

# COP26 INSIGHTS REPORT

UN CLIMATE CHANGE CONFERENCE UK 2021



With contribution from:



 wbcSD Global Network Partner

# Table of CONTENTS



Copyright: The Warehouse Group Limited

## 08 What made COP26 so special? Nine takeaways

COP26 produced breakthrough pledges and some big aspirations that will have to be scrutinised against real action in the years ahead. This is what you need to know about the key pledges and commitments that we heard in Glasgow, and how they apply to us.



Copyright: The Warehouse Group Limited

## 22 Climate transition: A Perspective on the role of finance

It is a sometimes hidden hand that exerts powerful influence over the economy, an accelerant that can facilitate growth and innovation, a necessary and core ingredient for change.

## 34

### Solving BIG problems

To achieve net zero, we need a circular carbon economy based on carbon dioxide and synthetic biology done right. This is what LanzaTech makes possible.

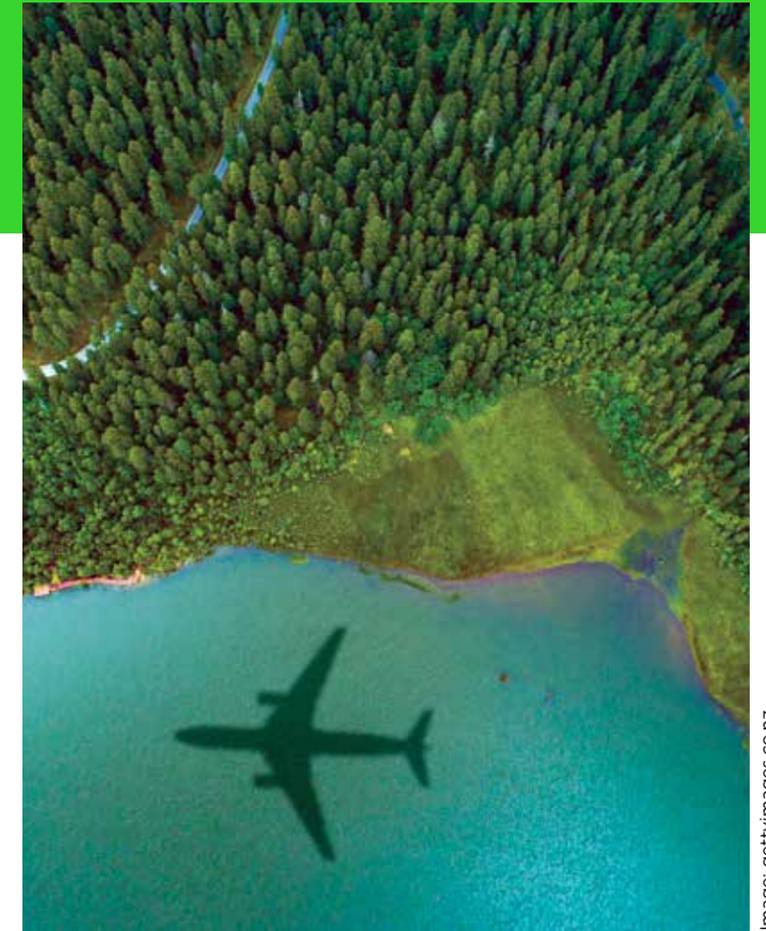


Image: gettyimages.co.nz

- 04** Editorial: Let's prove Vanessa wrong
- 07** COP26 in a minute
- 08** What made COP26 so special? Nine takeaways
- 12** So now, where do we stand against the emissions curve?
- 12** The first victims of climate change
- 14** New Zealand's \$14 billion mitigation bill
- 18** Including women's rights and indigenous rights in NDCs
- 21** Net zero out of reach without nature-based solutions
- 22** Climate transition: A Perspective on the role of finance
- 26** The technologies that will save our world
- 30** Decarbonising transport is critical to keeping 1.5°C alive
- 32** Geothermal: the best kept secret of renewable energy
- 34** Solving Big Problems: How a Kiwi founded industrial chemicals company is turning carbon back into fuel
- 37** The Business Manifesto for Climate Recovery
- 38** About retail, product carbon labelling and circularity
- 42** A search engine for the planet: How breakthrough AI and space technologies are enabling radical transparency
- 43** About CarbonClick. How a Kiwi start-up is becoming a global player in the retail carbon market
- 44** So, what happens next? The roadmap to turning ambition into action

Media enquiries [media.enquiries@thewarehouse.co.nz](mailto:media.enquiries@thewarehouse.co.nz)

# LET'S PROVE VANESSA WRONG

In his latest novel, *Ministry for the Future*, Kim Stanley Robinson describes a wet-bulb heatwave taking place in an Indian town in 2034. Millions perish. The world watches impassively. The Ministry for the Future is formed, which includes a shadow cabinet that uses direct action to eliminate those profiting from burning fossil fuel. Meanwhile, scientists at the poles are pumping water from under the ice caps to prevent them from sliding into the oceans and rising sea levels catastrophically. Climate change fiction or a possible glimpse of the future?

Was COP26 successful? Will it prevent us from wet-bulb heatwaves and the dramatic two-degree temperature increase against the pre-industrial age, especially for the 1 billion people living in the Global South? Returning from Glasgow, I retain a spirit of urgent optimism.

For the first time since Paris, the world has a chance to stay within a two-degree temperature increase. This assumes that all pledges and commitments made at COP26 are met. How confident should we be? Vanessa Nakaté, a prominent Ugandan climate activist, spoke at the plenary session and said, "We do not believe countries, businesses and financial institutions when they have not delivered before." She went on to plead, "Prove us wrong."

Vanessa's scepticism is something that we all need to face.

"We are tasked with the scale of the industrial revolution that needs to happen at the speed of the digital revolution," said Al Gore. This means we need to reinvent a global economy that has been built on decades of burning coal, oil and gas.

In this report, I share with you my experience of COP26 and the insights I gained, which I believe can inform our immediate actions, both here and overseas. Contributors to this report include several other Kiwis who crossed the world to learn and also advocate our views of how society needs to move towards net zero.

What we should remind ourselves is that transitioning to a net-zero world is the largest collaboration endeavour humanity will have ever embarked on. The effort needs to be equitable, rapid and ambitious. Our net-zero plan should focus first on those who are on the front-line of climate change. It should make use of all available technologies and support the development of those in the pre-market stage. We have the tools. What we now need is for the market rules to be made clear – that's a job for our governments, so we can confidently redistribute the trillions of dollars of capital required to achieve our goals. These have been clearly stated in Glasgow.

The time is now. Let's prove Vanessa wrong.

*David Benattar.*



## About the editor

**David Benattar** is Chief Sustainability Officer of The Warehouse Group, one of New Zealand's largest publicly listed retail groups and the third major retailer in the world to become carbon neutral. He is on the advisory board of the New Zealand Sustainable Business Council and represented the New Zealand Climate Leaders Coalition at COP25 in Madrid and now COP26 in Glasgow. Before moving to New Zealand, David spent 20 years working on sustainability and digital innovation in the United States, both in the for-profit and not-for-profit sectors.

## Contributors



### Andy Blair

Andy is the President of the International Geothermal Association and co-founder of Upflow, a geothermal science, research and

innovation company that builds expert teams to provide intelligent solutions to global industry. The nexus between science, business and community is where her expertise sits. Further leadership roles include Co-founder of Women in Geothermal (WING) and the current Chair for Beany (NZ).



### Dave Rouse

Dave Rouse is a Kiwi-born entrepreneur. His connection to the land and his Māori heritage have seen him bring a unique set of sustainability values

into a variety of businesses. Dave has owned over a dozen businesses as well as a charity, and he's held several board positions. Dave is a founding trustee of Sea Cleaners Trust and has 10 years' experience as a pilot.



### Craig Weise

Craig is CEO of New Zealand Green Investment Finance (NZGIF), New Zealand's green investment bank. NZGIF invests to

accelerate emissions reductions and directs public and private capital to the task of decarbonising New Zealand's economy. Craig has over 25 years of experience in private capital markets, both in the United States and New Zealand, with roles in investment advice, law, investment banking and investment management and governance.



### Kate Wilson Butler

Kate is Head of Climate Action for NZ's Sustainable Business Council (SBC), whose members represent 28% of the country's

GDP. She is responsible for driving SBC's strategy to accelerate the transition to a zero-carbon future. Kate spent nine years at the Ministry of Foreign Affairs and Trade, focusing principally on trade, economic, environment and climate change issues. She represented New Zealand at the UN climate talks and was Private Secretary in the office of the Minister of Climate Change.

# COP26

## *in a minute*

Bloomberg  
Green

### Bloomberg Data Dash: A Live Climate Scoreboard for the World

These are the numbers that matter. A difficult global transition is happening right now, away from fossil fuels, deforestation, greenhouse-gas pollution and melting ice. It can be measured with precision and clarity. The processes described by this data dashboard are occurring on a planetary scale, and yet our progress can be measured this minute, in parts per million, in metric tons, in fractions of a degree. This is Bloomberg Green's guide to the worldwide goal of slowing and stopping warming temperatures. This is a record of how far we have to go, and a tool to assess how much we can change.

416.517424

Parts per million CO<sub>2</sub> in the atmosphere

52,000

Million metric tons of greenhouse emissions, most recent annual data

Pune, India

Most polluted air today, in sensor range

+0.89° C

Oct. 2021 increase in global temperature vs. 1900s average

-6.53%

Today's arctic ice area vs. historic average

699

Soccer pitches of forest lost this hour, most recent data

45%

Carbon-free net power in the U.S., most recent data

\$69.9B

Renewable power investment worldwide in Q2 2020

By Eric Roston, Mira Rojanasakul, Paul Murray, Brittany Harris, Demetrios Pogkas and Andre Tartar  
Edited by Aaron Rutkoff

With assistance from: Yue Qiu, Dean Halford, Julian Burgess and Lynn Doan

Source: Bloomberg Green Data as of 21 November 2021.

