

CARBON JARGON

NET ZERO TERMINOLOGY MADE EASY



A broad range of terminology is used to describe corporate goals and commitments when it comes to climate change. Some of these terms tend to be used interchangeably such as ‘carbon neutral’, ‘net zero’ and ‘climate neutral’.

We created this guide to shed light on the net zero terminology to assist organisations in setting meaningful climate targets.

If there is anything missing, can you please let us know, and we’ll add it.

YOUR ENERGY AND CARBON FOOTPRINT

ENERGY FOOTPRINT

Your energy footprint relates to your business’ energy consumption. For most organisations, ‘energy’ encompasses not only electricity but

also stationary energy and transport fuels. Examples of stationary fuels are natural gas, diesel for generators, and LPG for forklifts. Examples of transport fuels include diesel, petrol, and LPG that power your fleet.

CARBON FOOTPRINT

A carbon footprint is the sum of emissions that are relevant for your organisation, a big part of which is your energy consumption. You can develop a narrow carbon footprint of emissions that happen at your place of business (scope 1) and the emissions associated with electricity consumption (scope 2). Alternatively, you can develop a wide carbon footprint which also includes emissions in your value chain (scope 3).

A carbon footprint is usually broader than your energy footprint. You can see in Figure 1 that an energy footprint is a subset of a carbon footprint. From a carbon accounting perspective, your energy footprint relates to your scope 2 emissions and some of your scope 1 emissions.

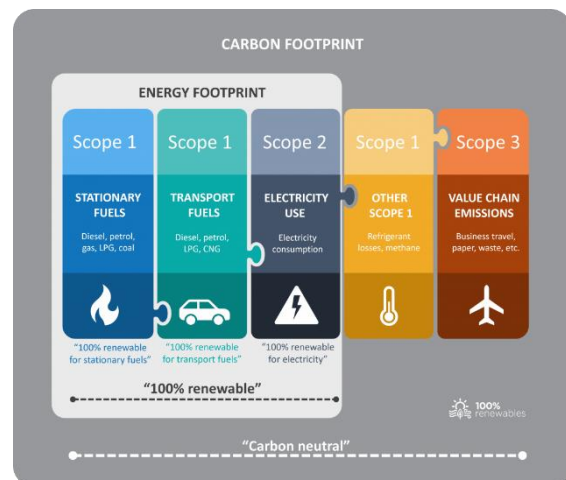


Figure 1: The difference between your energy footprint and carbon footprint and claims for 100% renewable energy and carbon neutrality



For more details, please read our blog post – [Are ‘carbon neutral’ and ‘100% renewable’ the same?](#)

EMISSIONS

Releasing greenhouse gases into the air that are produced by burning fossil fuels, industrial agriculture, cutting trees, melting permafrost, and so on. These gases cause heat to be trapped in the atmosphere, slowly increasing the Earth's temperature over time.

EMISSION SCOPES

SCOPE 1

Scope 1 emissions are emissions directly generated at your operations, such as burning natural gas or driving company cars, or refrigerant gases in your air conditioning equipment.

SCOPE 2

Scope 2 emissions are caused indirectly by consuming electricity. These emissions are generated outside your organisation (think coal-fired power station), but you are indirectly responsible for them.

SCOPE 3

Scope 3 emissions originate in your value chain. They are indirect emissions and happen upstream and downstream of your business. Examples are waste, air travel, the consumption of goods and services, contractor emissions, or leased assets.

According to the GHG Protocol, specifically the [Corporate Value Chain Accounting and Reporting Standard](#), there are 15 categories of scope 3 emissions.

SUPPLY CHAIN EMISSIONS

Most people use this term synonymously with scope 3 emissions, but supply chain emissions are actually a subset of value chain emissions.

