as the average American emits with yearly driving, heating, flying, and cooking. In recent years, people have been organizing grassroots campaigns to pressure the big lenders to trim their fossil-fuel connections. (I have been involved with some of them.) As important as those efforts are, they would work better with leverage provided by the true giants of the corporate system. If Big Tech pushes Big Money to cut off Big Oil, we could see the shifts that have eluded us in the climate fight thus far, and that scientists insist we need to make. It could be a true turning point in the crisis.

In recent months, especially around the time of the Glasgow climate summit, last fall, the banks have increasingly been committing themselves to going "net zero by 2050"; forming large alliances of theoretically climate-concerned banks, insurers, and investors; and touting their lending to renewable-energy projects. But none of this has halted their commitments to longtime fossil-fuel clients. They've done some dodging, too, by measuring not total emissions but "carbon intensity" per unit of revenue. This means, for instance, that if a bank lends money to an oil company and that company uses the money to increase oil production along with a less polluting energy source, such as wind or natural gas, then the company's lender can say that the carbon intensity of their energy portfolio has fallen.

Last month, the United Nations released another report warning of the fast-spiralling climate crisis, which Secretary-General António Guterres prefaced by saying it is "moral and economic madness" to invest in new fossil-fuel projects. In the weeks following that warning, seven huge new oil and gas projects were approved around the world. Exxon announced a new offshore-drilling project in Guyana; according to the Banking on Climate Chaos report from March, Citi and Chase are funders of some of the companies involved. Canada, too, approved a new offshore project: more than sixty wells to be drilled in the Flemish Pass, off the Newfoundland coast. The lead company on that project, Equinor, banks with Chase and Bank of America. And these projects will generate emissions long past the point by which scientists say we must be done with fossil fuels. "We're locking in decades of emissions every day as a result of banks not moving fast enough," Paul Moinester said. What we're going to find out over the next year or two, in other words, is whether modern mega-scale capitalism can still play a part in helping us out of the gravest dilemma that our species has ever faced.

"Google has a robust sustainability team—wonderful people who wake up every day trying to figure out how to decarbonize their company," Moinester told me. "To wake up and see they haven't accounted for a hundred and eleven per cent of their emissions is definitely a gut punch. But it's also creating the most powerful opportunity they have for progress in protecting the climate." He said that his team attempted to meet with every company profiled in the report and previewed the numbers with a few of them. Except for Salesforce, their responses are not in the report, and when it was released some of the companies declined requests for comment from the press. But, Moinester said, "I haven't talked to one person who wasn't shocked, floored, blown away." He added, "These are the most innovative companies in the world. They've redefined the world in countless ways. ."

This is a chance to redefine the world in another way, by reimagining the financial system."

Salesforce, the San Francisco-based software-and-cloud-computing company, clearly takes climate change seriously. (It markets a product, Net Zero Cloud, that other companies use to track their emissions.) One of its founders, Marc Benioff, recently donated a hundred million dollars from TIME Ventures, an investment firm he founded, to tree-planting efforts, and Salesforce promised another hundred million in grants and technology to "enable volunteers to deliver 2.5 million volunteer hours to nonprofits focused on climate action over the next ten years," it said in a statement. Instead of buying the naming rights to a football stadium, the company bought the right to christen the transportation hub at the foot of its new office tower, which the (wonderfully named) Council on Tall Buildings and Urban Habitat named as its 2019 Best Tall Building Worldwide, in large part because of its focus on sustainability. The Green Building Council awarded the building its highest status, platinum, and according to the Environmental Protection Agency it outperforms ninety-seven per cent of comparable buildings nationwide in energy efficiency. Salesforce has been charting its emissions since 2012, and has claimed to have reached "net zero emissions across our full value chain."