- **While pledges and commitments made at COP26 are new, they are insufficient.**
- **To stay within a temperature increase of 1.5 degrees**, we need to halve our emissions by 2030 and achieve net zero by 2050 at the latest. This is valid for countries and businesses alike.
- **Net zero is now universally recognised as the direction of travel.** If you are a CEO today, you need to ask what your plan is to achieve net zero.
- **To achieve net zero, we need to adopt the same mindset that drove the digital transformation** of the past 20 years. It is of the same scale and will have a similar impact.
- **There is no silver bullet to decarbonising our economy.** All technologies and financing models need to be deployed at once, with rapidity and agility.
- **To redirect the trillions of dollars required each year to achieve the transition to net zero**, business needs certainty, which government can provide by properly pricing carbon and enabling policies that give clarity about the transition to a net-zero world. For example, the European Union Emissions Trading Scheme has led to the largest reduction in carbon emissions of any major global economy over the past decade.
- **Businesses, on the other hand, need to support and reward sustainable solution providers**, for example, by providing long-term contracts and exploring new financing models.
- **We need to be creative, bold and ambitious** in how we address this crisis – those who do so will emerge as the winners, and those who don't will become increasingly irrelevant.
- **Decarbonising business means understanding its full value chain.** This requires a clear focus on measuring, understanding and reducing Scope 3 emissions.
- **Decarbonising business means partnering both with suppliers and customers** to achieve meaningful emissions reductions. It also means having a clear mitigation strategy using nature-based solutions and recognising the role of carbon offsets, as well as broader outcomes such as biodiversity, diversity and inclusion, job creation and positive social impact. Again, those who engage in such programmes will emerge as the winners.
- **Transparency, honesty, innovation and collaboration** are the key values of the net-zero economy.
- **What is your plan?**

# What made COP26 so special?

## Nine takeaways

COP26 produced breakthrough pledges and some big aspirations that will have to be scrutinised against real action in the years ahead. This is what you need to know about the key pledges and commitments that we heard in Glasgow, and how they apply to us.

### 1. Coal Target

New Zealand has joined two international pledges to phase out coal. Aotearoa New Zealand is among about 40 countries agreeing to phase out coal burning for electricity generation in the next 10 to 20 years.

For the first time, it's acknowledged that coal is the most polluting fossil fuel. However, the coal target was watered down at the last minute to a pledge

to "phase down" rather than "phase out". India have argued that developed nations have benefited from decades of coal powering their economic development. And China, Japan and South Korea, which are the biggest financiers of overseas oil and gas, are not among the signatories.

Yet, if you want to be anxious about the true meaning of this pledge.

### 2. China-U.S. Deal

The biggest surprise in Glasgow was an agreement by the two largest emitters to work together on climate. No big concrete action in this, but the

good news is that the pair are at least talking about climate in spite of their broader diplomatic standoff. Well done John Kerry and Xie Zhenhua.

### 3. Carbon-Trading Rules (Article 6)

Hard-won and long-awaited. That is the article 6 resolution such countries as New Zealand were waiting on as we will need to purchase a uniquely large amount of international emission reductions to reach our 2030 target of reducing our net ghg emissions by 50% against 2005 baseline. The rules on international carbon trading bring

clarity and standardisation that should help reduce emissions, though some activists are worried they aren't quite tight enough. The pressure to define the rules was growing as the voluntary market for offsets grows in an unregulated sprawl. By some estimates the market could eventually be worth \$100 billion.

### 4. Fossil Fuel Subsidies

The Glasgow pact called for an end to fossil fuel subsidies. It finally made its way into a COP accord, which is signed off by 196 countries. G-20 nations spent \$600 billion subsidising fossil fuels last year, something John Kerry labelled "insanity". The roadmap to achieve this remains somewhat vague, which is why the one-year review of the NDCs is a big deal.



US special envoy for climate, John Kerry speaks about finance commitments to the global crisis.

Image: gettyimages.co.nz

### 5. Methane Pledge

Slashing methane has emerged as the quickest fix to the climate crisis. More than 100 countries, including New Zealand, agreed to cut methane emissions, and there's a reference to methane for the first time in the overall pact. It's not binding, but again, it's a powerful signal that it's time to tackle emissions that are more potent than CO<sub>2</sub>. Russia and China didn't sign up.

Bloomberg Green ran a story calling Methane "the cheap and easy climate fix that can cool the planet". Cheap and easy? Not in New Zealand - 48% of our emissions come from the agriculture sector (hint, the majority of this 48% is methane). *The target: a 30% reduction globally from last year's levels by 2030.*

### 6. Improving targets

Countries have to come back next year with better climate plans. As things stand, countries' climate plans, known as nationally determined contributions, or NDCs, put the planet on track for 2.1 to 2.7 degrees of warming depending on the way targets are accounted for. Noting that if the 197 governments meeting in Glasgow deliver on everything they've announced, including long-term and short-term pledges not yet

turned into new NDCs, the planet will warm by 1.8 degrees. That's a large improvement over the 2.1 degrees forecast by the International Energy Agency for warming prior to the ongoing climate talks in Glasgow. The thing to watch now is whether countries actually get cracking on new plans. And remember, India said it will not submit any new target until the Loss & Damage \$1 trillion fund is confirmed.

### 7. Scrutiny

New rules were agreed that will allow for greater scrutiny on emissions reporting. At last, climate targets should be comparable, allowing for everyone to assess what everyone

else is doing. This is an important bit of progress. Beyond this governance review, we now have the surveillance and data technologies to ensure that what is reported is actually factual.

**8. Cash Damage**

For the first time, there’s a recognition that countries struck by catastrophic climate events should get help from the countries responsible for the majority of global emissions.

But there are two different set of finance request: one is the finance need to prepare for mitigation and adaptation (forward spend) and the other, more contested and not agreed upon, is called Loss & Damage and refers to what poor countries see as a debt owed by developed nations who are responsible for the bulk of greenhouse gases accumulated in the atmosphere through decades of fossil fuel emissions generation.

There’s an agreement to properly set up a mechanism — though the details and exact cash still need to be hashed out. That’s something for COP27, in Egypt next year. But let’s remember, rich countries

**Noticeably New Zealand increased its pledge by \$1bn over four years.**

already failed to meet a 2018 pledge to provide \$100 billion a year in climate finance, instead gathering about \$80 billion. The \$100 billion a year threshold is now supposed to be met in 2023. Noticeably New Zealand increased its pledge by \$1 bn over four years.

And to make the issue more complicated, India now wants \$1 Trillion committed by 2030 before It even raises its targets to cut emissions. This is ten times more than the unmet \$100 billion a year for all poor countries sought under previous deals. The rounds of negotiations will get even more arduous.

**9. The \$130 trillion**

Banks, investors and insurers representing \$130 trillion in assets committed to decarbonise their businesses by mid-century, as part of the Glasgow Financial Alliance for Net Zero (GFANZ). The list of members includes some of the biggest names in banking: JPMorgan Chase & Co.; Citigroup Inc.; Morgan Stanley; BlackRock Inc.; and HSBC Holdings Plc. Together, members make up 40% of global financial assets. Finance is a powerful tool in the fight against climate change, but the list of signatories doesn’t include the world’s three biggest banks, all of which are Chinese and major providers of coal finance.

Even for the banks signing up, the key test is whether they stop financing fossil fuels. As Bloomberg Green puts it, “the gaping question remains whether financiers

accustomed to making billions on fossil-fuel deals will have the willpower to stop”. For example, in Glasgow, Barclays won the Race To Disaster award for financing the fossil fuel industry \$5.6 billion in 2021, making them the UK’s number one fossil-fuel-funding bank this year. The award was granted by Market Forces, an Australian organisation that exposes the institutions that are financing environmentally destructive projects and helps people to hold these institutions accountable.

How should we look at this? “The idea that banks are going to solve the climate crisis. I don’t get that,” says Bill Gates in his book *How to Avoid a Climate Disaster*. *Scan the code to see Market Forces campaign.*



*Source: Bloomberg Green*



Copyright: The Warehouse Group Limited



Copyright: The Warehouse Group Limited

Saturday protest draws 100,000 climate activists in the streets of Glasgow.

So now, where do we stand against the

# EMISSIONS CURVE?

If the 197 governments who met in Glasgow deliver on every pledge they've announced in Glasgow the planet will warm by 1.8 degrees. It is the first time since Paris that we have a shot at staying below 2 degrees.

That's a large improvement over the 2.1 degrees that's been forecast by the International Energy Agency prior to Glasgow. But worse outcomes remain possible if countries don't turn their promises into actions. In fact, based on current policies, the world is on a 2.7 degrees pathway. Even with the new pledges and commitments, the world still needs to address a gap of approximately 12.5 gigatonnes of CO<sub>2</sub> to stay within 1.5 degrees. Temperatures have already risen by 0.9 degrees, causing extreme

weather events such as the wildfires, drought and devastating floods, including the Australian wildfires of 2019 which is one of the worst wildlife disasters in history. This temperature increase has also been identified as the cause of the current famine in Madagascar, which headlines have called the world's first "climate famine".

All the outcomes are still subject to large uncertainties. Scientists cannot precisely predict how much warming could be triggered by a certain amount of greenhouse gases. The difficulty in predicting future global warming is why experts advocate for deeper cuts in emissions as soon as possible. *Scan the code to read the report.*

Source: Energy Transitions Commission



# The first victims of Climate Change

## Madagascar is called the first climate famine

The images of the Madagascar food crisis are distressing. The drought is causing a famine leaving 500,000 children under the age of five at risk of malnutrition.