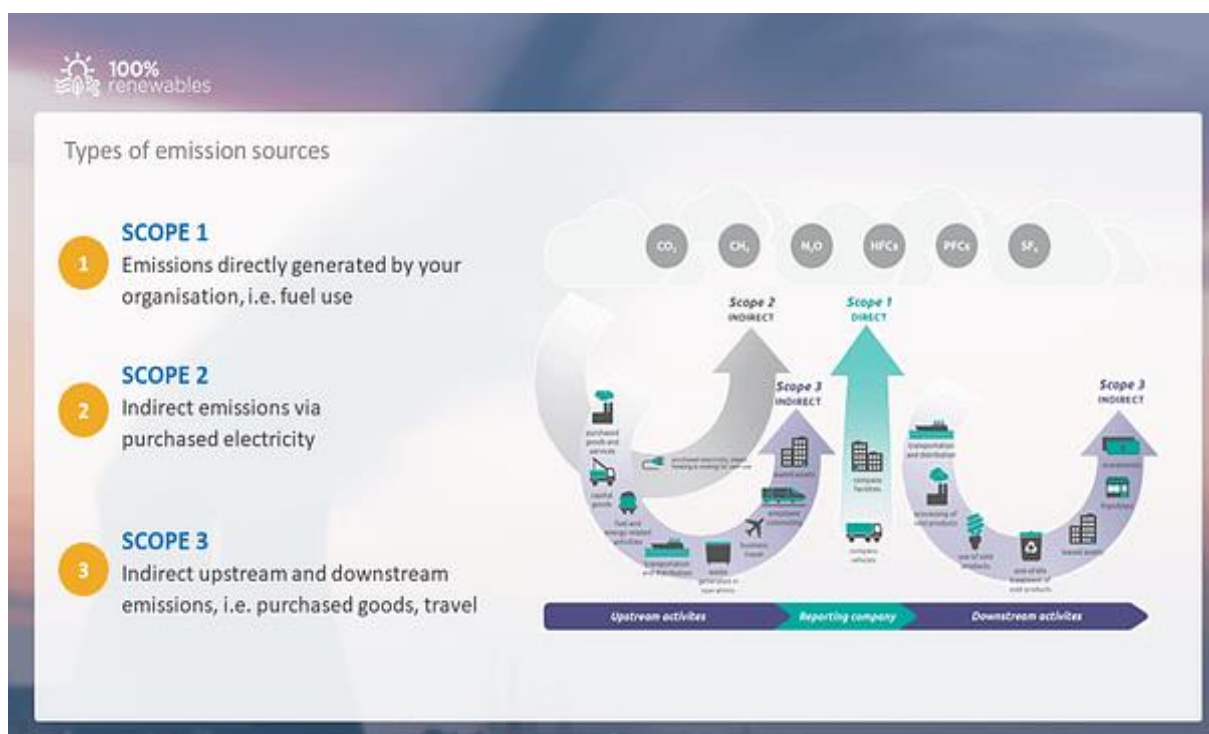


FIGURE 3: EMISSION SOURCES – CORPORATE VALUE CHAIN ACCOUNTING AND REPORTING STANDARD

CATEGORIES OF SCOPE 3 EMISSIONS

According to the [Corporate Value Chain Accounting and Reporting Standard](#), there are 15 categories of value chain, or scope 3 emissions.