Salesforce has even tried to start counting the impact of its financial arrangements. In April, when the company released its latest emissions report, it put a figure in category 15 in the Scope 3 section of its World Resources Institute worksheet, but that figure reflects only the carbon impact of its relatively small venture-capital efforts. I was curious how Salesforce would react to the news that, according to the new accounting, its emissions may have gone up ninety-one per cent. Would it be defensive? Embarrassed? Neither, it turns out. Patrick Flynn, the company's global head of sustainability, told me that he was "extremely grateful." He added, "This is new research and data, and with it a new opportunity to engage banks more deeply, call for action more directly, and use our influence to help rise to the epic challenge we all face." His colleague Suzanne DiBianca, Salesforce's chief impact officer and executive vice-president for corporate relations, offered a reasonable caution. "We don't want to scare companies off from making net-zero commitments because of this massive new piece of information," she told me. But she hopes that the data will spur "disruption," which is literally the sweetest thing a tech executive can say. "It starts a new chapter, and hopefully a very big one," Flynn added. "And maybe this triggers some competition. That's what happened with our data-center providers. Last spring, we told all our suppliers that climate was part of our purchase agreement going forward." Now, with banks, he said, "we can raise our hand as a customer to say we want more here."

But as big as Salesforce is—it ranks sixty-sixth globally in market capitalization—it's probably not big enough to take on Chase (No. 18) or Bank of America (No. 28). After all, Saudi Aramco is first, Exxon fifteenth, and Chevron twenty-second. (The rankings shift with each day's stock-market close, but they give a pretty good sense of relative size and power.) Forced to choose, a banker might well decide to lend to Big Oil. However, Meta is No. 8, Tesla is No. 6, Amazon is No. 5, Alphabet is No. 4, Microsoft, No. 3, and Apple, No. 2. All these companies have net-zero targets. If they decided to pressure the banks, it would be a battle of giants. And the banks would have to consider not only who's on top now but who's likely to stay there; it's pretty hard at present to make a case for Exxon's long-term future, though Amazon seems likely to last. If Apple's C.E.O, Tim Cook, sits down with Chase's C.E.O, Jamie Dimon, who blinks first?

One way of putting it is that, whereas the fossil-fuel industry has clearly acted immorally

on climate change, the banking industry has acted amorally—it has been happy to make money off both clean tech and dirty tech. (Chase is currently building itself a new "all-electric building" as its headquarters in New York City; according to the Rainforest Action Network, it also finances more money to the fossil-fuel industry than any other bank.) But Big Tech can choose to act morally—or at least with whatever combination of conviction and self-interest gets the job done. Though it seems a long time ago now, Google memorably stated in its I.P.O. filing, in 2004, that its goal was "Don't be evil. We believe strongly that in the long term, we will be better served—as shareholders and in all other ways—by a company that does good things for the world."

When I ran the new numbers by members of Google's sustainability team, they didn't want to be quoted directly, but they said that their calculations of emissions had changed over the years, as new information became available, and that they looked forward to studying the data. Executives at several other tech companies, who also didn't want to be quoted by name, asked whether money held in cash would turn out to have a different carbon profile than bonds or sovereign debt; others questioned whether they would have the same leverage negotiating with banks that they can bring to talks with suppliers, which are much smaller companies. Some pointed out, almost wistfully, that it would be easier if the government would take the lead. And many wondered whether it was even feasible to threaten moving their money, given that no bank big enough to handle their business has emerged as a climate leader.

That's true. New York City's Amalgamated Bank, for instance, having committed to cutting its ties with the oil industry in 2016, is now among the nation's few "fossil-free" banks. Although its loan portfolio still produces carbon (stemming from furnaces and appliances in the homes for which it provides mortgages, for example), that number is falling. So an individual could cut her carbon emissions by moving her accounts to Amalgamated's vaults. But the bank's total assets are about six billion dollars. Meanwhile, Apple generated more than twenty-eight billion dollars in the first quarter of this year alone. Taken together, the cash on hand of the four biggest tech companies would make them the fifth-largest bank in the country. If they want to bank green, they're going to have to green their banks.

It's worth asking if there's a chance that the big banks will change. At Chase, Jamie Dimon said last year that "abandoning fossil fuels is not an option right now." But even that declaration leaves a bit of wiggle room. He's right that the flow of gas and oil cannot stop tomorrow; that would cause chaos. What does have to stop right now, scientists say, is the expansion of the fossil-fuel enterprise. As the International Energy Agency said last year, if the world plans on meeting the temperature goals that it set in Paris in 2015, "there are no new oil and gas fields approved for development in our pathway." The Wall Street Journal summarized the I.E.A.'s dicta like this: "Investment in new fossil-fuel supply projects must immediately cease."