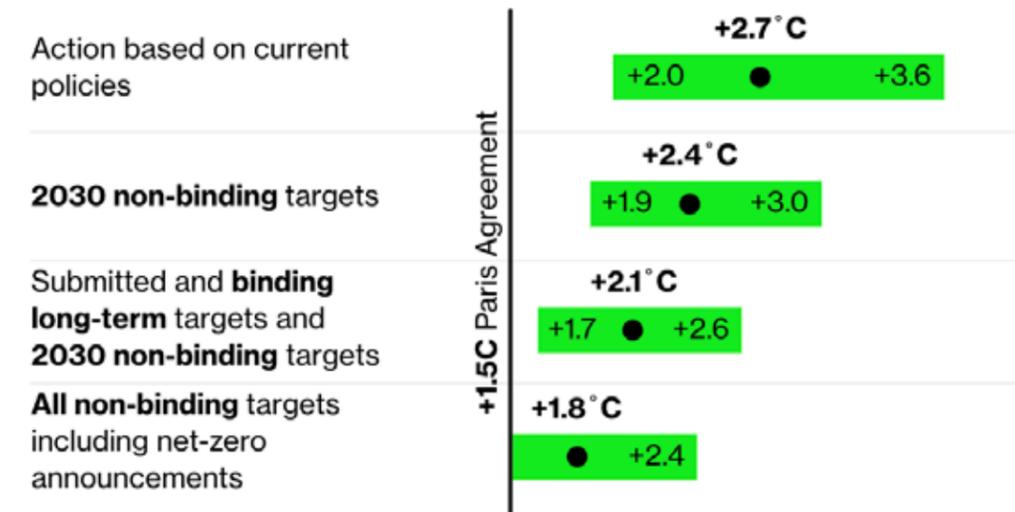
The United Nations sees climate change as the cause. "This is an area of the world that has contributed nothing to climate change, but now, they're the ones paying the highest price," said David Beasley, the boss of the United Nations World Food Programme. The crisis is compounded by COVID-19, bringing a perfect storm. *Scan code to read more.*

Source: Amnesty International



## Still a Gap to 1.5° C Above Pre-Industrial

Projections for global temperature increase by 2100 based on targets and announcements from COP26



Note: November 2021 update  
Source: Climate Action Tracker

## Our disappearing Pacific neighbours

Tuvalu's foreign minister, Simon Kofe, recorded a speech for the Glasgow conference while standing knee-deep in seawater to highlight how his low-lying Pacific Island nation is on the front-line of climate change.

"The statement juxtaposes the COP26 setting with the real-life situations faced in Tuvalu due to the impacts of climate change and sea level rise and highlights the bold action Tuvalu is taking to address the very pressing issues of human mobility under climate change," Kofe said in his message.

Sea levels in the western Pacific Ocean have been increasing at a rate two to three times the global average, meaning there has been net rise of 0.3

metres in the last 30 years. The most obvious impacts of rising sea levels are coastal erosion and the flooding of low-lying land, but communities are affected long before their islands become submerged. Saltwater seeps into groundwater, making it unfit

for household use and for drinking and making it near impossible to grow crops.

*Scan the code for more on Tuvalu from The Guardian.*



Kofe's decision to speak at COP26 while standing in the sea has been drawing attention to Tuvalu's struggle against rising sea levels.

# New Zealand's \$14 billion mitigation bill

If you need a reminder of our country's emissions profile, you need to pay attention to two numbers: 41.6, the share of emissions coming from energy consumption, and 48.1, the share of emissions coming from agriculture. This profile is unique to New Zealand. From 1990 to 2019, New Zealand gross emissions increased by 26 %, mainly due to methane from dairy cattle and carbon dioxide from road transport. Gross emissions refer to total emissions. Net emissions are gross emissions minus emissions removed through land use, land use change and forestry. Our net emissions in 2019 were 54.9 Mt CO<sub>2</sub>-e.

Just before COP26, New Zealand updated its pledge to reduce emissions by 50% by 2030. This is a significant improvement over the previous target of 30% by 2030. Yet, even this new target isn't enough. Not only do we have to deliver on our 2030 pledge, but we also have to do more to stay within the 1.5 degree temperature increase.

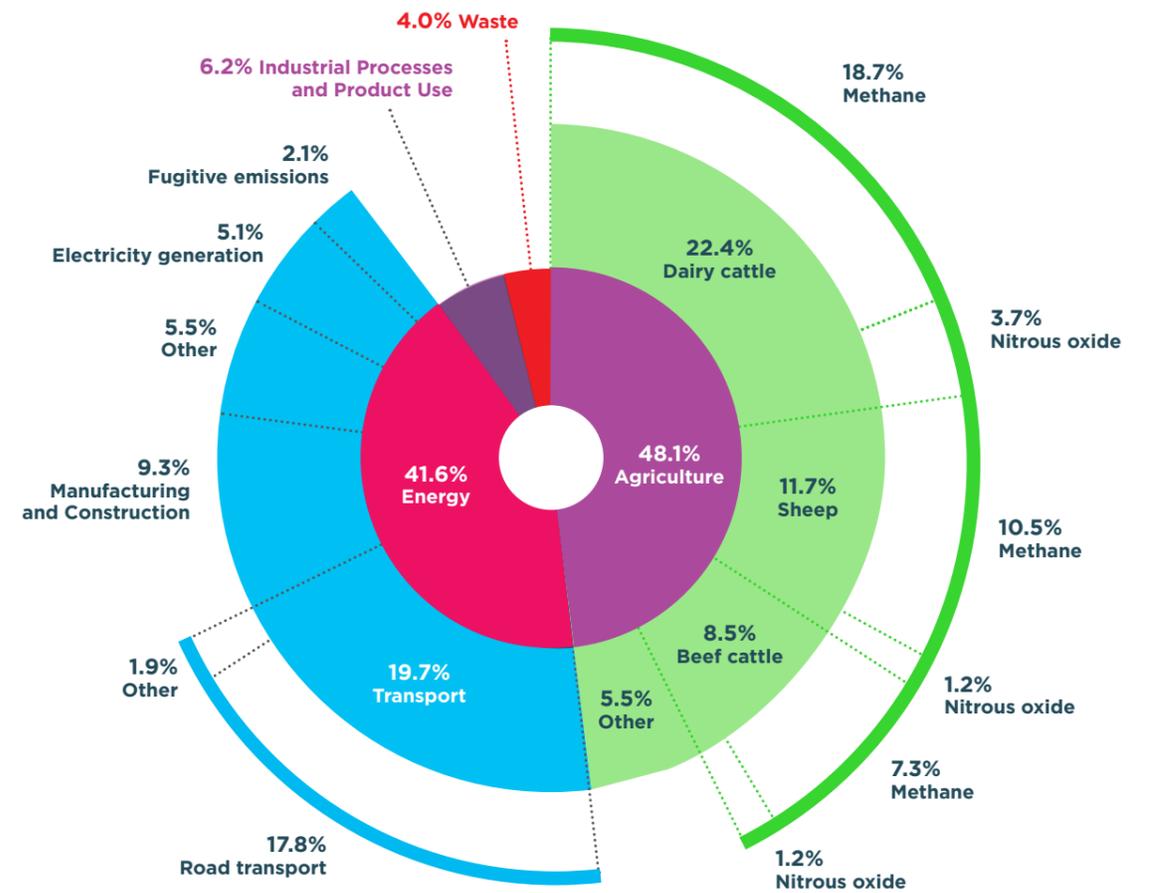
For this decade, the Climate Change Commission estimates:

- To stay within 1.5 degrees, our share of the global emissions market to 2030 is 571 million tons
- New Zealand's gross total estimated emissions between now and 2030 are about 800 million tons
- Forestry sequestration is forecast to be about 85 million tons. That's roughly 10%
- We plan to buy 100 million tons of offshore mitigation. That's roughly 12%

- We then need to reduce our gross emissions domestically to close the remaining gap and get to 571 million tons.

If we assume \$140 for a ton of carbon, that's \$14 billion worth of offshore mitigation until 2030. GDP is estimated to be well over \$3.5 trillion in that decade. The assumption of \$140 a ton applies whether we reduce emissions domestically or purchase carbon offsets internationally. There are numerous assumptions behind this number. The cost of reduction varies widely depending on the technology and the financing model, but we can use \$140 as a realistic assumption for now.

We are purchasing offshore mitigations under the rules set by Article 6, which is the carbon markets part of the Paris agreement. Article 6 was resolved at COP26. It ensures that countries



Supplied by the New Zealand Ministry for the Environment

## Non-state actors at COP

Businesses, activists and NGOs can have a surprisingly significant role at COP. They help shape government positions, conduct research and analysis on issues high on the agenda, helping to resolve disputes between countries, and advocating their preferred approaches.



Copyright: The Warehouse Group Limited

can buy or sell credits that would be added or deducted from their NDC. The rules avoid double counting and leakage between countries.

These billions of dollars of mitigation spend could be invested in speeding up actual emissions reductions in our country. The Climate Change Commission estimates of the economic multiplier of investing domestically instead of buying offshore credits range from zero to 1.8. This means that investing in New Zealand instead of buying offshore mitigation could bring significant economic value

to New Zealand depending on the cost curve of the solutions available to us. As we move to more difficult domestic action locally the price of domestically reducing emissions goes up. So domestically we have to do as much as we should as soon as we can and then do the offshore mitigation.

The more expensive we think offshore mitigation will cost us per ton then the more justified we are in doing the domestic action harder faster sooner.

*Scan the code to listen to the interview.*



Source: RNZ, NZ Climate Commission Chair, Rod Carr. 17 November, 2021.

# About blue carbon

The role of water and the oceans in tackling climate change moved from the margins to the main stage at

COP26. Public and private finance for the protection and restoration of oceans is being mobilised, and ocean-based climate solutions are accelerating.

Indeed, oceans are now recognised for their capacity to sequester carbon, giving them the name "blue carbon". Because oceans cover 70% of the planet, ocean ecosystem restoration has the greatest blue carbon development potential. Blue carbon is the carbon stored in coastal and marine ecosystems. Coastal ecosystems such as mangroves, tidal marshes and seagrass meadows sequester and store more carbon per unit area than terrestrial forests.

