C.I.F CLIMATE CLUB

CARBON INITIATIVE FORUM

C7: ACHIEVING NET ZERO

Carbon Initiative Forum is non-profit that aims to empower the youth through the mainstreaming of climate policy in education. *We see a void in the public space on policy discussions about the climate. There hasn't been enough awareness, conversation and therefore expectation from the public towards policy makers and corporations is lacking. We want to make climate a voting issue in India and create a space, through CIF, for dialogue, discussion and chiefly an impetus from youth and other individuals to drive actions at various governance levels.*

We are a comprehensive platform to ask the right questions to the right people and gain clarity and our target audience includes youth of age group 14-28 years.

OUR MISSION IS TO EDUCATE & ENGAGE ON CLIMATE POLICY

> Our planet needs each one of us right now. We need you to inspire change to control climate change.

> On our platform, understand what the policy makers are doing to limit global warming, engage with us and enhance awareness on it.

> We enable the youth to become better future climate decision makers by educating them on climate change and climate policy.

OUR OBJECTIVES

- Create city level chapters that work on city level issues
- Our vision is to become a national platform, growing and collated by the people
- Enable a larger movement and consequently a larger impact towards climate action

VOLUNTEER LIKE A PLANETEER!

Whether you're a lifelong environmentalist, a new activist just starting out, or someone totally new to the concept of climate change, join our **#CIFClimateClub** or **#LocalCityChapter** and be the planeteers our planet needs.

LEAD THE WAY. INSPIRE THE YOUTH. CLIMATE POLICY NEEDS YOU.

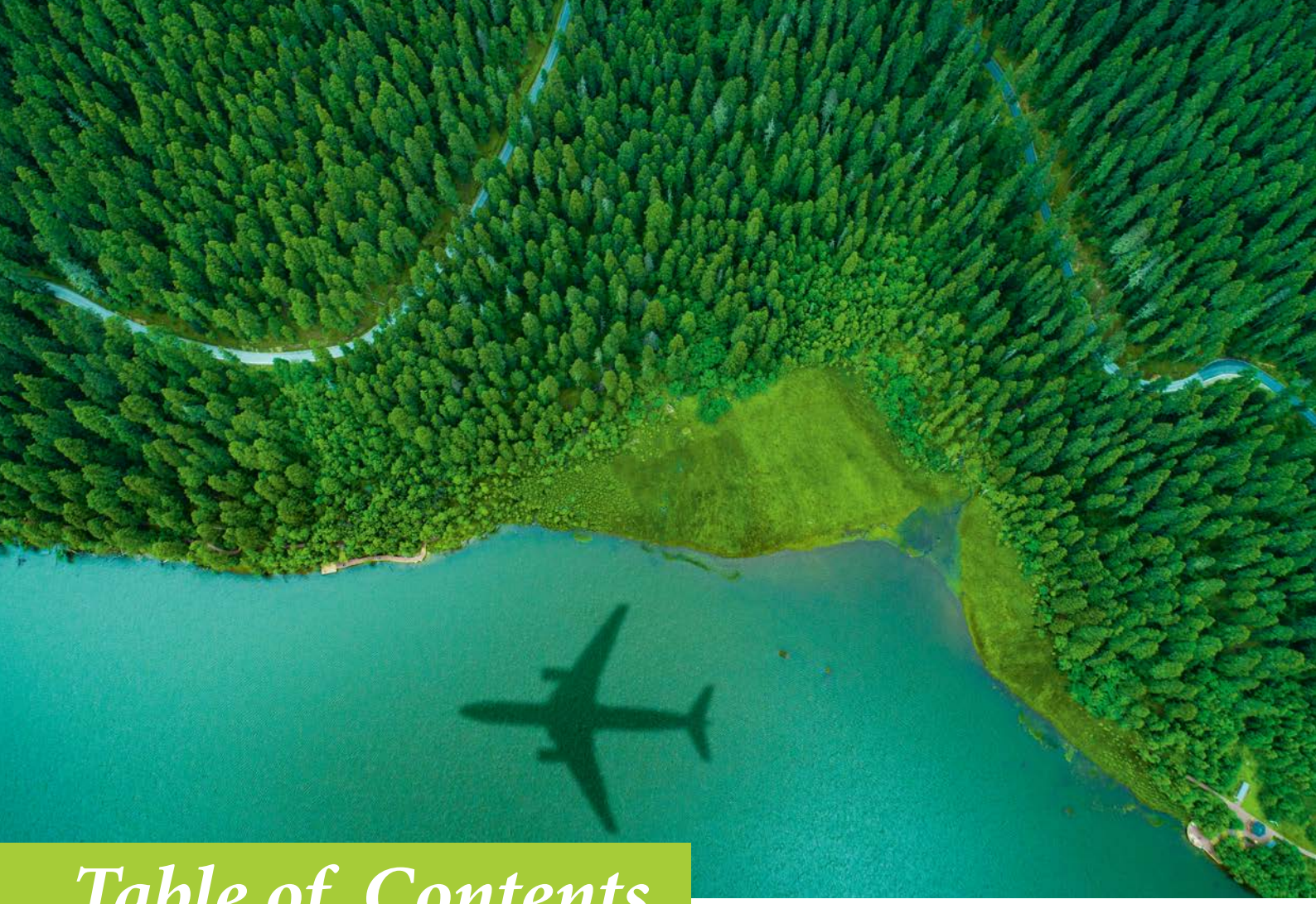


Table of Contents

1. Net-zero simplified 1
2. What does net-zero or being carbon neutral mean? 2
3. Why is it necessary? 4
4. What is the net-zero deadline likely to be? 5
5. Pledges by major countries 5
6. Are we on track to reach net-zero by 2050? 8
7. The race to zero emissions 10
8. Energy at the heart of net-zero 11
9. How a materials transition can support the net-zero agenda 13
10. Role and position of China and India 16
11. Carbon markets and criticism 18
12. Beware of Greenwashing 20
13. Net-zero flights uncovered 21
14. Net-zero bacon 22

Net-zero simplified

'Net-zero emissions' refers to achieving an overall balance between greenhouse gas emissions produced and greenhouse gas emissions taken out of the atmosphere.

The term net-zero is important because - for CO2 at least - this is the state at which global warming stops. The Paris Agreement underlines the need for net-zero, requiring states to 'achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gasses in the second half of this century'.

Getting to net-zero means we can still produce some emissions, as long as they are offset by processes that reduce greenhouse gasses already in the atmosphere. For example, these include planting new forests, or drawdown technologies like direct air capture. The more emissions that are produced, the more carbon dioxide we need to remove from the atmosphere (this is called sequestration) to reach net zero.

However, to avoid a climate catastrophe, new emissions of greenhouse gas must be as low as possible. In other words, we need to get as close as possible to a real zero and only rely on offsetting when it is absolutely necessary. This means that we need to rapidly phase out fossil fuels - coal, oil and gas - and transition to renewable energy.[1]

In contrast to a gross-zero target, which would reduce emissions from all sources uniformly to zero, a net-zero emissions target is more realistic because it allows for some residual emissions.