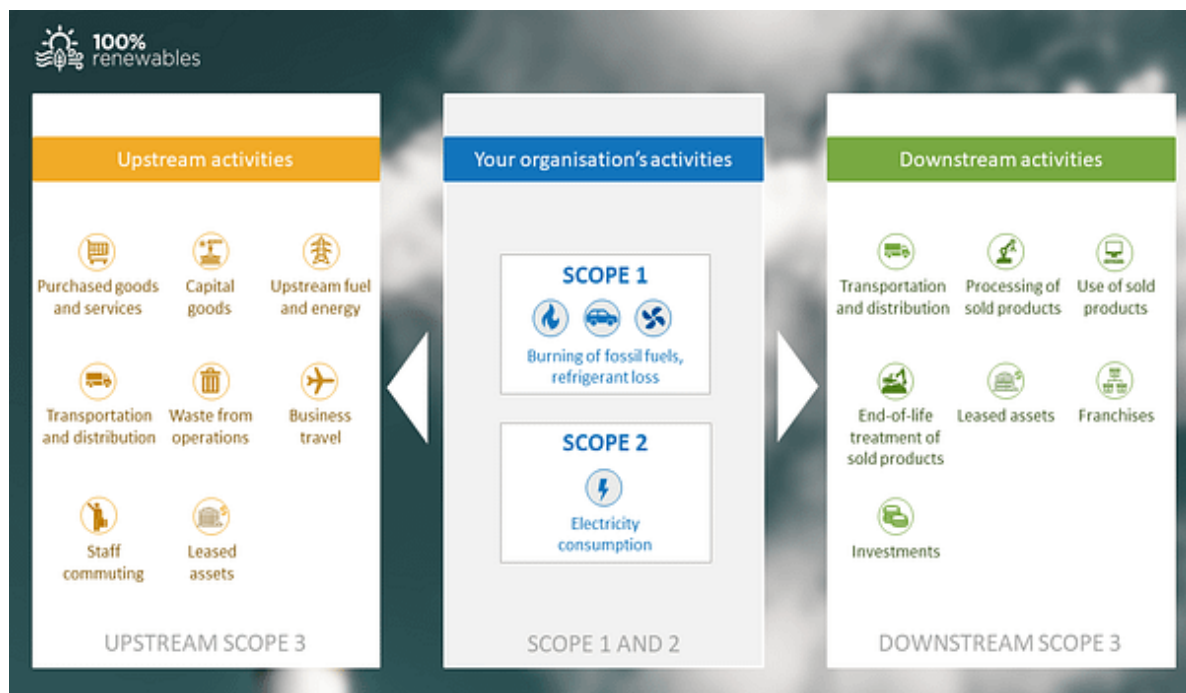


FIGURE 4: EMISSION SOURCES – CATEGORIES OF SCOPE 3/SUPPLY CHAIN EMISSIONS

UPSTREAM VALUE CHAIN EMISSIONS

1. Purchased goods and services
2. Capital goods
3. Fuel- and energy-related activities (not included in scope 1 or scope 2)
4. Upstream transportation and distribution
5. Waste generated in your operations
6. Business travel
7. Employee commuting
8. Upstream leased assets

DOWNSTREAM VALUE CHAIN EMISSIONS

9. Downstream transportation and distribution
10. Processing of sold products
11. Use of sold products
12. End-of-life treatment of sold products
13. Downstream leased assets
14. Franchises
15. Investments



For more details, please read our blog post – [FAQs for becoming certified under Climate Active – Part 2 \[with video\]](#)

OPERATIONAL EMISSIONS

Operational emissions are released when you are using a product or a service. If you use a natural gas boiler to heat water, burning the gas causes the release of greenhouse gas emissions.

If you drive a car with an internal combustion engine, greenhouse gases are similarly released. If you operate a building, you consume electricity, which in most cases causes the release of emissions at the power plants that produce the electricity.

EMBODIED EMISSIONS

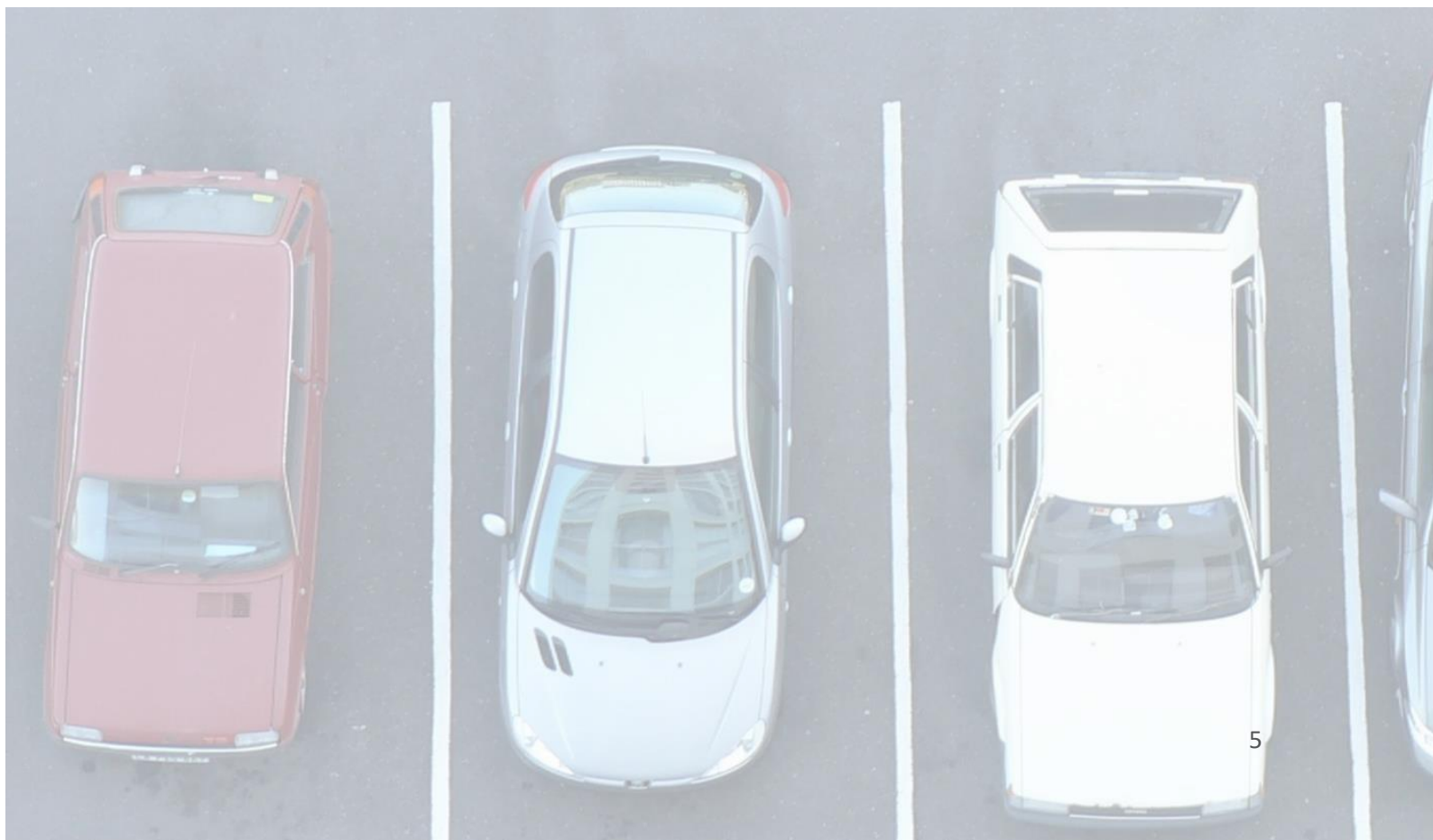
Embodied emissions are all greenhouse gas emissions that are released as part of making a product or service ready for consumption or use.