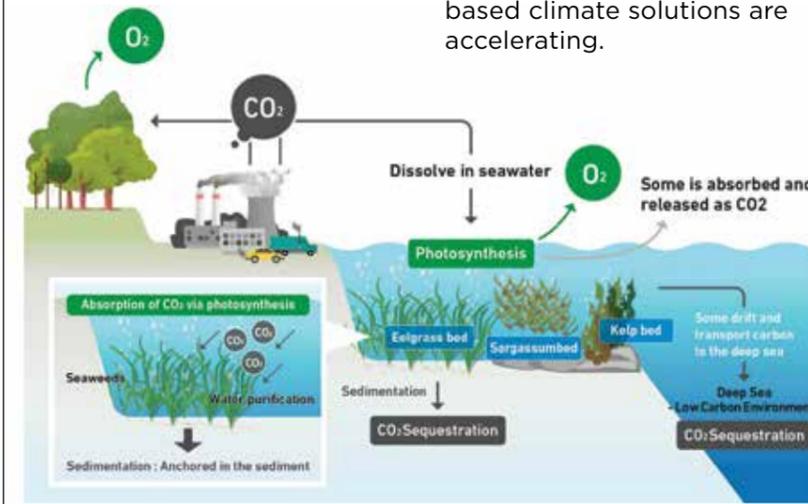


Image: ENEOS Innovation Partners



# Including women's rights and indigenous rights in NDCs

At COP26, those with the power to make decisions about how much the world warms were mostly old and male. Those who were protesting the pace of action were mostly young and female.

Women and girls suffer disproportionately from the impacts of climate change as they are, on average, poorer, less educated and more dependent on subsistence farming. A United Nations report found that 80% of those displaced by the climate emergency are women.

Alok Sharma, UK minister of state and president of COP26, said, "We know from our efforts to tackle climate change that it is more effective when we put women and girls at the heart of those efforts." He pointed out that climate-related events will prevent at least 4 million girls in lower-income countries from completing their education in 2021, citing a Malala Fund report. On current trends, the climate crisis will contribute to at least 12.5 million girls not completing their education each year.

He announced that the UK was giving £165 million to tackle climate change through addressing gender inequalities.

Some countries announced the climate projects they funded would have to incorporate gender equality. Patricia Fuller, Canada's climate change ambassador, said, "As part of the doubling of Canada's climate finance pledge to C\$5.3 billion (NZ\$6.1 billion) over five years, Canada will apply the target of 80% for projects that will target gender equality outcomes.

"When we talk about ambition, we have to talk about gender justice and intergenerational equity especially when it comes to including young women and girls, specifically indigenous young women, black young women, young women from the Global South."

Renate Okavaringa, 24-year-old climate justice advocate from Brazil. *Scan the code to read more.*

Source: The Guardian



Canada's climate finance pledge  
**\$6.1B**  
over five years

Canada will apply the target of  
**80%**  
for projects that will target gender equality outcomes



Image: gettyimages.co.nz

## Supporting indigenous peoples and local communities:

# Why it matters

At COP26, two dozen countries and foundations pledged \$1.7 billion of financing from 2021 to 2025 to help advance forest tenure rights for indigenous peoples and local communities, recognising their role as guardians of forests and nature. They also called on other donors to join in. The money will go towards:

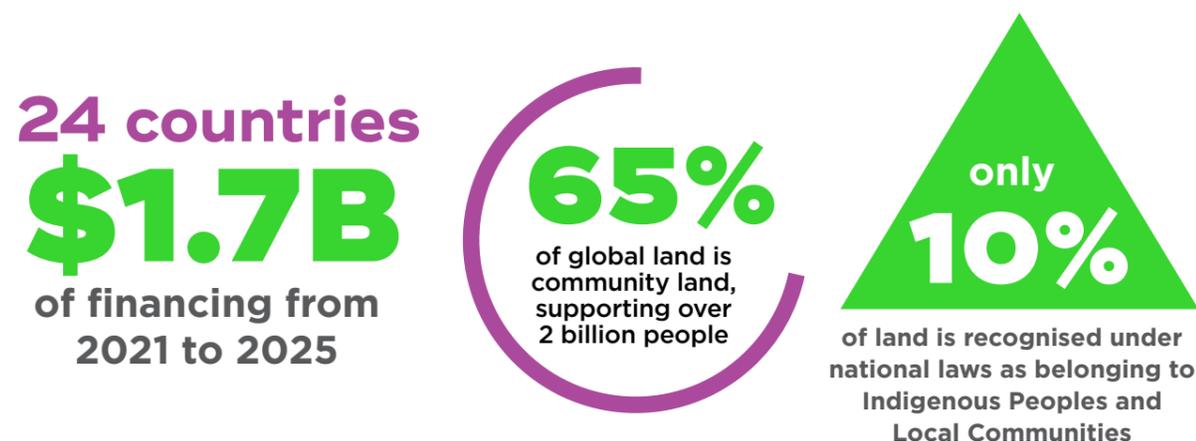
- 1) channelling support to indigenous peoples and local communities, through capacity-building, governance structures and management systems
- 2) working to secure, strengthen and protect their land and resource rights, including by mapping and registering tenure rights
- 3) supporting national land and forest tenure reform processes.

### Why it matters

As much as 65% of global land is

community land, supporting over 2 billion people, including 370 million to 500 million indigenous peoples. Yet only 10% of land is recognised under national laws as belonging to indigenous peoples and local communities. Community land is under growing threat from companies and investors scrambling to acquire it for investment and industrial agriculture and from illegal activities like logging, mining and hunting. The IPCC has made clear that tapping into indigenous and local knowledge and recognising their rights, governance systems and laws is central to adapting to climate change, mitigating it and advancing sustainable development.

Source: High Level Climate Champions COP26 Daily Digest



# Net zero out of reach without nature-based solutions

Net zero will not be reached without nature. Ending deforestation and restoring land is necessary to deliver net zero commitments, including those of corporates and investors. The IPCC states there is no pathway without a near immediate halt to deforestation and a significant restoration of land.

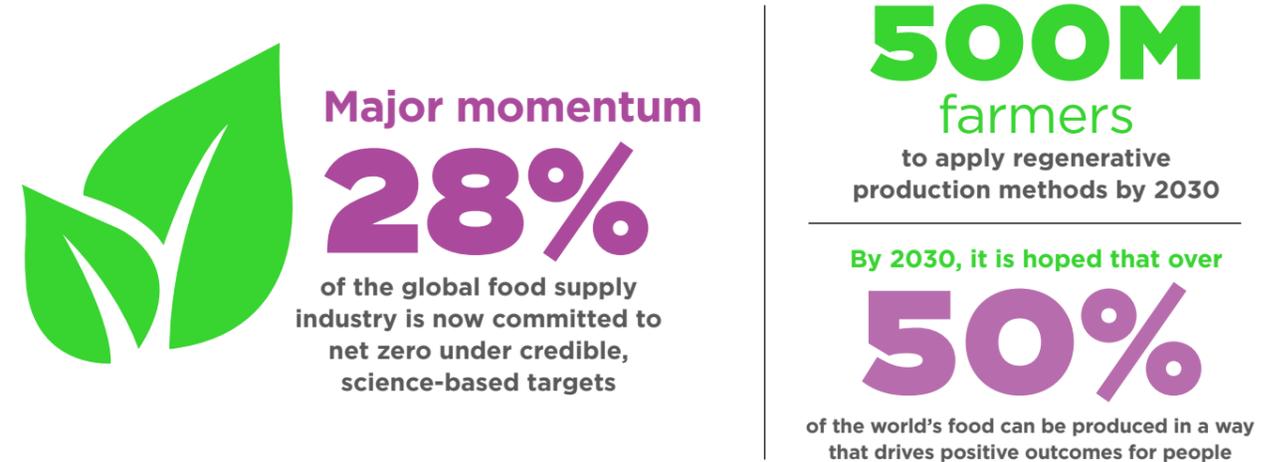
Global food and agricultural systems are aligning with a zero carbon, nature positive future. There is now real momentum as 28% of the global food supply industry is committed to net zero.

A new coalition was launched at COP26. Regen10 brings together businesses, investors, NGOs and policy makers who will work with over 500 million farmers to apply regenerative production methods

by 2030. By 2030, it is hoped that over 50% of the world's food can be produced in a way that drives positive outcomes for people, for nature and for the climate.

Private finance now recognises the economic opportunity of a nature-positive economy. Realigning capital for this economy makes economic sense: the long-term financial benefits of protecting nature exceed costs by one to five. Thirty-three major financial institutions with \$8.7 trillion in assets under management committed to phase deforestation out of their commodity portfolios by 2025. *Scan the code to read more about Regen10.*

Source: WBCSD daily digest



# Climate transition: THE ROLE OF FINANCE

by Craig Weise, New Zealand Green Investment Finance

## Why is the finance discussion so critical to climate transition?

Because finance is powerful. The financial system can drive economic prosperity – or be a destructive force causing economic decline and misery. It is a sometimes hidden hand that exerts powerful influence over the economy, an accelerant that can facilitate growth and innovation, a necessary and core ingredient for change. Finance is so important to global decarbonisation that it represents one of the three pillars of the Paris Agreement, alongside mitigation and adaptation.

The global dialogue around climate finance has often been focused on public finance, sovereign commitments for domestic investment or climate aid and support for poorer countries to transition or enhance climate resilience – all important matters. However, given that only about 30% of the investment required for climate transition is expected to come from public sources, the role of the private finance actors has become increasingly emphasised.

However, financial systems vary dramatically across the world, as does their ability to help deliver on the change required. New Zealand occupies a special place regarding finance – we are a relatively

wealthy country with good financial architecture. However, we also have a small economy, with lots of small businesses, and our financial markets lack breadth and depth in a number of areas – so we have a lot in common with the developing world. This latter point is often forgotten.

At COP26, in outlining finance requirements for the race to zero, the United Nations Framework Convention on Climate Change (UNFCCC) categorised the private financing actors as corporations, institutional investors, infrastructure investors, private equity and venture capital, commercial financial institutions, households and individuals. But the relationship between these actors is complicated.

Corporate actors play the biggest potential role, but they are dependent on support from the other actors, and these other actors are dependent on corporate actors to take action in order to provide opportunity. The same can be said of individuals and households, and even government. But what happens when an actor isn't there? When a financial system isn't optimised to deliver capital overall let alone capital for climate change? In New Zealand, we have few institutional investors

## How New Zealand's leading retail group is using green finance to accelerate its sustainability leadership.

**During COP26, The Warehouse Group announced a trailblazing Sustainability-Linked Loan agreement with Westpac NZ.**

The Group will have to meet five sustainability performance goals including sustainable packaging, carbon emissions and gender targets to receive discounted rates, under a Sustainability-Linked Loan agreed with Westpac NZ.