If one were looking for a compromise, then this is where it would have to come—not in the banks' pledges to cut "carbon intensity" but in a decision to stop all investment in new fossil-fuel infrastructure. Jason Opeña Disterhoft, a senior climate and energy campaigner for the Rainforest Action Network, put it more explicitly: "No opening new oil and gas reserves for extraction, no exploring for new oil and gas reserves, no new or expanded pipelines, LNG terminals or other midstream infrastructure, and no new or expanded gas-fired power, refineries or other downstream infrastructure." That tidy summation doesn't account for every case: Is it "expansion" if your new fracking well drills horizontally into an existing field? But it's a workable outline. The I.E.A. estimates that,

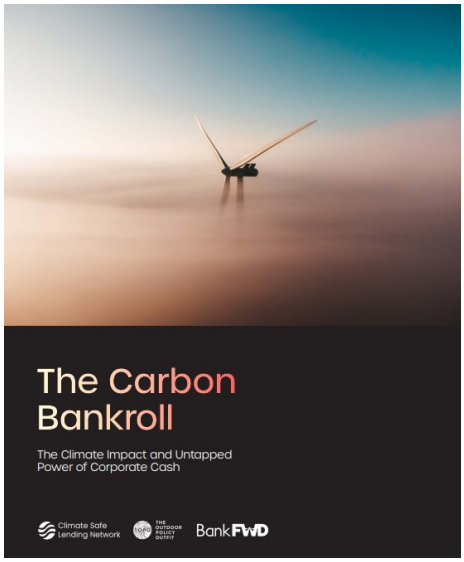
if you actually just wanted to keep existing oil fields pumping, rather than expand production, it would take an investment of about three hundred and fifty billion dollars a year, dropping to a hundred and seventy billion a year after a decade, as those fields began to run dry, and continuing to fall after that. That's what aggressively weaning ourselves off fossil fuel would look like.

And that's what the banks are not doing. A German N.G.O. has helpfully compiled a list of the expansion plans of eight hundred and eighty-seven fossil-fuel companies, giving any financier that wants to help prevent climate chaos a handy scorecard. But, last month, at the annual general meetings of Citi, Wells Fargo, and Bank of America, shareholders followed the advice of the banks, and voted down resolutions to stop funding fossil-fuel expansion. Shareholders at Chase did the same thing on Tuesday, again following management recommendation.

This is where the question of the future direction of capitalism comes in—whether it's a suicide machine or capable of playing a crucial role in speeding the energy transition. The big banks and asset managers are the capital in capitalism, and they provide whatever magic lies at its heart: they know how to take money that you deposit today and turn it into twenty-year loans to pay for a piece of infrastructure designed to last forty years. "It transforms the short term into things that are going to be around for decades," Vaccaro, the former banker and current head of the Climate Safe Lending Network, said. It's a system that helps innovation flourish; without it, we would not have seen the price of renewable energy plummet, as one company after another raised capital to work on the next iteration of wind turbines or batteries. But so far it refuses to discriminate between useful work and work that literally imperils the planet—and, if you want to think in those terms, all the economic activity that might someday take place on that planet, assuming that it survives in some recognizable form. As Peter Gill Case, a Rockefeller heir and the co-founder of BankFWD, told me, "the financial system can be one of two things—a driver of sustainable growth, or a driver of climate chaos."

As with any truly self-destructive behavior, an intervention is required. That is why the possibility of some of these big players performing that intervention with the banks seems so necessary. In a world of widening inequality, companies such as Apple or Amazon have emerged as almost cartoonishly rich and hence uniquely powerful in their ability to force change. We're down to the last years when humans will have the leverage to really affect where the planet's temperature settles. 2030 is just seven years and seven months away. Or, as they measure time at Google and Chase, thirty-one quarters.

The Carbon Bankroll- The Climate Impact and Untapped Power of Corporate Cash. **Read report.**



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