Imagine buying a car. Let's take two key components of a vehicle, metals and plastics. The raw minerals have to be mined and processed to form the metal and transported to the factory where the car is produced. Similarly, plastic is made from oil, which has to be extracted, refined, processed into plastic and transported to the factory for assembly.

The car is made from these and other components and shipped to distribution centres, from where it is transported to the point of sale. All along the way, greenhouse gas emissions are being produced, from extracting materials, manufacturing, assembly, transport and retail. This means that products and services you buy come with an associated carbon footprint. The more greenhouse gases that are released to produce the good or service, and get it to you, the more embodied emissions it contains.



For more details, please read our blog post – [Frequently Asked Questions about embodied emissions \[with video\]](#)



CLIMATE TERMINOLOGY AND TARGETS

WEATHER VERSUS CLIMATE

Weather refers to atmospheric conditions in the short term, including changes in temperature, humidity, precipitation, cloudiness, wind, and visibility. Climate is the average of weather patterns over a longer period of time, usually 30 or more years.

GLOBAL WARMING VERSUS CLIMATE CHANGE

Global warming is an increase in the Earth's average surface temperature from human-made greenhouse gas emissions.

Climate change is the long-term changes in the Earth's climate and includes more than just the average surface temperature.

MITIGATION

Any action to reduce or prevent greenhouse gas emissions, such as using renewable energy like wind and solar, developing and deploying new technologies, or making older equipment more energy efficient. Includes planting trees to act as a "sink" that absorbs CO₂.

ADAPTATION

Any action to reduce vulnerability to the actual or expected effects of climate change. This means changing human and natural systems to adapt to climate patterns. For example, planting drought-resistant seeds in the face of increasing drought conditions.

RESILIENCE

The capacity for a community, environment, or other system to anticipate, manage, recover

and transform from a shock. In this context, the impacts of climate change. An example includes early warning systems.

CARBON SINK

Areas that absorb more carbon from the atmosphere than they release. The ocean, permafrost, and forests are great examples. But carbon sinks aren't permanent, and protecting carbon sinks is a key strategy for tackling climate change and stabilising the climate.

TIPPING POINT

Refers to a point of "no return" after which certain changes caused by climate change become irreversible. Scientists have identified several tipping points, such as ice sheet collapse, large-scale coral reef die-off, changes in Atlantic Ocean circulation, etc.

PARIS AGREEMENT

A legally binding international treaty aiming to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels. It was adopted by 196 countries at COP21 in Paris, in 2015 and entered into force on 4 Nov 2016.

INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC)

The U.N. body designated to provide policymakers with scientific assessments on climate change, its implications, and future risks, as well as to put forward adaptation and mitigation options.

CARBON BUDGETS

The main driver of long-term warming is the total cumulative emissions of greenhouse gases over time, with a direct link between total emissions to date and observed warming.

A carbon budget refers to the maximum amount of carbon that we can release in future to remain within an agreed temperature rise.

The IPCC's report '[Climate Change 2021: the Physical Science Basis](#)' has issued the strongest call yet for urgent and deep cuts to be made to global greenhouse gas emissions.

According to this report, we have a 50/50 chance of keeping warming to no more than 1.5C if we stay within a global carbon budget of 500 billion tonnes.

At pre-pandemic global emission rates, this gives us under 10 years before we exceed 1.5C. Another way of looking at this is that we have already emitted 84% of all the emissions we can emit and stay within 1.5C.

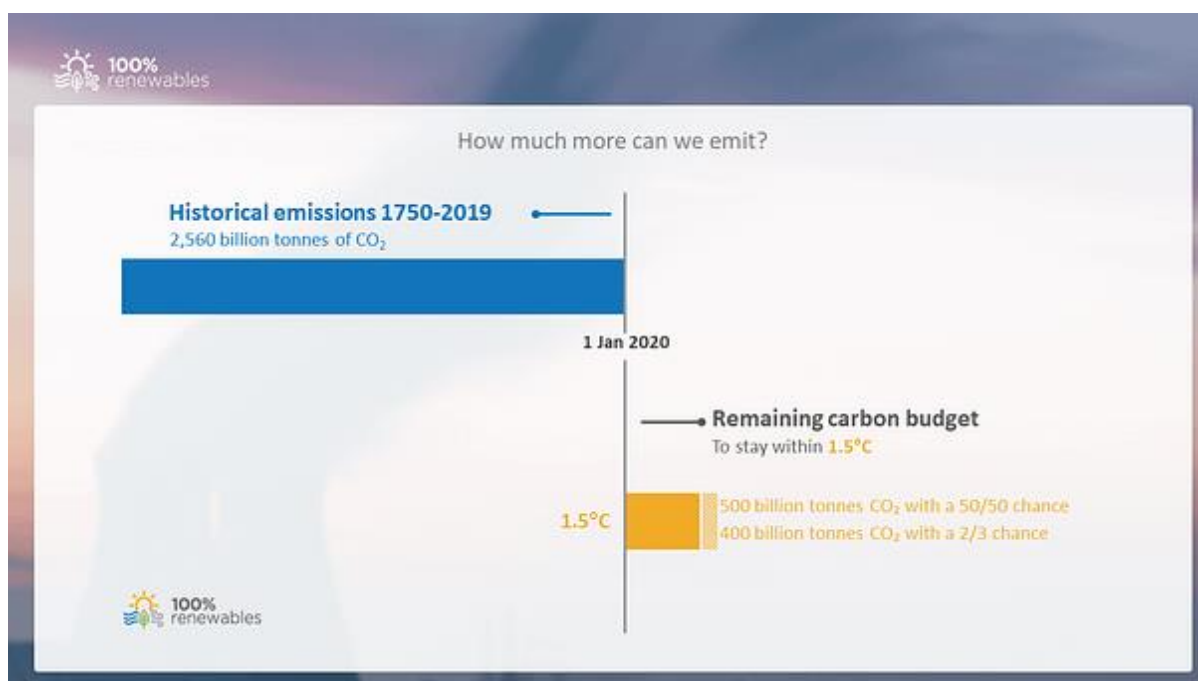


FIGURE 5: REMAINING CARBON BUDGET. FIGURE ADAPTED FROM FAQs FROM IPCC CLIMATE CHANGE 2021 REPORT



For more details, please go to our blog post – [What the latest IPCC report means for your net-zero target \[with video\]](#)

NET ZERO EMISSIONS

Net zero emissions are achieved when your organisation's emissions of all greenhouse gases (CO₂-e) are balanced by greenhouse gas removals, typically over one year.

ZERO EMISSIONS

Zero emissions, or absolute zero, refers to zero greenhouse gas emissions. In contrast with net zero emissions, absolute zero is achieved without the use of offsetting to balance emissions.