The \$70m two-year extendable loan financially incentivises The Warehouse Group to meet sustainability targets set out over a 4-year time period, with a higher interest rate on the loan if it falls short of its commitments.

and fewer infrastructure investors, and our private equity and venture capital sector is relatively small compared with the size of our economy. So how will our financial system deliver?

The good news is that some of the policy architecture required to help the local financial system deliver a lower carbon future is in place or underway. But there is much to be done in our own financial markets – public and private – before the level of investment required to support climate transition is achieved.

New Zealand Green Investment Finance (NZGIF) was established in recognition of this challenge. Our purpose is to help accelerate investment in New Zealand's low carbon future. We do this through our own direct investment activities and by creating opportunities for others to invest with us. We are also increasingly focused on how to create investable opportunities for markets and show the way to a mature financial system.

In adopting a "green banking" model, New Zealand was one of a growing number of jurisdictions that recognised the need for a specialist institution equipped with the right focus and resources to actively participate in the financial system to help it evolve. As a model, green

banking is gaining momentum globally as one of the tools that can help capital get to where it needs to be. Green banks actively reach into the market and get things going. They create opportunities for investment, provide valuable information to other market actors, give credibility to the public-private partnership needed for climate transition and invest time and resources to help put in place the building blocks necessary for system evolution.

Of course, green banking, or any individual green bank, cannot meet the capital requirements necessary for transition. A broad number of providers and users of capital must participate along the way. Leadership and strategy aligned with transition will allow finance to play its part, and in New Zealand, the benefits of this will not only include decarbonisation, but also the potential to play a different role in a world disrupted by energy change, and it will allow the further development of our financial system.

At NZGIF, we are here to play our part in helping make this happen. We hope you are too. Curious about how we can do that together and help investment accelerate transition? Get in touch.

# green finance

## Vs brown finance

Since the 2015 Paris Agreement, banks have facilitated almost \$4 trillion of financing for fossil fuels – and scored \$17 billion in fees in the process. That compares with about \$1.5 trillion channelled into green investments over the same period.

In 2021 alone, lenders have arranged about \$460 billion of bonds and loans for the oil, gas and coal sectors, and even those lenders who have signed up to Glasgow Financial Alliance for Net Zero (GFANZ) have made clear they won't be abruptly exiting. GFANZ was signed by Banks, investors and insurers representing \$130 trillion in assets committed to decarbonise their businesses by mid-century. Together, members make up 40% of global financial assets.

JPMorgan, which only joined the alliance last month, has made about \$985 million in revenue since the end of 2015 arranging debt and lending for the oil, gas and coal industries. That compares with the roughly \$310 million it generated in income from green finance.

"We have to balance good public policy with the short-term implications, and that's why it is a transition," Chief Executive Officer David Solomon said last month.

Even if all GFANZ signatories start to move away from brown financing, there's plenty of capital waiting in the wings to fill the gap

BlackRock CEO Larry Fink commented about this disconnect, saying "the largest capital-market arbitrage in our



**"There's more movement away from hydrocarbon assets into private hands than anytime, ever..."** *BlackRock CEO Larry Fink*

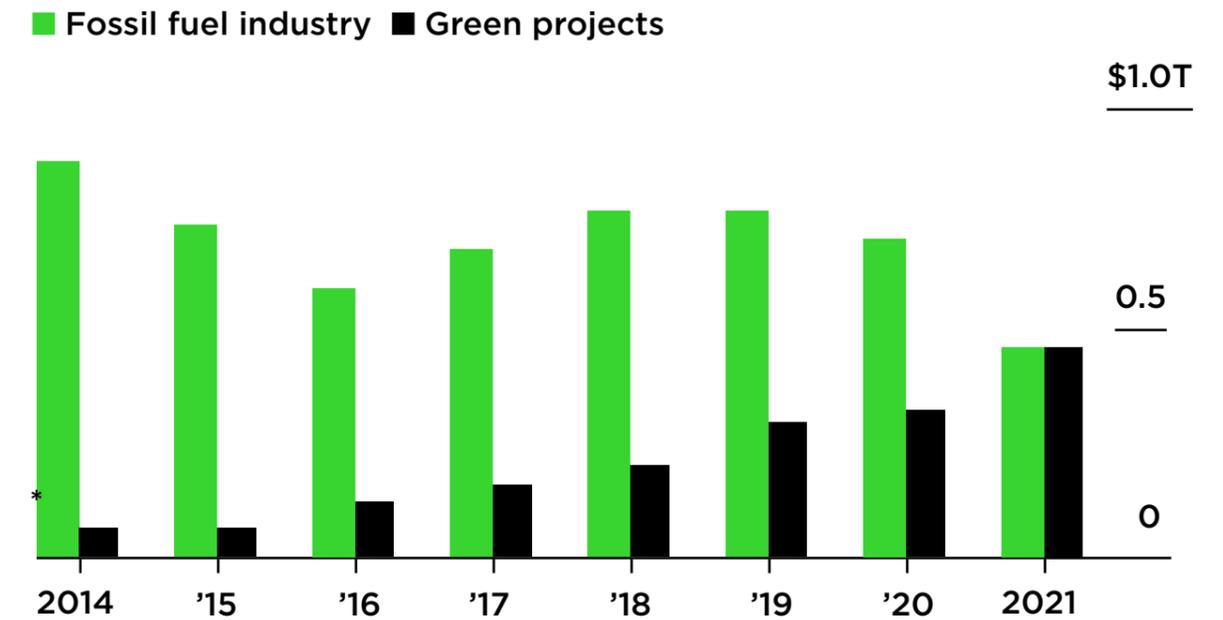
lifetimes" was under way as hydrocarbon assets move from public to private hands. "There's more movement away from hydrocarbon assets into private hands than any time, ever," Fink said. "That does not change the net zero world. That's window dressing, that's greenwashing."

*Source: Bloomberg Green*

Image: gettyimages.co.nz

### Favouring Fossil Fuel

Oil, gas and coal-related financing has amounted to more than double the amount of green debt insurance since 2016



\* Paris Climate Agreement  
Source: Bloomberg League Tables

**JPMorgan has made \$985M**

in revenue since the end of 2015 arranging debt and lending for the oil, gas and coal industries...



**...compared to \$310M**  
it generated in income from green finance



Image: gettyimages.co.nz

# The technologies that will save our world

Innovation and new scientific breakthroughs will be critical to developing and scaling the solutions needed to reduce emissions. To that point, the UK Presidency has launched a series of initiatives to accelerate the development of new clean technologies, with an initial focus on the key areas of power, road transport, steel and hydrogen.

There are signs of progress even in the most carbon-intensive industries. There are now 20 commercial scale low-carbon steel-making facilities planned to be deployed by 2030, marking a key breakthrough in the sector. And in cement, 40 major cement and concrete producers have committed to cut emissions 25% by 2030 on the way to net zero by 2050. This comes as more than 15 corporations across the concrete value chain, including in engineering and construction, are preparing to launch the ConcreteZero Buyers Club to pool demand for new products.

In fact, research by McKinsey Sustainability on Europe's net-zero pathway suggests that climate technologies that are already mature could deliver about 60% of the emissions abatement that will be needed to stabilise the climate by 2050. The challenge is that further abatement must come from climate technologies that aren't quite ready, including 25 to 30% from technologies that are demonstrated but not yet mature and another 10 to 15% from those still in research and development.

As a reminder, putting the world on a path to net zero means tripling decarbonisation investment for 2021-2025 compared with 2016-2020. As of today, investments will need to

average \$4.5 trillion per year after 2026 to reach \$125 trillion in total investment by 2050. Private actors could provide 70% of this financing, offering huge opportunities for investors.

The good news is that the economics of low-carbon investments are rapidly improving. By 2030, 70 to 80% of decarbonisation technology investments could be better value than conventional, emissions intensive alternatives. Public and institutional action can help realise the full potential of private capital.

Many low-carbon technologies already offer greater long-term returns if investors can accommodate higher upfront costs and longer return periods.

For example, solar PV technologies are already or almost cost-competitive today, while passenger car electric vehicles will be cost-competitive in around five years. Over the past decade, the cost of some renewable-energy projects came down by almost 90%, as did the costs of electric-vehicle batteries, LED lighting and other energy-efficient hardware.

*Scan the code and read more about the Net Zero Financing Roadmaps.*



Source: Vivid Economics based on McKinsey Decarbonisation Pathway (DPO) and IEA NZE - November 2021

Five groups of technologies could attract \$2 trillion of capital per year by 2025 and abate 40 percent of greenhouse-gas emissions by 2050.