This takes into account that some emissions are produced by 'hard-to-treat' sectors, such as aviation and manufacturing, where reducing emissions is either too expensive, technologically too complex or simply not possible. In a net-zero scenario the residual emissions from these sectors are allowed as long as they are offset by removing emissions using natural or engineered sinks - gross negative emissions.[2]

> ***Additionally, the worldwide phase out of animal agriculture, combined with a global switch to a plant-based diet, would effectively halt the increase of atmospheric greenhouse gasses (specially methane - a 100-year old gas with a global warming potential 28-34 times that of CO2) for 30 years and give humanity more time to end its reliance on fossil fuels, according to a new study by scientists from Stanford University and the University of California, Berkeley.***[3]

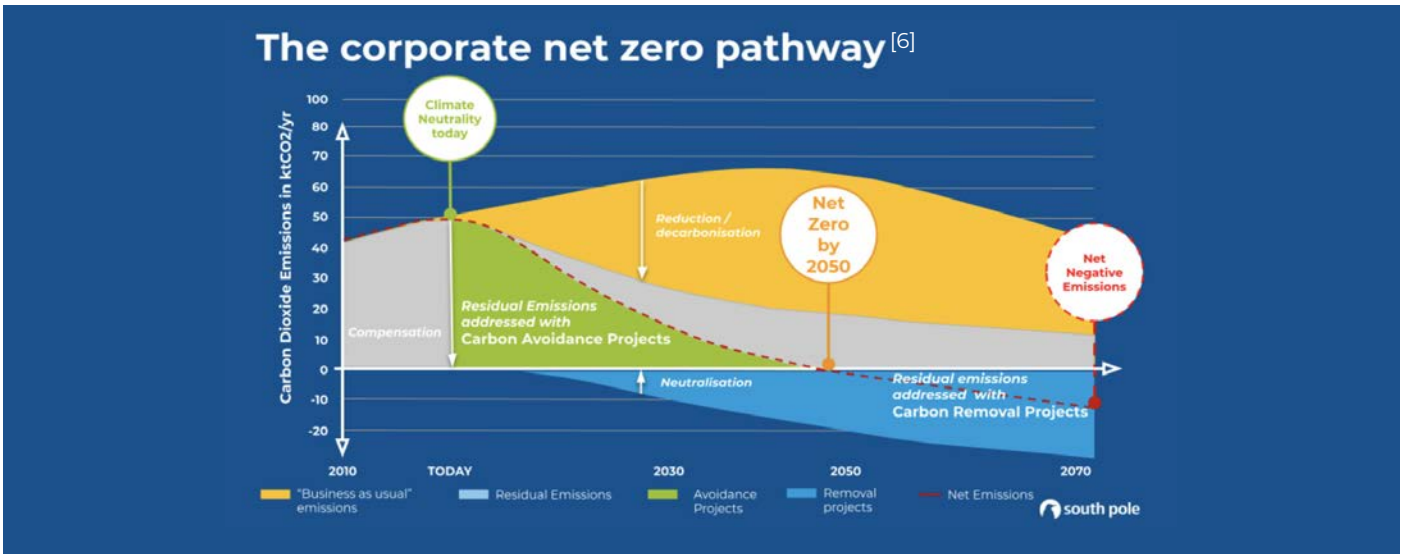
What does net-zero carbon and being carbon neutral mean?

Two seemingly interchangeable terms often seen are "carbon neutral" and "net-zero carbon". However, the two are not the same thing.

Carbon neutral refers to a policy of not increasing carbon emissions and of achieving carbon reduction through offsets. While net-zero carbon means making changes to reduce carbon emissions to the lowest amount - and offsetting as a last resort. The offsetting is used to counteract the essential emissions that remain after all available reduction initiatives have been implemented.[4]

It's important for countries to specify whether their net-zero targets cover CO2 only or all GHGs. A comprehensive net-zero emissions target would include all GHGs, ensuring that non-CO2 gasses are also reduced. The time frame for reaching net-zero emissions is different for CO2 alone versus for CO2 plus other GHGs like methane, nitrous oxide and fluorinated gasses. These potent but short-lived gasses will drive temperatures higher in the near-term, potentially pushing temperature change past the 1.5°C threshold much earlier.[5]

In both cases, carbon offsetting removes CO2 from the environment. For it to count, that removal must be permanent and accredited or licensed. Projects can offer a range of benefits. As well as reducing carbon from the atmosphere, offset projects can be selected to also offer social and community benefits.[4]



In a nutshell:

1. The starting line is climate neutrality.
2. The journey is to achieve net zero by mid-century.
3. But the journey does not end at 'zero' - the ultimate destination is to become 'climate positive' or 'carbon negative.' In other words, to absorb more emissions than we emit once we've reduced as much as is needed - which would be by an average of 90% depending on the sector - in order to limit global warming to 1.5°C.

Why is it necessary?

The world has already heated up by about 1.1°C and is on track for warming of close to 3°C this century if current pledges to rein in still-rising emissions by 2030 are implemented, researchers at Thomas Reuters Foundation estimate.

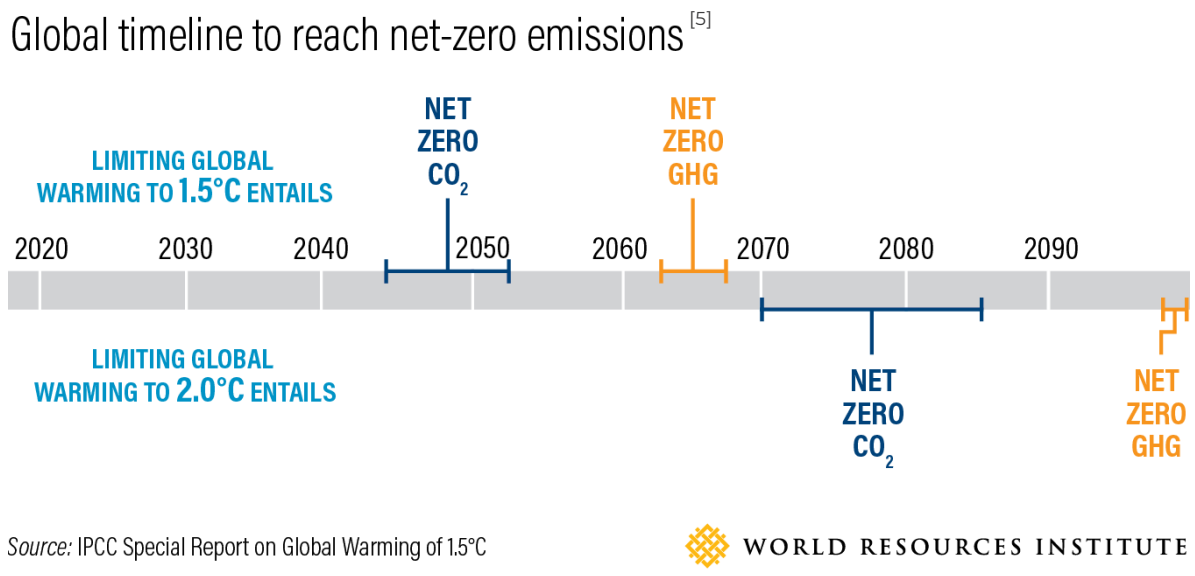
Because of the limits to negative emissions technologies and the criticisms of offsetting, climate scientists stress the need to focus on abating domestic emissions as the primary way to bring emissions to net-zero and thus avoid dangerous climate change.

The Paris Agreement itself does not include the term 'net-zero'. However, governments are increasingly recognising the need for net-zero targets to be included in their Nationally Determined Contributions (NDCs) and some are starting to legislate for net-zero targets. In 2018, the Intergovernmental Panel on Climate Change (IPCC) found that *to limit global warming to 1.5°C, the goal of the Paris Agreement, "Global net human-caused emissions of carbon dioxide would need to fall by about 45% from 2010 levels by 2030, reaching 'net zero' around 2050." Any remaining emissions, says the IPCC, "would need to be balanced by removing CO2 from the air". Progress is not on track at present.*[7]

> **Limiting global warming to 1.5°C compared with 2°C would reduce challenging impacts on ecosystems, human health and well-being, making it easier to achieve the United Nations Sustainable Development Goals.**[8]

What is the net-zero deadline likely to be?

To date, over 80 countries have communicated "net-zero targets," including the world's largest emitters (China, the United States, the European Union and India). On top of that, hundreds more regions, cities and businesses have set targets of their own.



Pledges by major countries

Race to Zero is the UN-backed global campaign rallying non-state actors-including companies, cities, regions, financial and educational institutions, to take rigorous and immediate action to halve global emissions by 2030 and deliver a healthier, fairer zero carbon world in time.

Of the 191 Parties to the Paris Agreement, more than 150 Parties have so far submitted a new or updated national action plan-called Nationally Determined Contributions (NDCs)-as required by the agreement. Their planned combined emissions reductions by 2030 still fall far short of the level of ambition needed to achieve the 1.5°C goal.

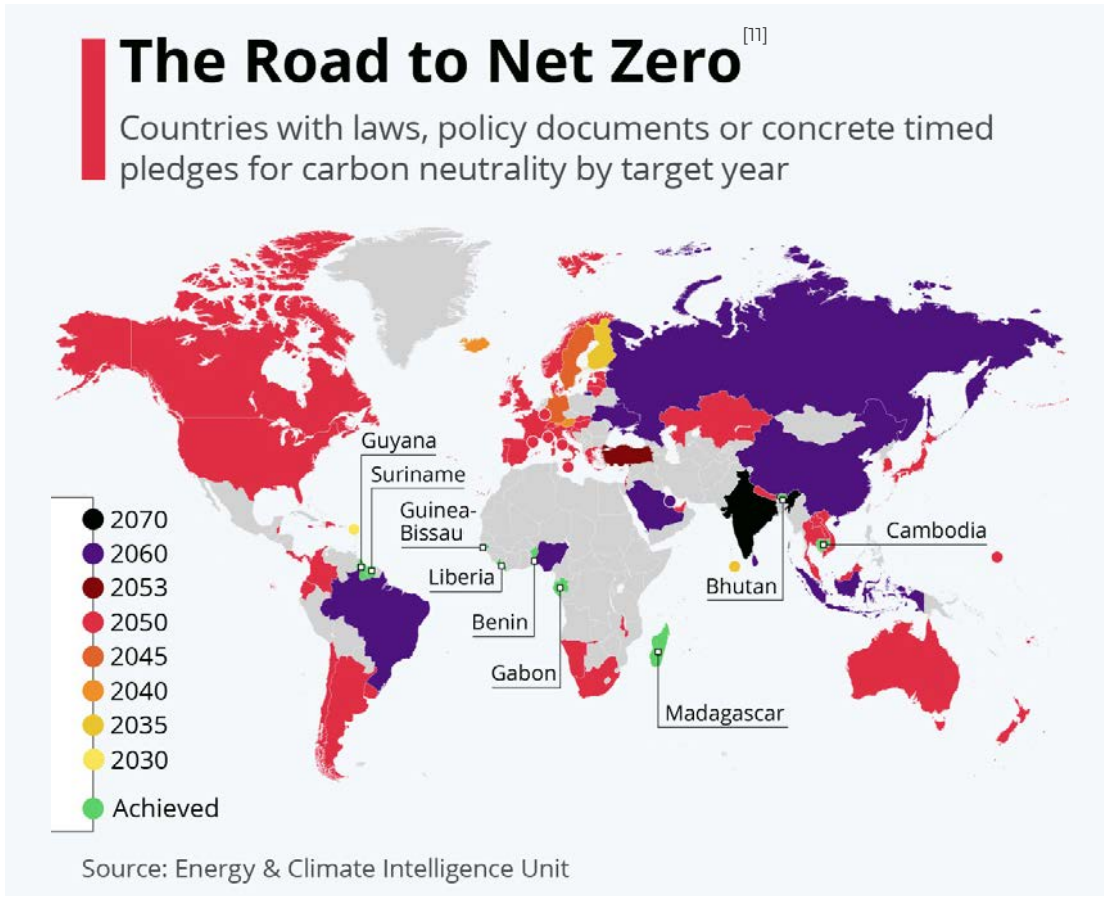
Out of the 135 countries pledging carbon neutrality, only 66 have put a target year on their policies, laws or propositions according to data by Net Zero Tracker. Even though this number is still comparatively low, some major players like Saudi Arabia joined the number of countries vowing to put into motion plans to combat climate change in connection to the COP26 climate summit held in 2021.[9]

Four options that have been considered for the net-zero target by the Committee on Climate Change: *2025, 2045, 2050 and any time thereafter.*

The most ambitious target of 2025 is an unrealistic one. Some of the technologies to deliver net-zero don't yet exist, some that do, can't physically be built in time, and it takes decades

Our Net Zero Commitment

for planted trees to grow. The cost of meeting this target would also be high, with the effects likely most keenly felt by low income groups. This means that the likelihood of this deadline being adopted is very low.[10]



Uruguay's 2030 target might be the earliest, but it is not yet set in stone. Leading the road to net-zero among bigger nations is Finland, which aims to become carbon neutral by 2035 via its medium-term climate change policy plan and national climate and energy strategy put into place in June of 2019. Iceland and Austria are looking to reach net-zero by 2040, with Germany and Sweden pushing the date for carbon neutrality to 2045. Most of the countries with climate pledges have put down 2050 as their goal, with the exception of China, Saudi Arabia, Sri Lanka, Ukraine, Nigeria, Brazil, Bahrain and Russia targeting 2060. India, who is the third largest emitter of GHGs, has the questionable honor to lead this ranking with 2070 as its target.

These exceptions might prove detrimental to the fight against climate change though, since India, China and Russia, for example, were among the top 5 countries by CO2 emissions in 2021.

> **While Suriname and Bhutan were the only two countries that had already achieved net-zero and were even looking at a net-negative carbon economy for some time, the number of countries presenting similar results has risen since the conclusion of COP26. Now, Benin, Gabon, Guinea-Bissau, Guyana, Cambodia, Liberia and Madagascar are also part of this small club.**

The prevalence of smaller states in this group can be attributed to the relatively undeveloped nature of some of those places as well as in some cases the dense forest cover, which makes up 93% of the total area of Suriname, for example.[11]

According to the 'Net-Zero Tracker' of the Energy and Climate Intelligence Unit, five more countries had approved net-zero legislation as of January 2021: Sweden, France, Denmark, New Zealand, and Hungary, all with a 2050 goal date except Sweden (2045). Other countries have amended their NDCs, proposed legislation, or stated their desire to achieve net-zero emissions. The European Union also set out its bloc-wide net-zero target for 2050 in its European Green Deal published in December 2019.[7]

Over 1,300 companies have put in place science-based targets in line with net zero, and more than 1000 cities, over 1000 educational institutions, and over 400 financial institutions have joined the Race to Zero Initiative, pledging to take rigorous, immediate action to halve global emissions by 2030. At least one-fifth (21%) of the world's 2,000 largest public companies have committed to meet net-zero targets as of March 2021.[12]

> ***While the reduction of greenhouse gas emissions is a key part of the net-zero concept and combating climate change, it's not its only relevant indicator. Artificial or natural carbon sinks like rainforests are also an important factor in reaching this goal since the reduction to zero carbon emissions is downright impossible to achieve. Therefore, carbon neutrality must be understood, as a holistic concept, including developing technology to draw greenhouse gasses from the atmosphere, furthering conservationist measures concerning important natural habitats, as well as reducing the overall output of carbon caused by industrialized production.***[11]

Are we on track to reach net-zero by 2050?

The Heat Is On – A world of climate promises not yet delivered

The UNEP Emissions Gap Report (EGR) 2021: The Heat Is On shows that new national climate pledges combined with other mitigation measures put the world on track for a global temperature rise of 2.7°C - 3°C°C by the end of the century. That is well above the goals of the Paris climate agreement and would lead to catastrophic changes in the Earth's climate.

> ***To keep global warming below 1.5°C this century, the aspirational goal of the Paris Agreement, the world needs to halve annual greenhouse gas emissions in the next eight years. If implemented effectively, net-zero emissions pledges could limit warming to 2.2°C, closer to the well-below 2°C goal of the Paris Agreement.***

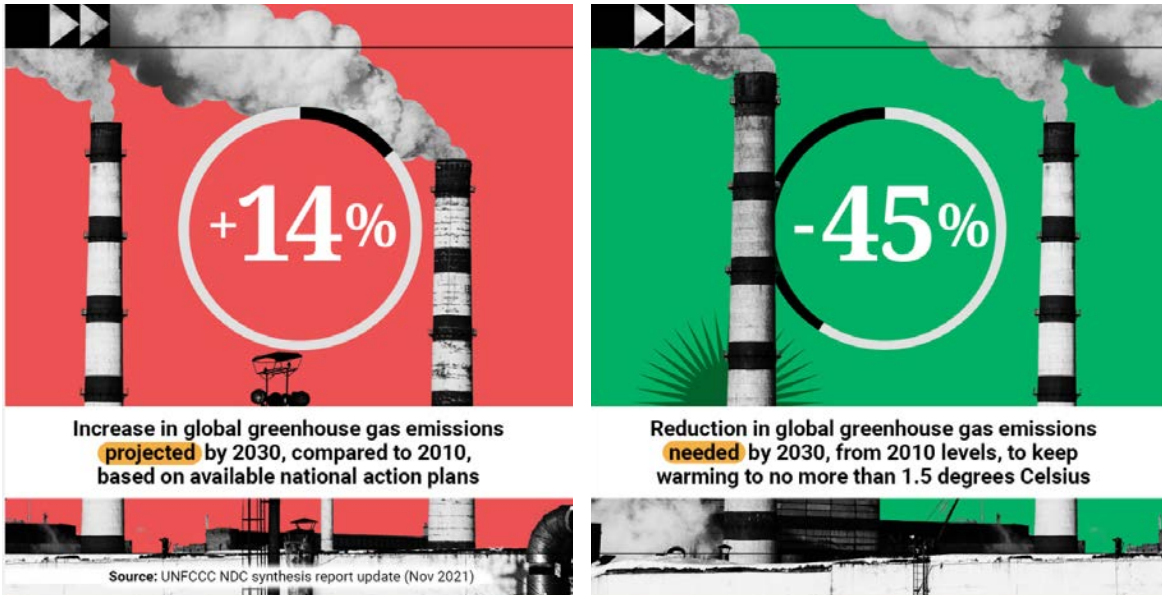
However, many national climate plans delay action until after 2030. The reduction of methane emissions from the fossil fuel, waste and agriculture sectors could help close the emissions gap and reduce warming in the short

term, the report finds.

Carbon markets could also help slash emissions. But that would only happen if rules are clearly defined and target actual reductions in emissions, while being supported by arrangements to track progress and provide transparency.[13]

Current national climate plans, for all 193 Parties to the Paris Agreement taken together would lead to a sizable increase of almost 14% in global greenhouse gas emissions by 2030, compared to 2010 levels. Getting to net-zero requires all governments and the biggest emitters, to significantly strengthen their Nationally Determined Contributions (NDCs) and take bold, immediate steps towards reducing emissions now.

Current naitional plans fall short of what is required[12]



The Glasgow Climate Pact called on all countries to revisit and strengthen the 2030 targets in their NDCs by the end of 2022, but only 24 new or updated climate plans were submitted by September 2022.[12]

What needs to happen to achieve net-zero emissions?

Policy, technology and behavior need to shift across the board. For example, in pathways to 1.5°C, renewables are projected to supply 70-85% of electricity by 2050.

Energy efficiency and fuel switching measures are critical for transportation. Improving the efficiency of food production, changing dietary choices, halting deforestation, restoring degraded lands and reducing food loss and waste also have significant potential to reduce emissions.

It is critical that the structural and economic transition necessary to limit warming to 1.5°C is approached in a just manner, especially for workers tied to high-carbon industries.

The good news is that most of the necessary technologies are available and increasingly cost-competitive with high-carbon alternatives. Solar and wind now provide the cheapest power available for 67% of the world. Markets are waking up to these opportunities and to the risks of a high-carbon economy, and shifting accordingly.

Investments in carbon removal are also necessary. Carbon sequestration is the process of capturing and storing atmospheric carbon dioxide. It is one method of reducing the amount of carbon dioxide in the atmosphere with the goal of reducing global climate change.

The different pathways assessed by the IPCC to achieve 1.5°C all rely on carbon removal to some extent. Removing CO2 from the atmosphere will compensate for emissions from sectors in which reaching net-zero emissions is more

difficult, such as aviation. Carbon removal can be achieved by several means, including through land-based and technological approaches.[5]

The World Resources Institute has summarized 10 key solutions needed to reduce GHG emissions as follows:

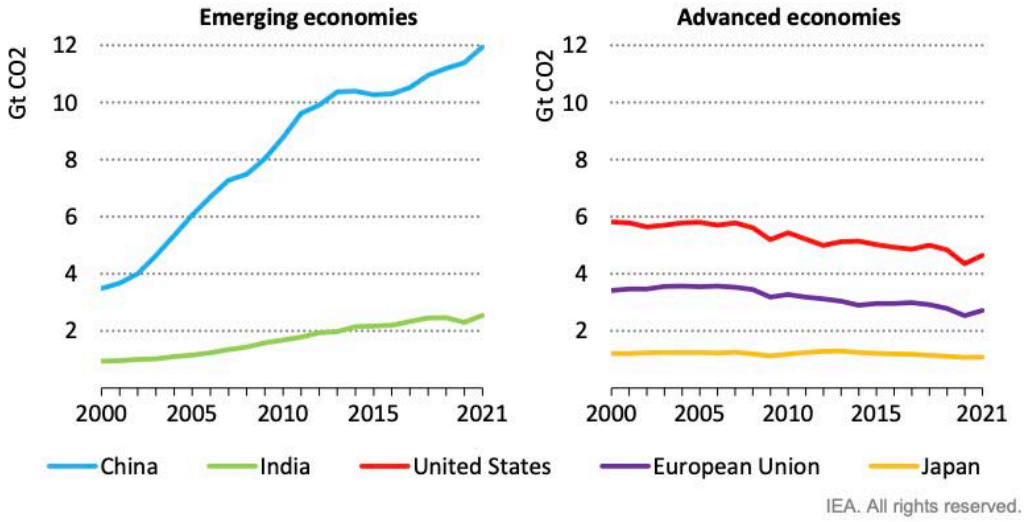
Energy at the heart of net-zero

The world's first comprehensive energy roadmap shows government actions to rapidly boost clean energy and reduce fossil fuel use can create millions of jobs, lift economic growth and keep net-zero in reach.

Energy accounts for over two-thirds of global greenhouse gas emissions. This means energy must be at the heart of any solution.