CARBON NEUTRALITY

[IPCC defines carbon neutrality](#), or net-zero carbon dioxide (CO₂) emissions, to be achieved when your CO₂ emissions are balanced by CO₂ removal, typically over one year. Commonly though, carbon neutrality refers to bringing your net zero target forward to the present, by balancing your carbon footprint with the purchase of carbon offsets. In this sense,

carbon neutrality can be seen as an interim target on your path to net zero.

CLIMATE NEUTRALITY

Climate neutrality is achieved when organisational activities result in no net effect on the climate system. In climate-neutral claims, regional or local bio-geophysical effects have to be accounted for as well, such as radiative forcing (e.g., from aircraft condensation trails).

CLIMATE POSITIVE/CARBON NEGATIVE (OR POSITIVE)

Climate positive is achieved when you remove more anthropogenic CO₂ emissions from the atmosphere than you emit.

Climate positive is often used interchangeably with the terms carbon negative, or even carbon positive.



For more details, please go to our blog post – [What is the meaning of carbon-neutral, net-zero and climate-neutral? \[with video\]](#)



100% RENEWABLE ENERGY

You are 100% renewable when the amount of renewable energy produced is equal to or more than what is consumed.

In most cases, people associate only electricity with '100% renewable'. However, 'energy' can encompass stationary and transport fuels as well.

So, to be truly 100% renewable, you would have to include these fuels as well. While it is relatively straightforward to reach 100% renewable electricity, it is more difficult to achieve 100% renewable energy for stationary and transport fuels.

100% RENEWABLE ELECTRICITY

100% renewable electricity refers to electricity that is produced entirely from renewable sources, such as solar and wind.

GRID DECARBONISATION

Grid decarbonisation is also referred to as 'greening of the grid' and means that fossil fuel-powered plants are replaced with renewable power plants, which reduces emissions from electricity. However, grid decarbonisation is only one of the levers you have available to reduce your emissions. You should also focus on deep decarbonisation of your own operations.



For more details, please read our guide on [How to Achieve 100% Renewable Electricity](#)



EMISSIONS REDUCTION ROADMAP OR PATHWAY

An emissions reduction roadmap or pathway defines the magnitude and timing of emissions reductions, typically to reach a target, such as zero emissions by a certain year.