## Technologies to watch

| Electrification  | Agriculture   | Power grid   | Hydrogen  | Carbon capture  |
|--|---|--|---|---|
| <ul style="list-style-type: none"> <li>• Electric-vehicle batteries</li> <li>• Battery-control software</li> <li>• Efficient building systems</li> <li>• Industrial electrification</li> </ul> | <ul style="list-style-type: none"> <li>• Zero-emissions farm equipment</li> <li>• Meat alternatives</li> <li>• Methane inhibitors</li> <li>• Anaerobic manure processing</li> <li>• Bioengineering</li> </ul> | <ul style="list-style-type: none"> <li>• Long-duration storage</li> <li>• Advanced controls</li> <li>• Software and communications</li> <li>• Vehicle-to-grid integration</li> <li>• Building-to-grid integration</li> <li>• Next-generation nuclear</li> <li>• High-efficiency materials</li> </ul> | <ul style="list-style-type: none"> <li>• Low-cost production</li> <li>• Road-transport fuel</li> <li>• Ammonia production</li> <li>• Steel production</li> <li>• Aviation fuel</li> </ul> | <ul style="list-style-type: none"> <li>• Pre- and post-combustion capture technologies</li> <li>• Direct air capture</li> <li>• Bioenergy with carbon capture and storage</li> <li>• Biochar</li> <li>• CO<sub>2</sub>-enriched concrete</li> </ul> |

## Annual investment by 2025, \$ billion



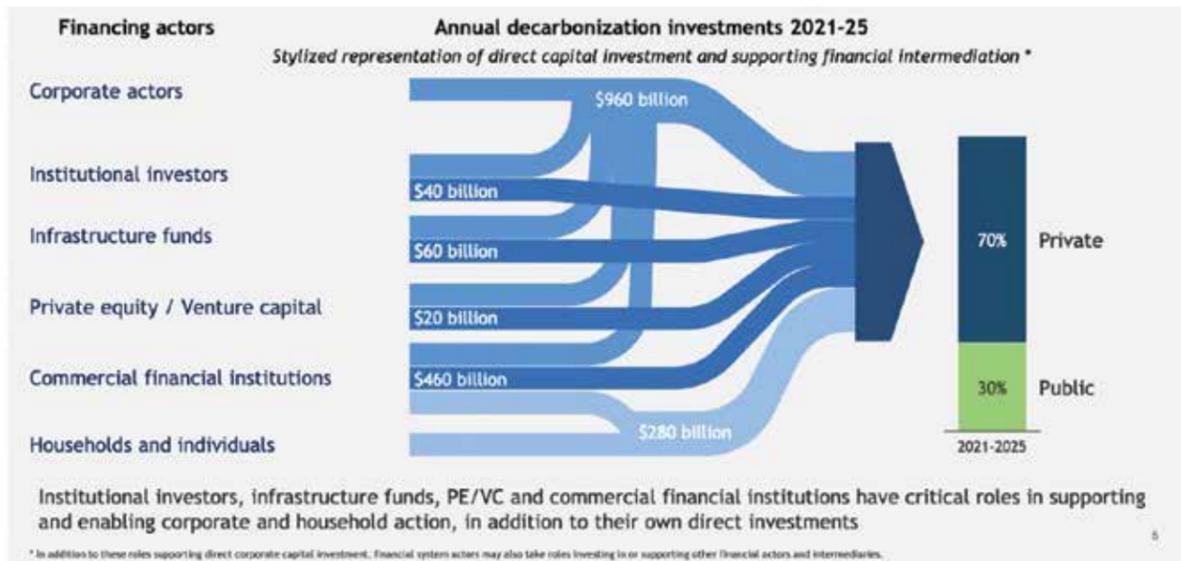
## CO<sub>2</sub> abated per year in 2050, gigaton (1.5°C pathway)



McKinsey & Company



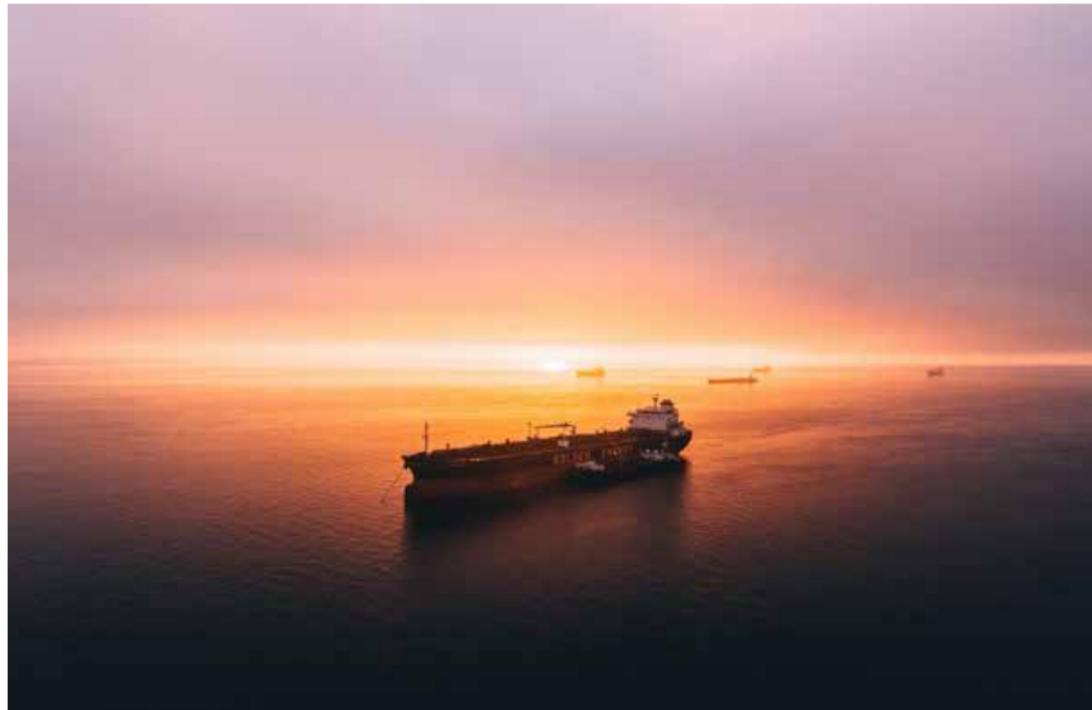
*Scan the code to read the research in greater depth.*



Source: UNFCC Race to Zero campaign with support and analysis from Vivid Economics

## About hydrogen

Hydrogen could play a significant role in decarbonisation, as a clean-energy carrier or fuel ingredient with many applications. High-energy density and zero-carbon combustion make hydrogen well-suited to address the 30% of emissions that would be hard to abate with electricity alone. Hydrogen could ultimately satisfy 15 to 20% of energy demand across sectors as diverse as aviation and shipping, industry, buildings and road transport.



# DECARBONISING TRANSPORT

*is critical to keeping 1.5°C alive*

COP26 saw important steps taken by governments and private sector organisations towards the end of fossil-fuel-powered transport.

The major new deal brings a mass market for zero-emissions vehicles one step closer.

Over 100 national governments, cities, states and major businesses have signed the Glasgow Declaration on Zero-Emission Cars and Vans to end the sale of internal combustion engines by 2035 in leading markets and by 2040 worldwide. Major signatories include the UK, Denmark, Chile, Kenya, Buenos Aires, California and the Seoul Metropolitan Government, alongside manufacturers Ford, Mercedes Benz and Volvo.

The deal means one in every three cars sold will be zero-emission vehicles, massively raising the stakes for even the countries that haven't signed the commitment. For example, over 60% of United States car exports are now to countries that have committed to reach 100% zero-emission car sales.

A key milestone was passed on decarbonising aviation, with a major commitment on demand for sustainable aviation fuel.

More than 80 aviation industry businesses and large corporate customers pledged to increase sustainable aviation fuel to 10% of jet fuel use by 2030, a 1,000-

fold increase from today's level. If delivered, this would save approximately 60 million tonnes of CO<sub>2</sub> per year and provide 300,000 green jobs.

The shipping industry has made a commitment to scale-up use of zero-emission fuels by 2030, as major

customers commit to buying zero-emission freight.

Over 200 major businesses from across the shipping value chain have committed to scaling and commercialising zero-emission shipping vessels and fuels by the end of the decade. And nine major global consumer-goods companies have pledged to only purchase freight transported by zero-carbon fuel by 2040, including Amazon, IKEA, Michelin, Unilever and Patagonia. It comes as 19 countries have signed the Clydebank Declaration to support the establishment of zero-emission shipping routes.



sustainable  
aviation fuel

**10%**

More than **80 aviation industry businesses** and large corporate customers pledge to increase sustainable aviation fuel to **10% of jet fuel use by 2030**



Front row from left: Jennifer Holmgren, Lanzatech CEO, with Christoph Beutler, Climeworks Head of Climate Policy, Warren East, Rolls Royce CEO, Scott Kriby, United Airlines CEO. Online: Melanie Kreis, DPDHL CFO, Patrick Healy, Cathay Pacific Chairman, Christopher Raymond, Boeing CSO.

# GEO THERMAL:

## *The best kept secret of renewable energy*

*By: Andy Blair, President of the International Geothermal Association and co-founder of Upflow*

Geothermal energy is energy from the earth – a constant powerful, reliable local source of energy that is not reliant on weather and doesn't demand a large environmental footprint. We have been using it in New Zealand for over 60 years to generate electricity. Currently geothermal contributes around 20% to our electricity generation mix. It also provides heat to produce export goods. We are highly regarded world leaders in the development and operation of geothermal projects globally.

However, the benefits that geothermal resources provide are not widely known; their hidden potential could be a game changer for New Zealand. Geothermal is a relatively niche industry requiring specialised skills. The potential benefits associated with its use and how it can help to alleviate social, economic and environmental problems have only seen selective uptake within our country.

Geothermal resources can provide solutions to some of the world's most pressing problems:

- **Access to water:** through tapping geothermal waters and supporting desalination technologies
- **Food security:** by providing water, heat and light to increase the productivity of high-density installations such as glasshouses and aquatic farms
- **Access to strategic minerals:** by bringing minerals from rocks

deep underground to the surface, including important minerals such as lithium, in a less invasive way than traditional mining

- **Decarbonisation of economies:** by embedding geothermal energy in products and services and allowing businesses to reduce their emissions, for example, around a 46% reduction in CO<sub>2</sub> emissions at Asaleo Care's tissue production operation in Kawerau after swapping from a gas boiler to geothermal energy in 2010

- **Economic development opportunities:** offering high employment (around 100 full-time equivalents per project) and significant economic benefits, for example, Oji's recent geothermal conversion at its pulp and paper mill at Kawerau providing \$4 million in annual cost savings, as well as offering a competitive advantage for energy intensive businesses and branding advantages through ethical operation
- **Empowering local communities:** providing meaningful employment in rural locations, as well as driving significant investment in local communities and infrastructure, with many operations in small towns with relatively high Māori populations, for example, the Mokai geothermal field has a milk drying factory, geothermal power station and large glasshouse installation that provides employment for the local community.

It is also an abundant and reliable source of renewable electricity generation. The full value of geothermal development is only obtained when these additional benefits are unlocked.

Māori are the innovation leaders in geothermal direct use. The long-term nature (30+ years) of geothermal projects and the recognition of the environmental, social and cultural benefits, as well as strong underpinning economics, strongly align with Māori principles. Simple binary thinking that "success equals making money" is not adequate to assess performance; projects need to offer more than simple commercial benefits.