The net-zero challenge calls for a step change in technology innovation in critical areas such as enhancing energy efficiency, making low-carbon electricity the main source for heating buildings and powering vehicles, capturing, storing and utilizing carbon dioxide before it escapes into the atmosphere, realising the potential of clean hydrogen and ammonia across many industries, and massively expanding the use of sustainable bioenergy.[14]

Gobal Energy Review: CO2 Emissions in selected emerging and advanced eonomies, 2000-2021[15]



> ***Today, overall investment in clean energy innovation is increasing, but only gradually – far too slowly to meet our challenges head on.***[14]

The world has a viable pathway to building a global energy sector with net-zero emissions in 2050, but it is narrow and requires an unprecedented transformation of how energy is produced, transported and used globally. The number of countries announcing pledges to achieve net-zero emissions over the coming decades continues to grow.

However, the pledges by governments to date, even if fully achieved, fall well short of what is required to bring global energy-related carbon dioxide emissions to net-zero by 2050 and give the world an even chance of limiting the global temperature rise to 1.5°C.

Most of the global reductions in CO2 emissions between now and 2030 in the net-zero pathway come from technologies readily available today. But in 2050, almost half the reductions come from technologies that are currently only at the demonstration or prototype phase.

This demands that governments quickly increase and reprioritise their spending on research and development - as well as on demonstrating and deploying

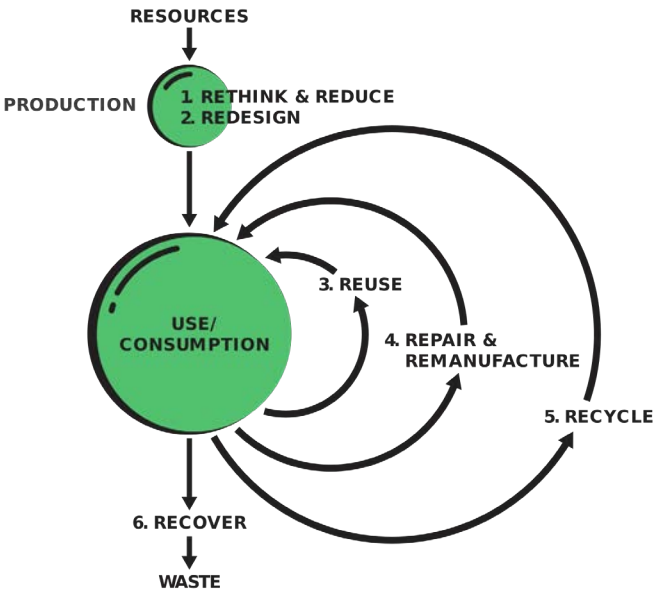
clean energy technologies - putting them at the core of energy and climate policy. Progress in the areas of advanced batteries, electrolysers for hydrogen, and direct air capture and storage can be particularly impactful. *A transition of such magnitude and speed cannot be achieved without sustained support and participation from citizens, whose lives will be affected in multiple ways.*[16]

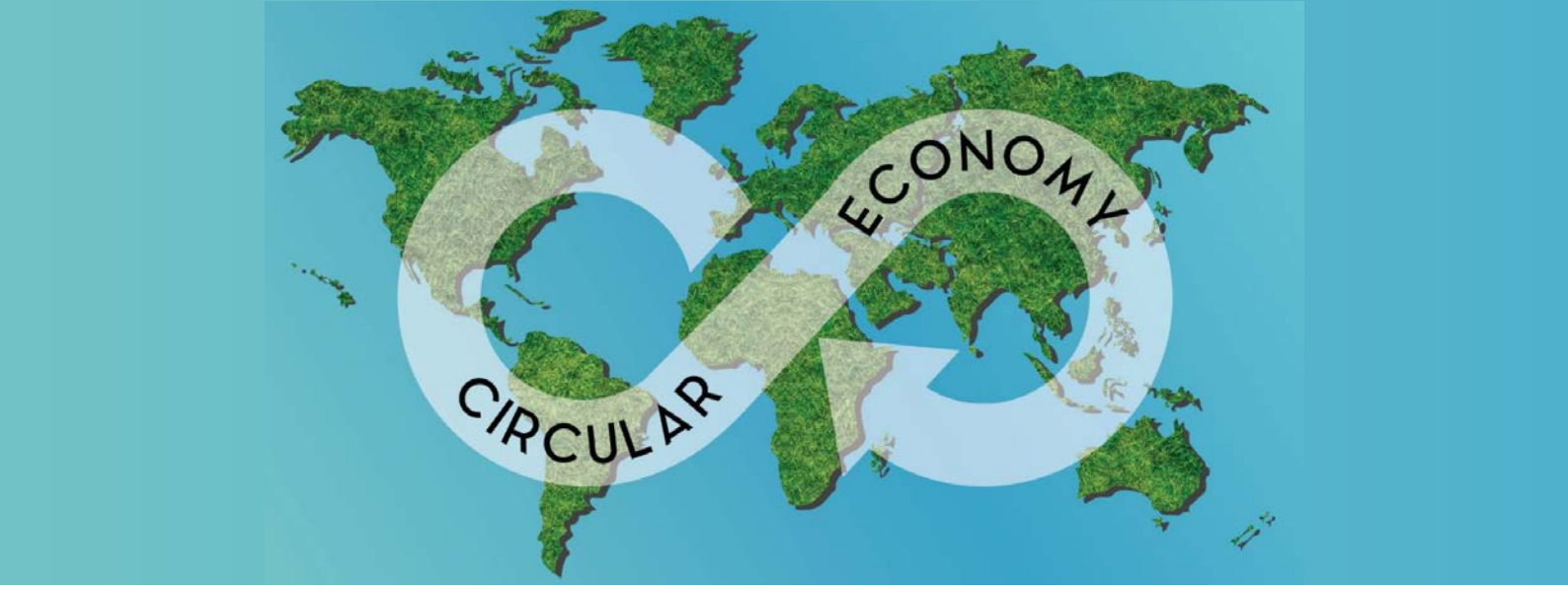
How a 'materials transition' can support the net-zero agenda

What is a circular economy?

In our current economy, we take materials from the Earth, make products from them, and eventually throw them away as waste – the process is linear. In a circular economy, by contrast, we stop waste being produced in the first place.

The circular economy is a systems solution framework that tackles global challenges like climate change, biodiversity loss, waste, and pollution.





The circular economy is based on three principles, driven by design

- **Eliminate waste and pollution**
- **Circulate products and materials (at their highest value)**
- **Regenerate nature**

It is underpinned by a transition to renewable energy and materials. A circular economy decouples economic activity from the consumption of finite resources. It is a resilient system that is good for business, people and the environment.[17]

> ***As the energy transition continues, advances toward low-emissions materials and the circular economy can also speed progress to net-zero.***

Many countries and businesses have so far centered their plans for achieving net-zero emissions on an energy transition. And rightly so, given that the use of fossil fuels accounts for a clear majority of global CO2 emissions and presents obvious emissions reduction opportunities.

However, the production, use, and eventual disposal of industrial materials such as steel, plastics, aluminum, and cement also account for almost a quarter of all global CO2 emissions. To stand a chance of reaching net-zero, countries and businesses should also consider what might be called a materials transition, which would involve both the implementation of lower-impact ways to produce materials and crucially the application of circular-economy principles to optimize the use and reuse of these materials.[18]

Globally, there are a growing number of government initiatives that are tying-in circular economy with their national climate action agendas. Some inspiring stories include,

1. The **Global Alliance on Circular Economy and Resource Efficiency (GACERE)** 2021, is an alliance of governments at the global level willing to work together on and advocate for a global just circular economy transition, sustainable consumption and production, resource efficiency and more sustainable management of natural resources at the political level and in multilateral fora.[19]

2. The **Circular Economy Coalition of Latin America and the Caribbean** was formed in 2021 to serve as a platform for exchanging best circular economy practices and promoting cooperation between governments, businesses and society in the region.[20]

3. The **African Circular Economy Alliance (ACEA)** is a government-led coalition of African nations with a mission to spur Africa's transformation to a circular economy that delivers economic growth, jobs, and positive environmental outcomes.[21]

4. **Viet Nam Circular Economy -** In 2020, Viet Nam has established a technical committee on Circular economy. This technical committee is working on developing a number of standards in the field of circular economy. [22]

Role and position of China and India

CHINA

As the world's largest greenhouse gas (GHG) emitter, China's climate actions are critical to the planet's net-zero future. The pledge made by President Xi in September 2020 to the UN General Assembly to have CO2 emissions peak before 2030 and achieve carbon neutrality before 2060 was an important commitment made from the top.

China's 14th Five-Year Plan (2021-2025) for National Economic and Social Development sets legally binding targets to reduce carbon emissions per unit of GDP by 18% in the next five years, calls for the implementation of supplementary regional absolute carbon caps and locking-in efforts to achieve carbon neutrality by 2060, and in general calls for the adoption of policies and measures with higher impact.

China has committed itself to raising its non-fossil fuel share of primary energy to 20% by 2025 and 25% by 2030, and increase the total installed capacity of solar and wind to 1200 GW by 2030. China is the leading renewable energy technology producer and exporter, and also has the largest fleet of wind and solar plants.

Since 2010, China's central government has carried out 87 low carbon pilots, comprising 81 cities and 6 provinces. Over 60 of these pilots have committed to peak carbon emissions before 2025.

The People's Bank of China (PBOC), China's financial policy regulator, has also made carbon neutrality a priority in 2021. At the local level, PBOC has designated 6 provinces and 9 cities as green finance pilots.[23]

INDIA

> **India, the world's third-biggest emitter of greenhouse gasses, has pledged to achieve net-zero carbon emissions by 2070.**

At COP26 - Prime Minister Narendra Modi further promised that India would work towards the following goals:

- Creation of a carbon sink of 2.5 to 3 GtCO2e through additional forest and tree cover by 2030.
- By 2030, 50% of the country's energy requirements would be met using renewable energy sources.
- The country will reduce the total projected carbon emission by one billion tonnes between now and the year 2030.
- The carbon intensity of the economy would be reduced to less than 45% by 2030.

In contrast to this net-zero commitment, in the final days of COP26, India objected to the provision referring to a phasing out of fossil fuel subsidies and coal in the final draft of what is now the Glasgow Climate Pact. Supported by a few other developing countries, including China, Iran, and Cuba, India floated an amendment to use the phrase "phase down" instead of "phase out" coal power.

Emphasizing the argument that each country will reach net-zero as per its particular context, India's Environment Minister stated: "Developing countries have a right to their fair share of the global carbon budget and are entitled to the responsible use of fossil fuels within this scope. Developing countries still have to deal with their development agendas and poverty eradication. Towards this end, subsidies provide much needed social security and support."

India's developmental aspirations inevitably result in a net increase in emissions. At COP26, India once again highlighted that developed nations have not only failed to meet the USD 100 billion goal annually of support to developing nations since 2009 but also continue to present it as the ceiling of their ambition all the way to 2025. [24]

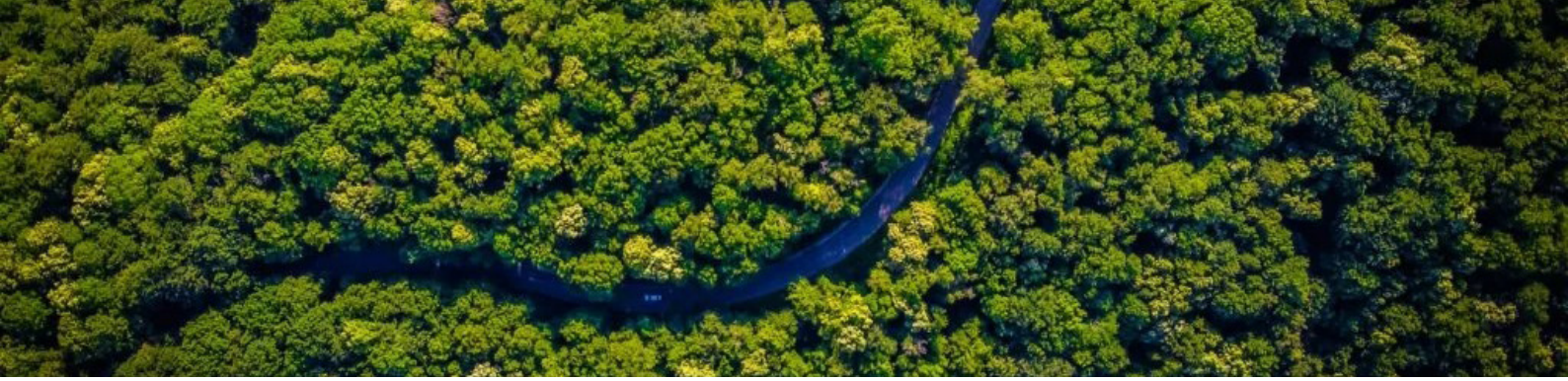
Carbon markets and criticism

Compliance carbon markets are marketplaces where emitters can obtain and surrender emission permits or carbon credits in order to meet their legally binding goals. They appeared when countries got legal obligations to decrease their greenhouse gas emissions, meaning when the Kyoto protocol entered into force.

The Kyoto protocol introduced three market mechanisms:

- **Emissions Trading**
- **Clean Development Mechanism (CDM)**
- **Joint Implementation**

Compliance carbon markets started as the implementation of those mechanisms.



Emissions trading operates under the Cap and Trade system, unit traded is Emission allowance. Clean Development Mechanism and Joint implementation operate as Baseline-and-Credit systems, unit traded is Carbon credit.

Compliance carbon markets are way much bigger than Voluntary carbon markets (approx 270 Billion $ vs 0.4-1 Billion $), but going further economists predict exponential growth of the latter.[25]

The unit traded on Voluntary carbon markets is carbon credit. It is a tradable certificate representing 1 ton of CO2 equivalent removed from the atmosphere, by a green project designed specifically for this purpose.

The voluntary carbon market does not have a single regulatory body and is highly fragmented. This means there are many agencies with somewhat different standards that can verify the project like Gold Standard or VERRA. And standards are important because carbon offsets may be of high quality, but may also be of low quality. This scattered pattern of standards and lack of proper regulation is a reason why voluntary markets get criticized and partially this is fair. But it's also worth mentioning that these days voluntary carbon markets have become much more mature. Standards are getting better, the process of purchasing carbon offsets is getting easier and more accessible.

> **There is a dire need to eliminate fossil fuels and go carbon negative.**
>
> ***At the end of the day, we need a managed transition away from fossil fuels and a managed decline to zero fossil fuel emissions. If offsetting is allowing fossil fuels to continue to be burnt, there's very little room for that.***

There is no time left for offsetting to be relevant. In past decades, it may have been a useful financial tool in some situations, and some good projects have been run, but we're fast leaving that space.[26]

Developed countries like the US, UK and Australia have all exceeded their carbon budget, and they need to actually reduce emissions by more than 100% - we already need to go net negative, not just net-zero. That needs to be done in the form of climate finance and technology transfers to developing countries, on a scale far beyond what offsetting or carbon trading could ever achieve.[27]

Beware of greenwashing

We're living in a golden age of greenwash. From 'carbon neutral' flights to 'net-zero' bacon, dishonest green PR is on the rise.

Greenwashing is a PR tactic that's used to make a company or product appear environmentally friendly without meaningfully reducing its environmental impact.

The term "greenwashing" itself seems to have first appeared back in the 1980s, at a time of major environmental disasters and climate science going mainstream. But it's not until very recently that this practice has truly taken off. Growing public concerns about the state of nature and the climate have meant much more scrutiny on the environmental impacts of companies. And when boardrooms are faced with a choice between radically transforming the way they do business or just throwing some money at a new PR campaign, the latter option can be tempting.

There is a lack of clarity around how countries and companies will use offsetting to meet targets as there are limits to natural offsets, warned a Forbes report. Companies risk leaving themselves open to allegations of greenwashing if they do not complement targets with proper governance and transparency mechanisms, including how much offsetting they rely on, it added.

For the oil industry in particular, something else has changed. After decades of working behind the scenes to undermine climate science, fossil fuel companies have realized being caught doing it is not a good look. *Having put down the climate denial playbook, many oil and gas firms have reached for the greenwash spray gun. But the aim is pretty much the same: delay or avoid action to avert catastrophic climate change.*

"Offsetting has become the most popular and sophisticated form of greenwash around. It could work in theory, but in practice, it's riddled with flaws."

In Shell's case, the oil giant claims to be cancelling out emissions from its fuel by funding projects that are trying to stop deforestation in places like the Amazon. If that seems a bit of a logical leap, it's because it is. The main problem is that the impacts of the planet-heating emissions from Shell customers' exhaust are certain, whereas the impacts of the offsetting schemes supposed to mop up them are anything but.

Any scheme claiming to be generating carbon savings by protecting a forest has an awful lot to prove. It needs to show that those savings wouldn't happen anyway even if the scheme didn't exist; that deforestation has not simply been pushed over into a nearby area; and that the project will last long enough for the carbon to be reabsorbed.[28]

Net-zero flights uncovered

On the 19th of November 2019, easyJet made history at least according to their own ad published in the London Metro the following day. As it soared into the autumn sky, flight EJU5841 became the first one by the low-cost airline to have all emissions from its fuel offset. From then on, the EasyJet site informs us, all their flights have been "carbon-neutral".

EasyJet is not alone in offering climate-friendly flights to its customers. In fact, this has become quite the trend among airlines. For a small fee, British Airways gives passengers the opportunity to offset their emissions and thus "fly carbon-neutral" while Delta claims to be set to become the "first carbon-neutral airline globally".

The slogan is catching on. But if you're wondering what kind of major technological breakthrough lies behind it, you're looking in the wrong place. The leap in innovation is not to be found in the planes themselves, but in the PR department. These companies' airplanes still burn tonnes and tonnes of the usual fossil fuels. What they claim to be doing is offsetting the emissions from those flights by funding a bunch of forest protection schemes around the world.

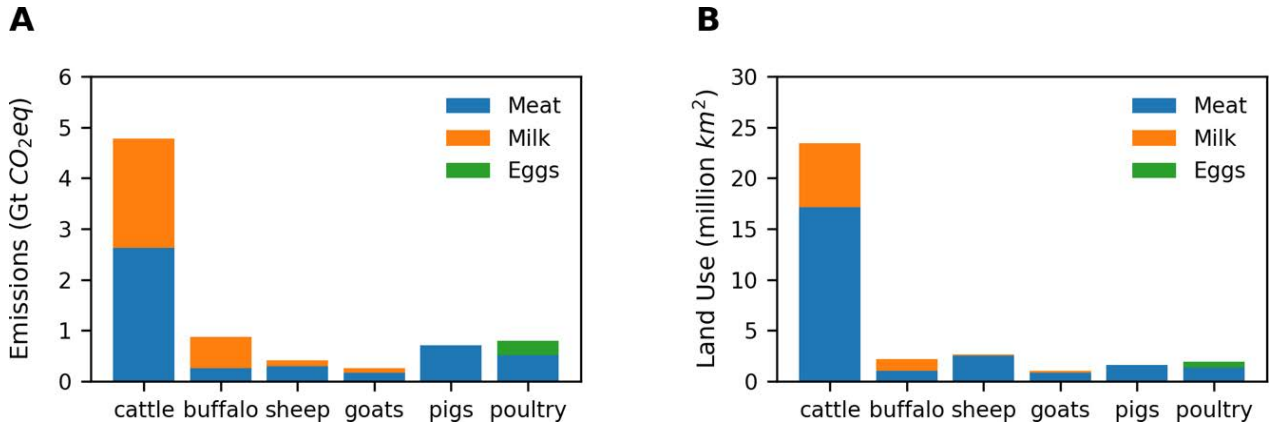
It's exactly the same trick behind Shell's "drive carbon-neutral" slogan, and it comes with the same problems. *An investigation by Unearthed and the Guardian found no evidence that the offsetting schemes used to justify these eye-catching claims have produced enough carbon savings to back them up.*

It's not surprising that the aviation industry should be relying so heavily on greenwashing. This is a sector with a massive climate problem and no off-the-peg solutions other than scaling itself down. Pumping one billion tonnes of carbon emissions into the atmosphere every year, air travel and freight accounts for 2% of global emissions. Biofuels might make a dent in the problem, though they come with serious issues of their own, but large-scale electric planes are a distant prospect. This makes airlines the perfect customers for the greenwashing industry.[28]

Net-zero bacon

> ***If big polluters like oil giants and airlines can have their "carbon-neutral" petrol and flights, what about that other major source of planet-heating emissions, the meat industry? Why can't they have their net-zero bacon?***

Global emissions and land use footprints of animal agriculture[29]



Total CO2 equivalent emissions (A) assembled from species, product and country-specific production data from FAOSTAT for 2019 and species, product, region and greenhouse-gas specific emissions data from GLEAM [3], using CO2 equivalents of 34 for CH4 and 298 for N2O. Land use (B) assembled from species, product and country-specific production data from FAOSTAT for 2019 and species and product specific land use data from.

Rapid global phaseout of animal agriculture has the potential to stabilize greenhouse gas levels for 30 years and offset 68% of CO2 emissions this century. Animal agriculture contributes significantly to global warming through ongoing emissions of the potent greenhouse gases methane and nitrous oxide, and displacement of biomass carbon on the land used to support livestock. However, because estimates of the magnitude of the effect of ending animal agriculture often focus on only one factor, the full potential benefit of a more radical change remains underappreciated.[23]

"Farming and wider land use will be crucial in achieving a net-zero economy. It will be almost impossible to get to net-zero unless land use overall absorbs more greenhouse gases than it produces."[30]

- Energy and climate intelligence unit

Case study - Everything they say is not true

According to Greenpeace, a JBS ad in the New York Times promised that it's possible to make bacon, chicken wings and steak with net-zero emissions. Given that livestock farming makes up nearly 15% of global greenhouse gas emissions, this is a rather bold statement.

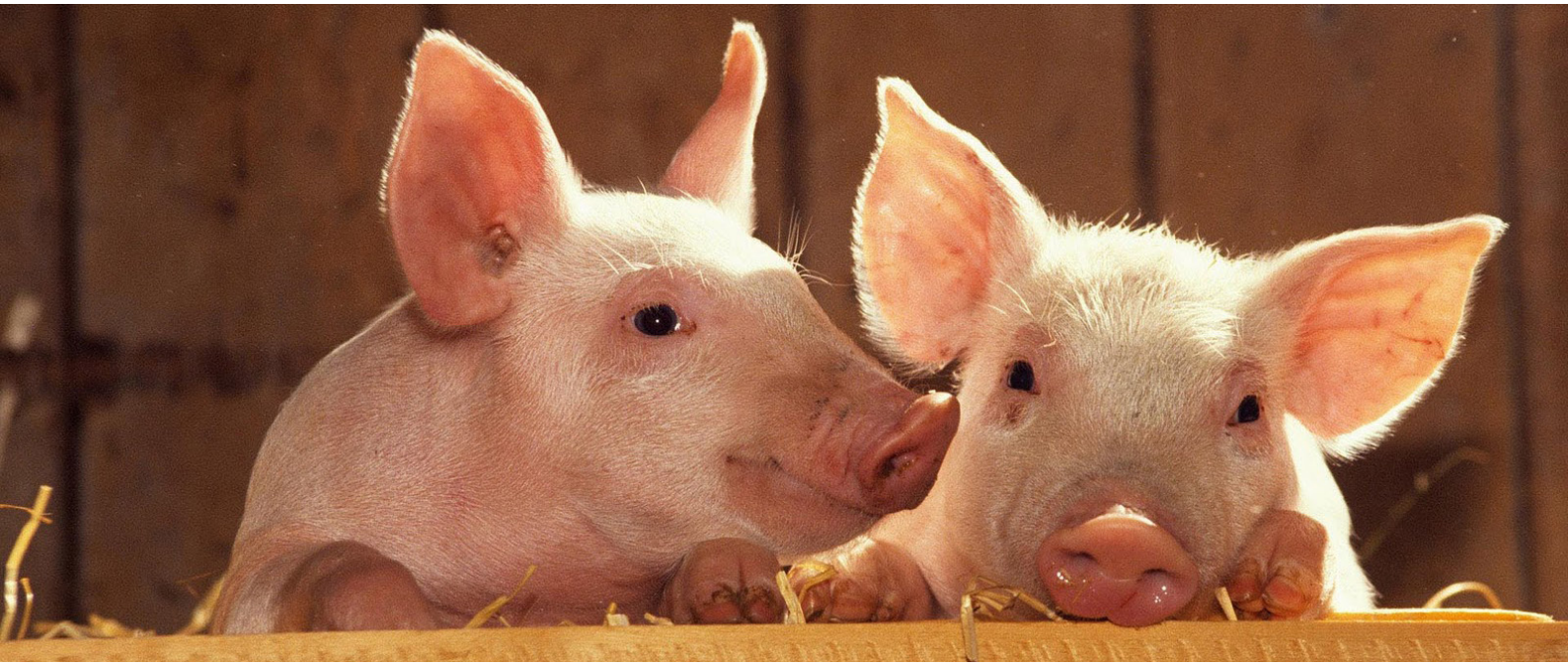
Unfortunately, the rest of the ad is scant on details as to how the net-zero meat of the future will be produced. Does this net-zero claim also involve the heavy use of ever more popular carbon offsetting? Again, the ad doesn't say.

But the real surprise comes at the very bottom of the page where responsibility for these pronouncements is claimed by none other than JBS, the world's largest meat producer.

Multiple investigations spanning many years have linked the Brazilian meat giant to farms involved in destroying the Amazon rainforest - hardly a net-zero activity.

The 2009 Greenpeace International report 'Slaughtering the Amazon' exposed how JBS and other big meat firms were linked to hundreds of ranches operating in the Amazon, including some associated with recent and illegal deforestation. Faced with a global outrage, JBS signed up to various industry agreements and promised to tackle deforestation in its supply chain. But a follow-up Greenpeace report from 2022 shows that, more than a decade later, the company is still at it.[31]

> ***COP26 has been criticised for not adequately highlighting how focusing on farming can help cut emissions of greenhouse gases. The food sector accounts for around a quarter of global emissions. We can't ignore agriculture. At COP26, 90 governments have pledged to cut methane emissions by 30% by 2030.***[32]



REFERENCES

1. https://www.climatecouncil.org.au/resources/what-does-net-zero-emissions-mean/
2. https://www.lse.ac.uk/granthaminstitute/news/what-is-net-zero/
3. https://news.stanford.edu/2022/02/01/new-model-explores-link-animal-agriculture-climate-change/
4. https://www.newcivilengineer.com/latest/understanding-the-difference-between-carbon-net-zero-and-carbon-neutral-is-critical-12-08-2021/
5. https://www.wri.org/insights/net-zero-ghg-emissions-questions-answered
6. https://www.southpole.com/blog/guide-to-climate-neutral-net-zero-climate-positive
7. https://www.lse.ac.uk/granthaminstitute/explainers/why-is-net-zero-so-important-in-the-fight-against-climate-change/

   https://news.trust.org/item/20200921201510-2m3lp/
8. https://www.un.org/sustainabledevelopment/blog/2018/10/special-climate-report-1-5oc-is-possible-but-requires-unprecedented-and-urgent-action/
9. https://www.theclimategroup.org/join-race-to-zero
10. https://www.lse.ac.uk/granthaminstitute/news/what-is-net-zero/
11. https://www.statista.com/chart/26053/countries-with-laws-policy-documents-or-timed-pledges-for-carbon-neutrality/

    https://sdg.iisd.org/commentary/policy-briefs/decoding-net-zero-pledges-to-meet-paris-agreement-goals-sdg-7/
12. https://www.un.org/en/climatechange/net-zero-coalition
13. https://www.unep.org/resources/emissions-gap-report-2021
14. https://www.ipcc.ch/2020/07/31/energy-climatechallenge/
15. https://iea.blob.core.windows.net/assets/c3086240-732b-4f6a-89d7-db01be018f5e/GlobalEnergyReviewCO2Emissionsin2021.pdf
16. https://www.iea.org/news/pathway-to-critical-and-formidable-goal-of-net-zero-emissions-by-2050-is-narrow-but-brings-huge-benefits
17. https://ellenmacarthurfoundation.org/topics/circular-economy-introduction/overview
18. https://www.mckinsey.com/capabilities/sustainability/our-insights/how-a-materials-transition-can-support-the-net-zero-agenda
19. https://www.unep.org/gacere#:~:text=The%20Global%20Alliance%20on%20Circular,level%20and%20in%20multilateral%20fora.
20. https://www.unep.org/resources/publication/circular-economy-latin-america-and-caribbean-shared-vision
21. https://www.aceaafrica.org/
22. https://vietnamcirculareconomy.vn/en/circular-economy-and-the-role-of-standards/
23. https://racetozero.unfccc.int/chinas-net-zero-future/
24. https://thediplomat.com/2021/11/indias-road-to-net-zero/
25. https://unfccc.int/process/the-kyoto-protocol/mechanisms
26. https://www.greenbiz.com/article/carbon-offsets-are-only-delaying-emissions
27. https://www.mckinsey.com/capabilities/sustainability/our-insights/a-blueprint-for-scaling-voluntary-carbon-markets-to-meet-the-climate-challenge
28. https://www.greenpeace.org.uk/news/golden-age-of-greenwash/
29. https://journals.plos.org/climate/article?id=10.1371/journal.pclm.0000010
30. https://netzeroclimate.org/sectors/agriculture/
31. https://www.foodpolitics.com/2021/04/least-credible-food-industry-ad-of-the-week-jbs-and-climate-change/
32. https://research.reading.ac.uk/research-blog/animal-research-to-accelerate-the-transition-to-net-zero-emissions/

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