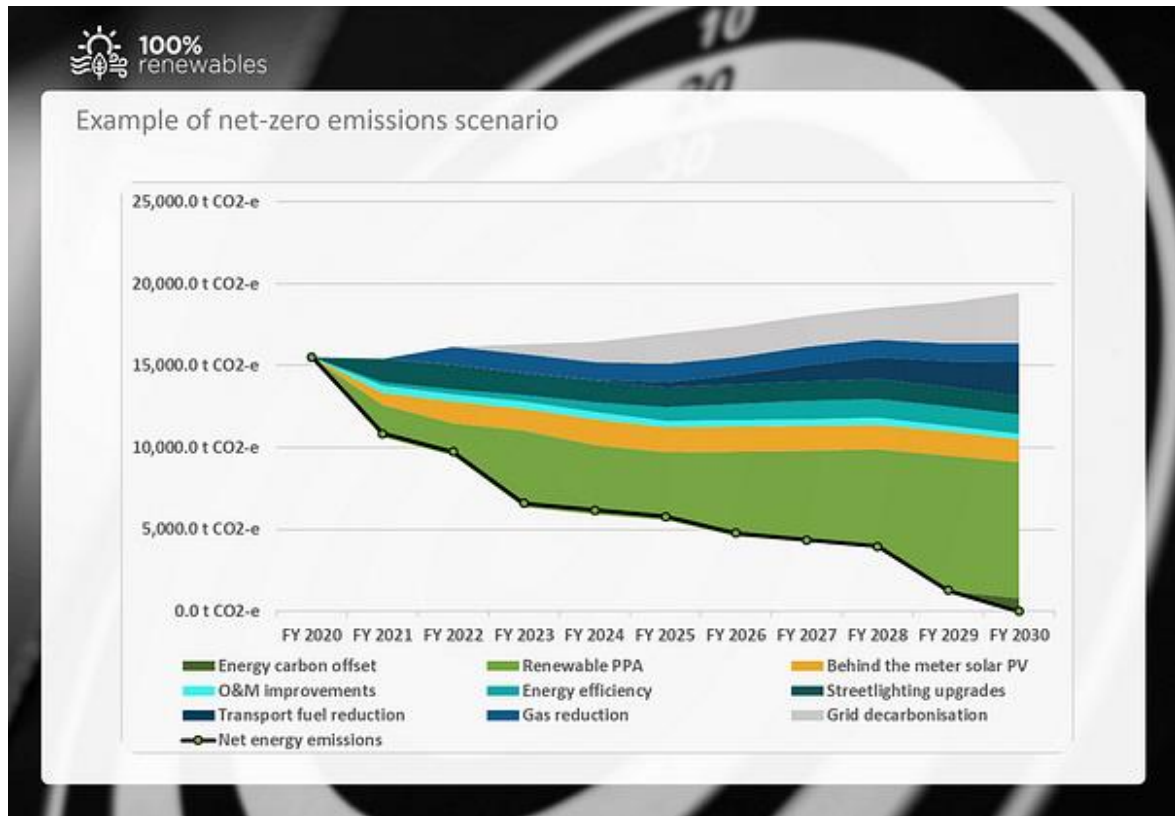


FIGURE 6: EXAMPLE OF NET-ZERO EMISSIONS SCENARIO



For more details, please read:

- [Guide on How to Achieve Net Zero Emissions](#)
- [What is the meaning of carbon-neutral, net-zero and climate-neutral? \[with video\]](#)
- [Exploring carbon neutral and NEXTneutral with Craig Scroggie, CEO NEXTDC \[with video\]](#)

CARBON OFFSETS

Offsets are a useful way to reach a carbon-neutral target right away. One offset equals one tonne of greenhouse gas emissions that is avoided or reduced elsewhere.

You need to make sure that you purchase highly credible carbon offsets that meet rigorous selection criteria.

Carbon offsets can be generated from projects that remove carbon from the atmosphere, such as planting trees, which need CO₂ to grow.

Offsets can also be generated from activities that avoid emissions (compared to a hypothetical business-as-usual scenario), such as wind farm or energy efficiency projects.

CARBON MARKETS

These are trading systems in which carbon credits are sold and bought.



FIGURE 7: EXAMPLES OF CARBON OFFSET PROJECTS



BECOMING CARBON NEUTRAL UNDER THE CLIMATE ACTIVE PROGRAM

Climate Active is a highly trusted certification program for achieving carbon neutrality, which is administered by the Commonwealth Department of Industry, Science, Energy and Resources.

It was first launched in 2010 and was originally known as the National Carbon Offset Standard (NCOS).

Initially, it was only possible to achieve carbon-neutral certification for organisations, products and services, but in 2017 the certification

options were expanded to events, buildings and precincts.

Organisations that achieve certification under this program are allowed to display the Climate Active trademark and logo, which showcases this achievement.

Going through a Climate Active certification process involves many steps, as shown below. We recommend [getting advice from experts](#) to help you navigate Climate Active compliance requirements.



FIGURE 8: STEPS TO BECOME CARBON NEUTRAL UNDER CLIMATE ACTIVE



For more details, please read our multi-part blog posts on Climate Active – [FAQs for becoming certified under Climate Active – Part 1 \[with video\]](#)

We have also created a [14-videos series](#) that explains the Climate Active process.

SCIENCE-BASED TARGETS

Science-based targets (SBT) are greenhouse gas emissions reduction targets that are consistent with the level of decarbonisation that is required to keep global temperature increase within 1.5 to 2°C compared to pre-industrial temperature levels.

SBTs are consistent with the long-term goal of reaching net zero emissions in the second half of this century as per the Paris Agreement. SBTs provide a trajectory for companies to reduce their greenhouse gas (GHG) emissions.

In late 2021, the [Science Based Targets initiative](#) released the first global science-based framework for companies to set net-zero

targets. The [Net-Zero Standard](#) defines ‘near-term’ and ‘long-term’ science-based targets.

NEAR-TERM TARGETS

Most companies must achieve emissions reduction of at least 4.2% p.a. for near-term targets.

LONG-TERM TARGETS

To be aligned with science, long-term targets mean reaching 90% emissions reduction by 2050 at the latest. To achieve net zero, you can offset the remaining 10% of your emissions via greenhouse gas removals.



For more details, please go to our blog post – [Science-based targets in a nutshell \[with video\]](#)

Is there something missing?

Please tell us your carbon jargon that we’ve missed, so we can add it to this list.

Where can you get help?

100% Renewables are experts in helping organisations develop their carbon footprint and net-zero strategies. If you need help, please contact [Barbara](#) or [Patrick](#).

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