Geothermal is one of the many blessings bestowed on New Zealand. Shifting to more sources such as geothermal will bring not only clean energy, but jobs and innovation where it is needed.



# SOLVING BIG PROBLEMS

## *How a Kiwi founded industrial chemicals company is turning carbon back into fuel*

To achieve net zero, we need a circular carbon economy based on carbon dioxide and synthetic biology done right.

This is what LanzaTech makes possible. LanzaTech is an industrial chemicals company that leverages innovations in biology, artificial intelligence and precision engineering to create the molecules that make everything from yoga pants to jet fuel – all without extracting fossil fuels.

The company was founded in New Zealand, and Stephen Tindall was one of its first investors. It is now headquartered in Chicago.

The beauty of LanzaTech technology is its capacity to turn municipal waste and plastic waste into CarbonSmart output for chemicals, fuels and textiles.

One of the key applications for LanzaTech technology is Sustainable Aviation Fuel (SAF), which has the potential to reduce carbon emissions by up to 85% compared with traditional jet fuel.

Air New Zealand has worked with Scion Research Institute on a detailed roadmap of its path to decarbonisation, including its transition to SAF using biomass and municipal waste and then

carbon capture technology its implementation.

SAF is seen as the most cost-effective and the fastest way to meaningfully reduce aviation emissions, while hydrogen and electric long-haul aviation require a longer horizon to develop.

At COP26, we learnt that the aircrafts of Deutsche Post DHL, the world's largest logistics company, generate some 40 million tonnes of emissions a year (about half of New Zealand's total emissions). Entirely eliminating those emissions by SAF, if it were available, would increase operating costs by up to 10%, based on SAFs current cost. "That's an order of magnitude which is manageable," said Melanie Kreis, the company's chief financial officer. "Prices will be manageable on a per-ticket basis," added Patrick Healy, chairman of Cathay Pacific. How industries and companies manage the green premium is a reflection of their maturity in their journey to decarbonisation.

Whether providing the technology to produce SAF or new textile materials, LanzaTech sits at the forefront of the sustainability technology revolution.

**Sustainable Aviation Fuel (SAF) has potential to reduce carbon emissions by**

**UP TO  
85% ↓**

Compared with traditional jet fuel

**40  
million tonnes**

**Aircrafts of Deutsche Post DHL yearly emissions**

*Travel industry takes crucial first step towards*

# Combating climate change

More than 300 travel companies, tourism boards and countries have signed the Glasgow Declaration on Climate Action in Tourism, the first step for a shared road map to cut carbon emissions. The declaration requires them to submit a concrete and transparent plan within 12 months.

The declaration has four main targets:

- measurement, requiring companies to disclose all travel – and tourism-related emissions
- decarbonisation, by setting targets aligned with climate science
- regeneration, to restore and protect natural ecosystems
- collaboration, to ensure best practices are shared and financing is available to follow through.

The process is being spearheaded by the United Nations World Tourism Organisation and the World Travel & Tourism Council.

The travel industry is a large contributor to global carbon emissions, with a footprint estimated between 8 and 11% of total greenhouse gases, according to the World Travel & Tourism Council, W.T.T.C.

Aviation alone represents around 17% of total travel carbon emissions.

Major challenges lie ahead, especially when it comes to setting a global standard for reporting emissions for such a varied sector, from tour operators to destinations, and airlines to cruise ships.

*“We are in the early stage of the sustainability revolution. This revolution is led by technology, artificial Intelligence, machine learning, chemistry and science with the same proficiency that the tech companies have led the digital revolution. This has the same speed and the same impact as the digital revolution.”*

Al Gore



Image: gettyimages.co.nz

# The Business Manifesto for Climate Recovery

The World Business Council for Sustainable Development's (WBCSD) Business Manifesto for Climate Recovery (Manifesto), launched at COP26, is the first time that the world's most sustainable, ambitious businesses have used their collective voice to outline what is required to accelerate the global climate recovery. The manifesto sets out twelve action priorities framed around reducing, removing and reporting emissions, and it highlights the public-private collaboration required to drive climate action. Some of the most innovative calls made by WBCSD are the exploration of how to move beyond net zero and consider how to reach a state of negative emissions to deliver climate recovery.

Essentially, the manifesto is asking for business action to be recognised in the global climate action agenda. Despite widespread use of the Greenhouse Gas Protocol for reporting emissions and the existence of voluntary emissions data pooling, there is no common mechanism to assess business progress against their targets, ambitions and aims that would align with the nationally determined contributions (NDCs). Business emissions are not included in NDCs calculations.

This means we currently lose the potential for ambitious corporate plans to drive further progress

*...the manifesto is asking for the development of a new global framework of Corporate determined contributions (CDCs) based on corporate ambition, targets and progress in reducing emissions.*

with other stakeholders. Business progress is not recognised by regulators and policy makers and is difficult to assess by consumers, leaving businesses exposed to accusations of greenwashing. Therefore, the manifesto is asking for the development of a new global framework of Corporate determined contributions (CDCs) based on corporate ambition, targets and progress in reducing emissions. It proposes that this framework is reviewed annually at the Climate Change Conference (COP) so that business action is transparent, open to challenge and recognised in the global fight for climate recovery.

*Scan the code to read the manifesto.*



# THE RACE TO ZERO BREAKTHROUGHS



Walmart

Image: gettyimages.co.nz

**Best Buy, H&M Group, Ingka Group (IKEA), Kingfisher plc and Walmart** have come together with the World Business Council for Sustainable Development to accelerate a movement in the retail industry to collectively drive climate action as part of the Race to Zero campaign.

The Race to Zero Breakthrough campaign aims to inspire more retailers worldwide to set science-based targets aimed at halving greenhouse gas emissions by 2030 and achieving net-zero carbon emissions by 2050 at the latest. The engagement gives retailers the opportunity to work with other retailers and trade association partners at the national, regional and global levels to accelerate a whole-economy transition.

Tracking greenhouse gas emissions within retailer supply chains is a key enabler for decarbonisation. These supply chain emissions, called Scope 3, represent the lion's share of retailers' emissions. Yet retailers attempting to tackle their Scope 3 emissions are held back by overwhelming challenges:

- No consistent methodology to calculate and allocate emissions at a product level
- Lack of accurate and granular product-specific data on emissions
- Complex value chains with only limited inter-organisational emissions data exchange.

***“Accurately understanding, reporting and acting on corporate Scope 3 emissions is one of our greatest challenges in moving rapidly to a net zero future.”***

*Claire O'Neill, Managing Director Climate & Energy, WBCSD, formerly Minister of State for Energy and Clean Growth (2017-2019)*

With value chains and industries so intrinsically linked – one company's Scope 3 emissions are another company's Scope 1 and 2 emissions – no company can achieve transparency in isolation. WBCSD is now attempting to lead a partnership to engage stakeholders and technology providers to combine their expertise and create synergies.

This work will run hand-in-hand with targeted industry deep-dives and aim at resolving methodological and technological challenges around Scope 3 emissions.

In addition, the partnership is setting up an Initiatives Hub, which will play a crucial role in ensuring alignment, consistency, integration and interoperability among leading industry-focused initiatives.



*Scan code to read more about the WBCSD Retail Campaign.*



*Scan code to read more about WBCSD Value Chain Carbon Transparency Pathfinder.*

Race to Zero is the United Nations-backed global campaign, rallying companies, cities, regions, financial and educational institutions to take immediate action to halve global emissions by 2030 and deliver a healthier, fairer carbon-neutral world in time.



*Scan code to read more.*

## My top picks of retailers at COP26

- 1. Making circularity the new growth model:** Ikea, Tetra Pak
- 2. Investing in nature-based solutions to become net zero:** Ikea, Nestlé, PepsiCo, Natura
- 3. Linking climate strategy and product sustainability:** Patagonia, Nestlé
- 4. Building new products and environmental labelling:** Pepsi Co, Unilever, L'Oréal
- 5. De-risking suppliers' transition by offering long-term contracts:** Bayers, Nestlé, PepsiCo, Walmart
- 6. Adopting robust supply chain accounting and transparent emissions reporting:** WBCSD with Walmart, Unilever and Ikea
- 7. Partnering with non-profits to set up new sustainability standards:** P&G, Mars & WWF, Ellen McArthur Foundation.

## Empowering consumers:

*About Unilever and product carbon labelling*

### Why is carbon transparency so important and what is the role of consumers?

- Unilever serves 2.5 billion consumers globally each year
- Everyone is supposed to achieve net zero by 2050, so everyone needs to know their footprint and where its impact is
- 90% of Unilever's carbon footprint is in Scope 3, meaning its in the suppliers manufacturing the products they sell to their customers
- Unilever wants to communicate the carbon footprint of every product it sells. This may be done via a direct carbon footprint label. In other cases, Unilever may use digital technologies to connect consumers with the product footprint and other data that helps them understand the positive impact they can have through the choices they make
- Unilever is partnering with other businesses and organisations to standardise data collection, sharing and communication, such as the WBCSD Value Chain Carbon Transparency Pathfinder, which launched in March this year
- Of Unilever's 56,000 suppliers, 300 of them make up most emissions. Within this group, Unilever has detected a range of climate capabilities. Some have set targets that align with what science says is needed and are well on their way to achieving them. Many have targets that aren't ambitious enough, and others have not yet begun their journey at all.
- To support suppliers with the greatest potential for emissions reductions, Unilever simultaneously launched the Unilever Climate Programme, which will provide hands-on guidance and access to tools and resources. *"You need to move your brand and business where the market is moving in the future, not where it is today."*

Source: Marc Engel, Chief Supply Chain Officer, Unilever, COP26.

## About circularity

Circularity gives endless possibilities to create a thriving economy. It is the other side of the net zero coin. It is a potent driver for efficiency and decarbonisation across the value chain. It reduces upstream emissions by decreasing the need for virgin raw materials and downstream emissions by reducing the amount of post-consumer waste going to landfill.

Circularity is essentially an economic design principle. For retailers and CPG, circularity means biomaterials, chemistry, engineering, packaging, ingredients and recycling. It also means re-commerce, product as a service, and buy-back models, which are now getting traction in categories

as diverse as fashion, consumer electronics, furniture and mobility.

Circularity requires business to build fundamentally different capabilities. It requires to remap the entire value chain and often depends on broader national capabilities, providers, logistics and supply-chain expertise. At COP26, some of the most advanced technical experts in circular supply chain were on site to showcase the remapping of entire industries.

With the New Zealand government currently consulting on the creation of a new waste strategy and circular economy for 2030, this is a promising topic to watch and embrace.





# A search engine for the planet

*How breakthrough AI and space technologies are enabling radical transparency.*

Previously, scientists were forced to rely largely on estimates of greenhouse gas emissions that were based on formulas that took into account the burning of fossil fuel and industrial and agricultural activities.

Now satellites are allowing scientists to measure greenhouse gases in real time. This new capacity is helping to pinpoint the sources of emissions and to hold countries and corporations to account for their climate promises. For example, satellites can now look at a coal plant and the coal that is flowing through the plant to determine if it is operating and measure the exact quantity emissions it is likely to generate.

Operating the largest fleet of earth observation satellites in history, Planet is the market leader and provider of such global, near-daily satellite imagery and geo-spatial solutions. Founded in 2010 by three

NASA scientists, Planet's fleet of satellites captures and compiles data from over 3 million images per day.

Planet provides earth data, insights, and software solutions to over 700 customers, including the world's leading agriculture, forestry, intelligence, education and finance companies and government agencies. It is based in San Francisco and backed by Google, Black Rock Investments and the World Bank.

The data Planet produces is an essential ingredient in independent, trusted climate indicators that can make visible what's happened in the past, help guide informed action in the present and improve transparency and reporting to guide decisions in the future.

*Scan the code to read more about Planet.*



## About CarbonClick

*How a Kiwi start-up is becoming a global player in the retail carbon market*

*By Dave Rousse, CEO, CarbonClick*

For most Kiwis, sustainability and innovation are part of our DNA. We've grown up immersed in nature and nuclear freedom, with an innovative circular economy mindset. Our small size and geographical isolation challenge us to think differently to solve problems. In my childhood home in the bush, many of us didn't even have rubbish collection, so we avoided single use plastics and composted waste.

Today we're faced with the greatest challenge of our lifetimes – climate change. CarbonClick is a big part of the solution. It is based on the vision that in five years, you'll see carbon impact and a little green "offset" button on the majority of online checkouts, allowing you to understand and offset the impact and help restore our planet with every click.

CarbonClick enables businesses to boost sustainability efforts in many ways, including engaging their customers via a single click of our "little green button".

We carefully audit and select certified carbon offset projects that share social and biodiversity values and that also align with other charity goals, such as WWF and Childfund, and most importantly, we provide a full "track and trace" audit trail so you can see that your offset contribution has instantly been received by these projects.

This provides a sense of relief and provides a feel-good factor for consumers, who have traditionally donated this money into a black hole and hoped it would reach the projects as claimed.

This empowerment for consumers creates further loyalty alignment back to the brand, making the customer more likely to return. Consumers are aware of their footprint but often feel lost or helpless when it comes to taking action on it.

This simple option, is selected by 11% of all consumers, demonstrating a desire for simple ways to help. Interestingly for businesses, the repurchase rates of the 11% of clients who offset (measured across our client base of over 800 businesses), increases significantly.

Pre CarbonClick, the average repurchase rate across e-commerce was 20%, but post CarbonClick, the average for the 11% who chose to offset is 34%, representing a net increase in repurchase rates of 3.7%.

These are significant and tangible results, rewarding businesses for doing the right thing. CarbonClick has been in revenue for 18 months, and already we've had over 100,000 individuals and businesses offsetting 28,000 tons of CO<sub>2</sub>, which equates to about 1.3 million trees being supported directly as a result.

As this trend continues, we will soon be contributing more towards reversing climate change than some entire nations are – demonstrating the power consumers and businesses actually have. *Scan the code to see more about CarbonClick.*



# So, what happens NEXT?

## *The roadmap for turning ambition into action*

*By Kate Wilson Butler, New Zealand Sustainable Business Council.*

With COP26 over, attention now turns to what comes next.

There have been a range of reactions to the Glasgow Climate Pact, from the glass being half-full to it being half-empty. But the outcomes from COP26 – particularly the completion of the Paris Rulebook, a signal of the end of coal (even if watered down), and agreement to report on progress annually represent real, if incremental, progress.

However you view the outcome, COP26 undeniably showed one thing: the ambition loop works. Without the efforts of ‘multistakeholderism’, we would still be on track to nearly 3 degrees of warming, as we were prior to the conference. Now there is a window of hope (albeit tiny and fast closing) that we can, if all countries fulfil their

pledges, keep warming below 2 degrees.

What every country – including New Zealand – needs now is a credible plan to turn our climate ambition into concrete action.

New Zealand has a lot of catching up to do if we are to bend the emissions curve in the short time we have left. Urgent and bold action is required to meet our climate targets. New Zealand’s first Emissions Reduction Plan (ERP) is a critical opportunity to get the country on track to meet our emissions budgets, as well as our international targets.

There is no denying that delivering our low carbon transition is an enormous challenge. In order to rise to the moment, as a country, we need to do four key things:



**Get on with it**

Climate Leaders Coalition (CLC) and Sustainable Business Council (SBC) members are ready to work alongside government to meet the challenge. With the first emissions budget period almost upon us, it is critical we prioritise immediate action using available technologies to reduce emissions in our highest-emitting sectors.

That includes taking decisive action to tackle transport, agriculture and energy (particularly industrial process heat). The CLC/SBC response to the ERP discussion document sets out detailed proposals for each of these areas. These sectoral efforts must be part of a cohesive, systems-level approach to the transition that has equity and people at its heart.

We also need to be investing now to bring to market new technologies that will enable mitigation at scale in future budget periods. Finally, New Zealand must establish a thriving bio-economy and circular economy that displaces fossil-fuel-derived production materials and energy sources.

**Reinvent the business-government engagement model**

A genuine partnership between government and business will be critical to ensuring the success of our transition to a low emissions and climate resilient future. SBC and CLC have shown that collaboration works: our members are working together to develop and deliver solutions to drive down emissions in a range of areas, including the above sectors.

This kind of collective effort now must extend to innovative private and public partnerships too. Government and business need to reinvent the engagement model on climate to allow for the co-development of solutions.

**Secure bipartisan support for an enduring response**

The task is urgent, but the response must be enduring. Emissions budgets agreed across parliament will give business a clear signal that the future is zero carbon. Policies must be designed with input from across the political spectrum to give businesses the certainty they need to make investment decisions that are consistent with a zero carbon future.

**Resource the climate response as the crisis it is**

Business as usual is no longer an option. We have moved into a new era where every company must mainstream sustainability and climate action through its organisational DNA. Climate action is business as usual, and SBC and CLC members are acting accordingly: CLC businesses have collectively committed to invest \$9.5 billion over the next five years to reduce their emissions.

Just as the private sector is recalibrating itself to rise to this moment, so too does government need to organise and respond to climate change as the crisis it is. This is an all-of-government, all-of-economy effort that must be resourced effectively to meet the magnitude of the collective challenge ahead.

However you view it, COP26 represented an inflection point in the global climate change response. We will look back on this moment as the time we harnessed that energy to deliver real and enduring change - or not.

It's essential that the business community get on board and ride this wave of momentum to realise its potential to shift the dial on decarbonisation in New Zealand. That means working within businesses to take real climate action now. And it means using our collective voice to encourage policies that will accelerate our transition to a zero carbon future, where business, people and nature thrive together.

# The story we'd

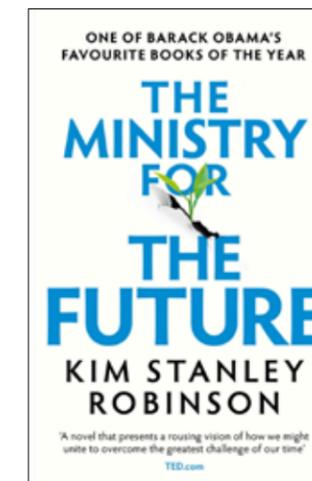
## like to read

Extract from — *The Ministry for the Future: A Novel by Kim Stanley Robinson*

“Real progress was being made on many fronts. The main point, or maybe what the financial sector would have called the index that stood for all the other factors involved—which was to say, the amount of carbon dioxide in the atmosphere—it really had dropped in the previous four years, and sharply too. This was confirmed from multiple sources. And it had been levelling in the previous ten years before that, shifting up and down with the seasons as always, but staying more level than at any time since measurements had begun in the 1960s.

That in itself had been celebrated, but it was now cycling downward between 450 and 445, they said, cycling seasonally as it did, with the current trend moving downward by about five parts per million per year, but that rate too was increasing, it looked like. This meant not only that they had stopped burning carbon to a large extent - not entirely, because that would not be possible in their lifetimes - but they were also drawing carbon down from the air in significant and measurable quantities, by way of all the carbon drawdown efforts in combination.

There were discussions as to how much the oceans were still serving as a sink for carbon burned into the air, but now, in the Great Internet of Things, the Quantified World, the World as Data, all these aspects of the problem were being measured,



and the ocean's uptake or drawdown was measured to within a fairly small margin of error; and the conclusion from the scientists involved was that since the ocean had already been quite saturated by the carbon it had absorbed in the previous three centuries, the drop they were seeing was only slightly explained by continuing ocean uptake.

The majority was being drawn down by reforestation, biochar, agroforestry, kelp bed and other seaweed growth, regenerative agriculture, reduced and improved ranching, direct CO<sub>2</sub> capture from the air, and so on.

All these efforts were paid for, or rather rewarded beyond the expense of doing them, in carbon coins, and these coins were trading strongly with all the other currencies in currency exchanges.”

*Scan the code to read more.*



# YOUR PLANET NEEDS YOU



Copyright: The Warehouse Group Limited

[thewarehousegroup.co.nz](http://thewarehousegroup.co.nz)  
[climateleaderscoalition.org](http://climateleaderscoalition.org)



With contribution from:

