

Net Zero, Offsetting and Carbon Reporting

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House Rules



Be present in the room! Cameras on please, mics off unless talking



'Raise your hand' or use the chatbox for questions



Share your feedback at the end



Slides will be shared later

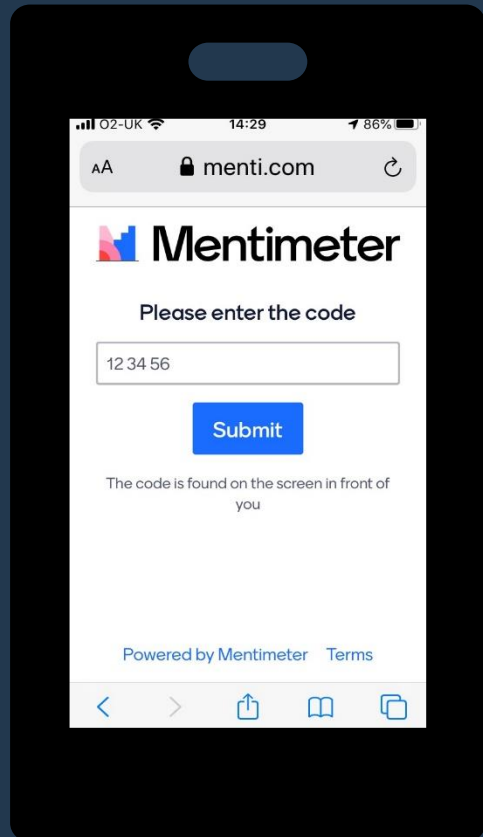
Workshop Overview

- ✓ **Recap on Carbon**
- ✓ **What is Net Zero: why** are we reducing carbon?
- ✓ **Carbon Reduction: What** actions can we use to reduce carbon?
- ✓ **Offsetting: What** do we do with residual carbon?
- ✓ **Science based targets: how** do we set targets?

But first, introductions!



Getting to know you!

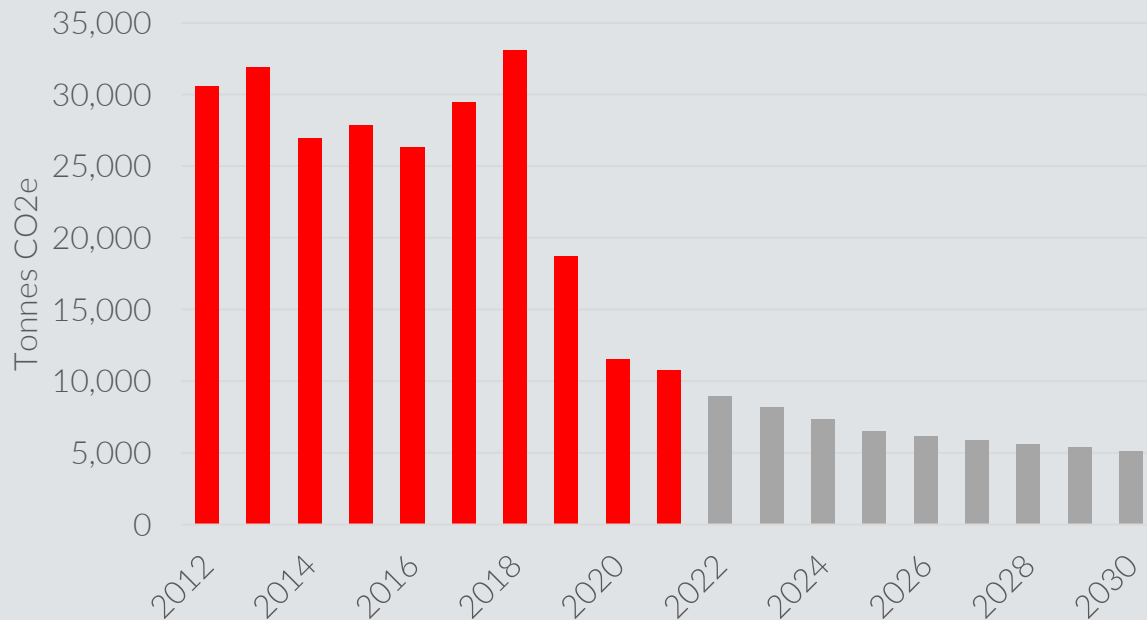


Open Mentimeter

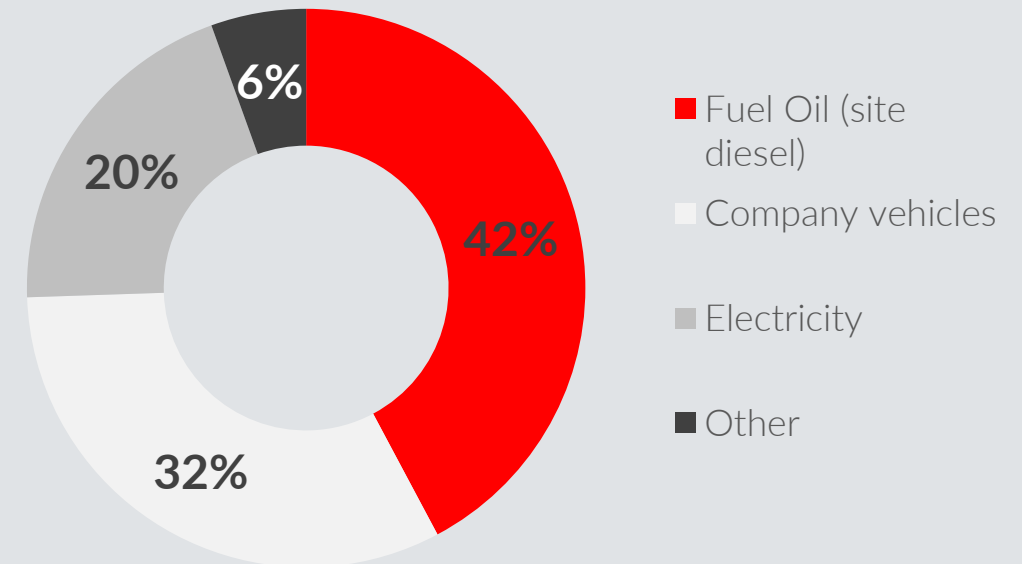
1. Go to www.menti.com in a new browser or tab on your phone or computer, *ideally Chrome or Firefox rather than Edge, or download the app.*
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Carbon within our own operations

Scope 1 and 2 carbon emissions
Actual and projected reduction trajectory

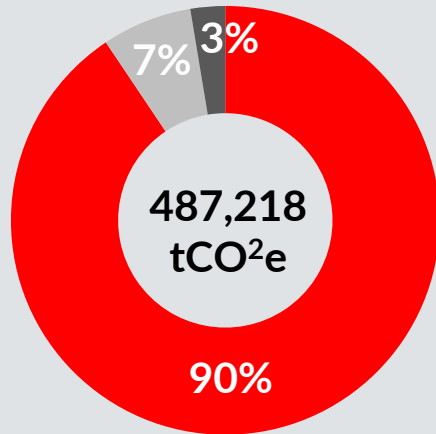


Scope 1 and 2 emissions - 2021



Carbon within our wider value chain

Scope 3 emissions 2021 – Estimated by the Carbon Trust



- Purchased goods and services (product)
- Purchased goods and services (non-product)
- Other

- **Purchased goods and services (product)** is everything we buy directly, and indirectly through subcontractors that relates to the asset we have built – e.g. steel, concrete, M&E, bricks etc.
- **Purchased goods and services (non-product)** is everything else we buy e.g. PPE, paper, IT services etc.
- **Other** includes:
 - Business Travel.
 - Waste.
 - Capital Goods.
 - Upstream Transportation.
 - Downstream Transportation.
 - Investments.

Carbon on our sites



GT owned data



GT & subcontractor owned data



What can you do?

Use less stuff

- Save carbon and save money

You can't improve what you don't measure

- Fuel
- Materials
- Deliveries
- Commuting

Share your experiences

- What's going on in your area of the industry
- What have you done that worked well and not so well
- What are you measuring and how are you measuring it

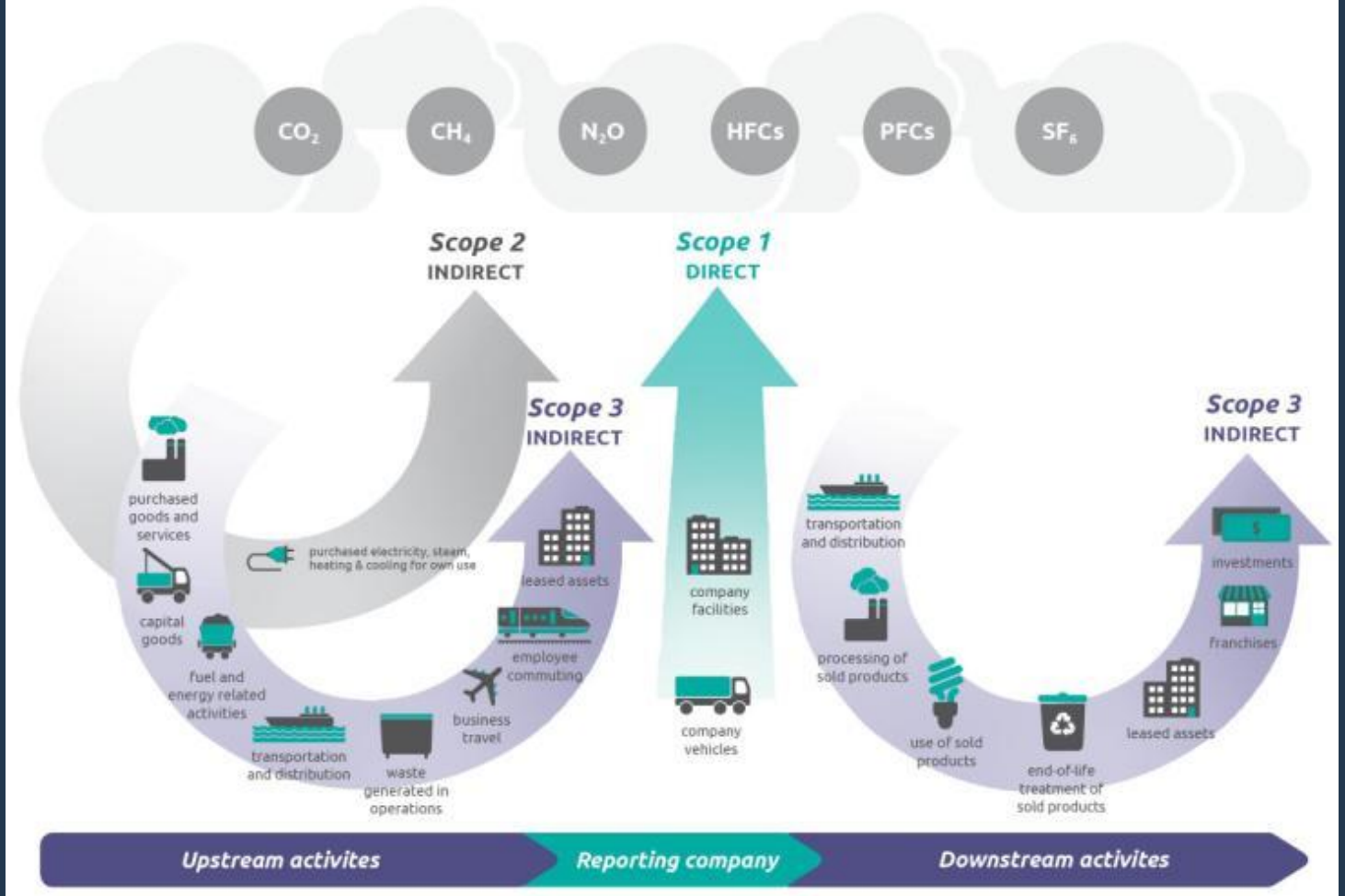


Recap on Scopes

Operational Boundaries – Scopes

- **Direct emissions** are emissions from sources that are owned or controlled by the reporting company
- **Indirect emissions** are emissions that are a consequence of the activities of the company but occur at sources owned or controlled by another company

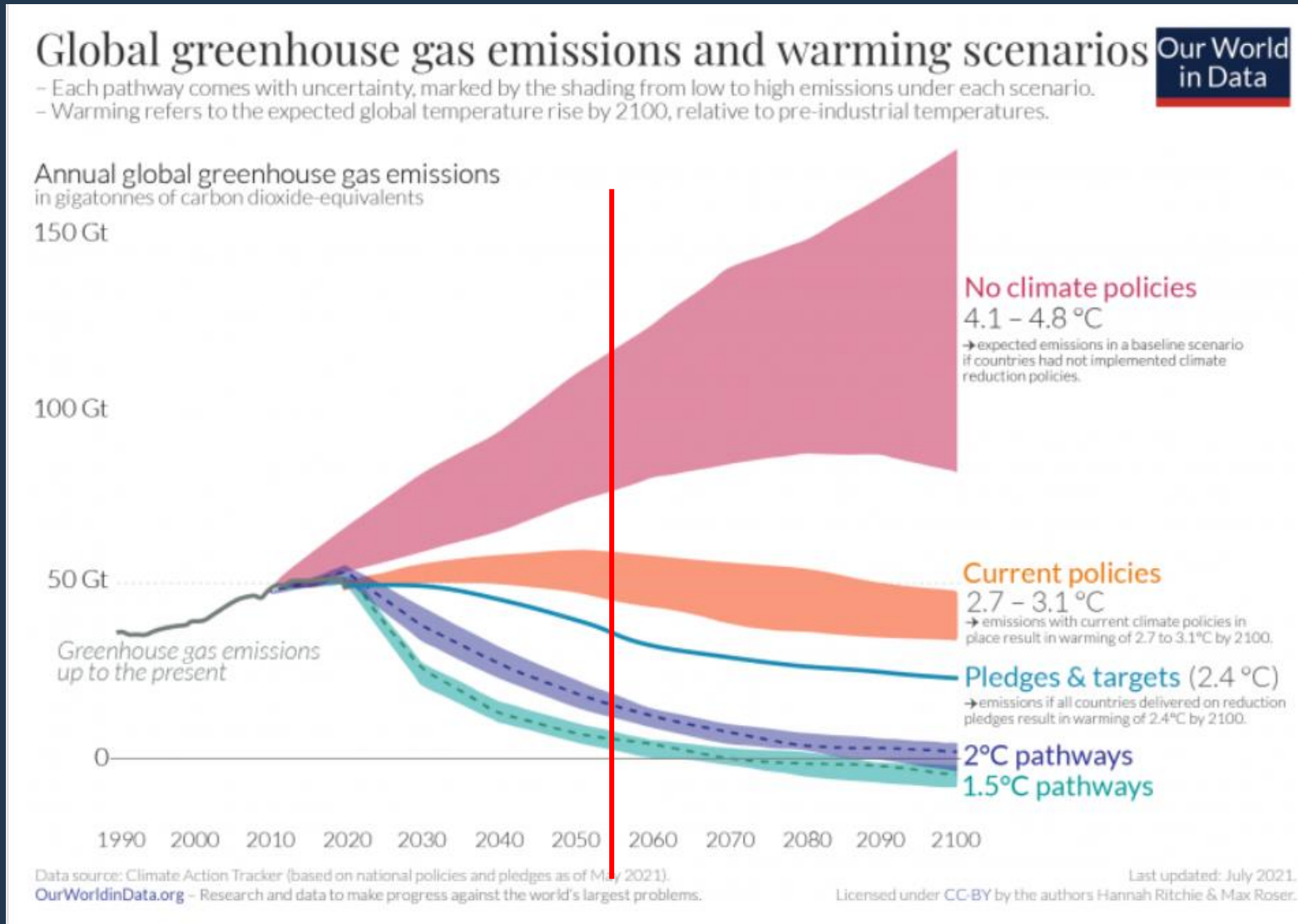
Figure [1.1] Overview of GHG Protocol scopes and emissions across the value chain





What is Net Zero?

The science-based route to a lower carbon world



- SBT are the process of aligning with the science behind the Paris Climate Change Agreement
- Distilled into what that means at an organisational level
- Leading to reduction targets on a near-term and long-term timeframe for that organisation
- Hence targets are 'science-based' as they align with the science of the Paris Climate Agreement to limit warming to 1.5°C

Net zero

- 'Net zero' is about reducing your GHG emissions as much as possible, following the carbon hierarchy and in line with Paris
- It covers the whole value chain – upstream and downstream – to reduce carbon, not just your organisation, and includes everything you use: transport, products & services, waste, etc
- For many organisations, more than 80% of the carbon could be outside the business, i.e. scope 3!
- Only once emissions have been reduced can you balance any remaining hard-to-decarbonise emissions with GHG Removals



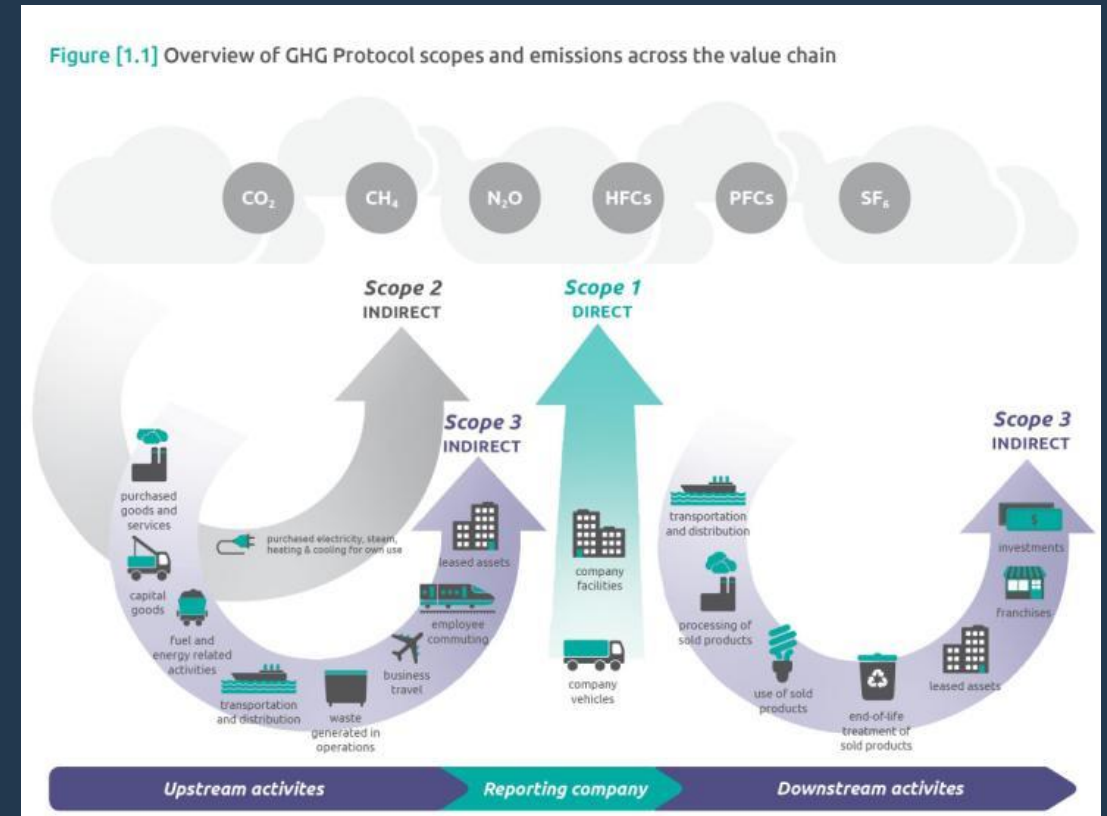
Net zero and carbon neutral

- Similar but different!
- Both are a zero-sum balance between GHG emitted and the same amount offset or sequestered – but different boundaries!
- ‘Carbon Neutrality’ generally focuses on Scopes 1 and 2. Scope 3 is optional but encouraged.
- There is no defined ambition for reduction.
- It allows offsetting.
- PAS 2060 is the Standard for Carbon Neutrality.

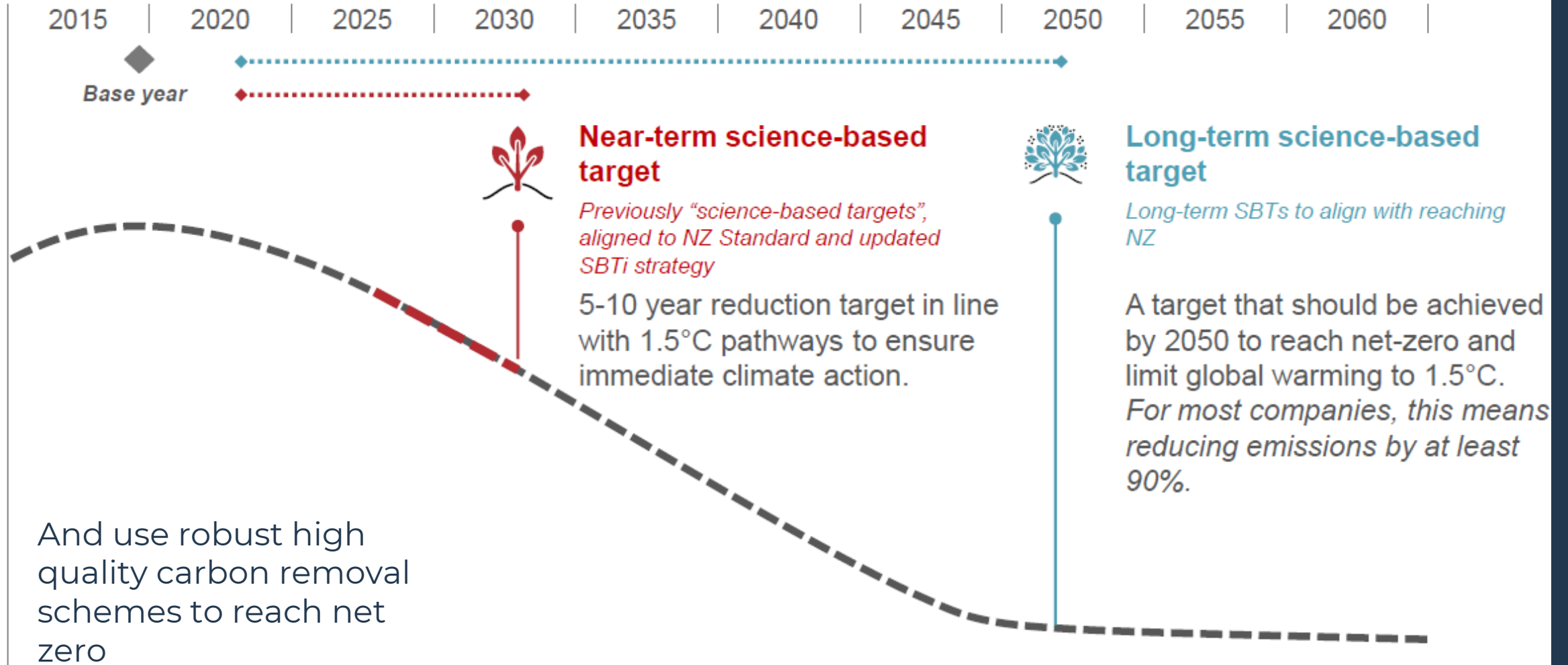


Some potential issues with 'net zero' and 'carbon neutral'

- Take care when organisations say they are 'carbon neutral' or 'net zero'. Is it their only their Scope 1 and 2, or is it Scope 3 also?
- Offsetting has its role to play with residual GHG emissions, and only after other actions have been taken – this is the carbon hierarchy



SBTs and Net Zero

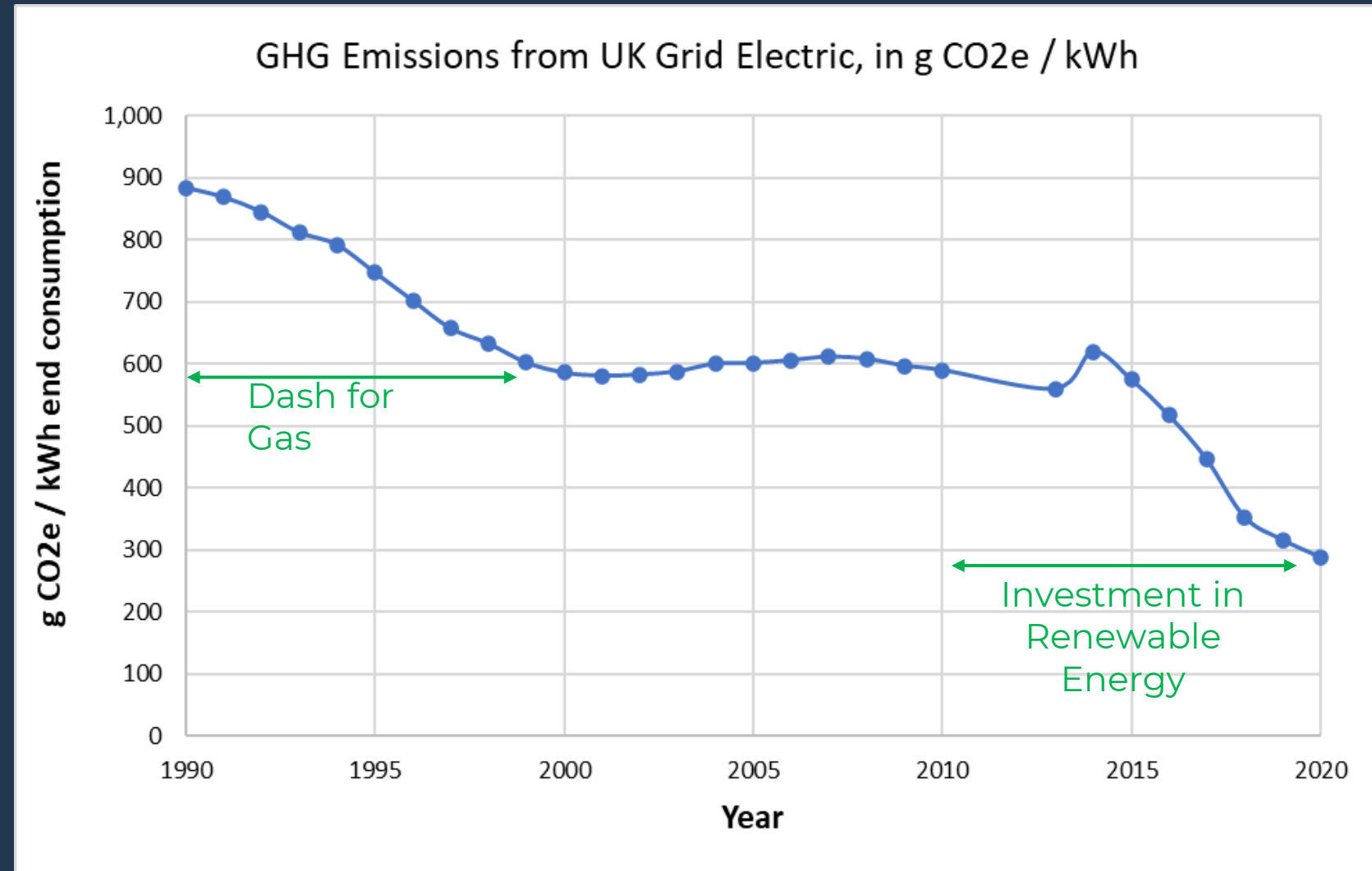




The UK's approach to Net Zero

Power Sector's role to date in decarbonising the UK

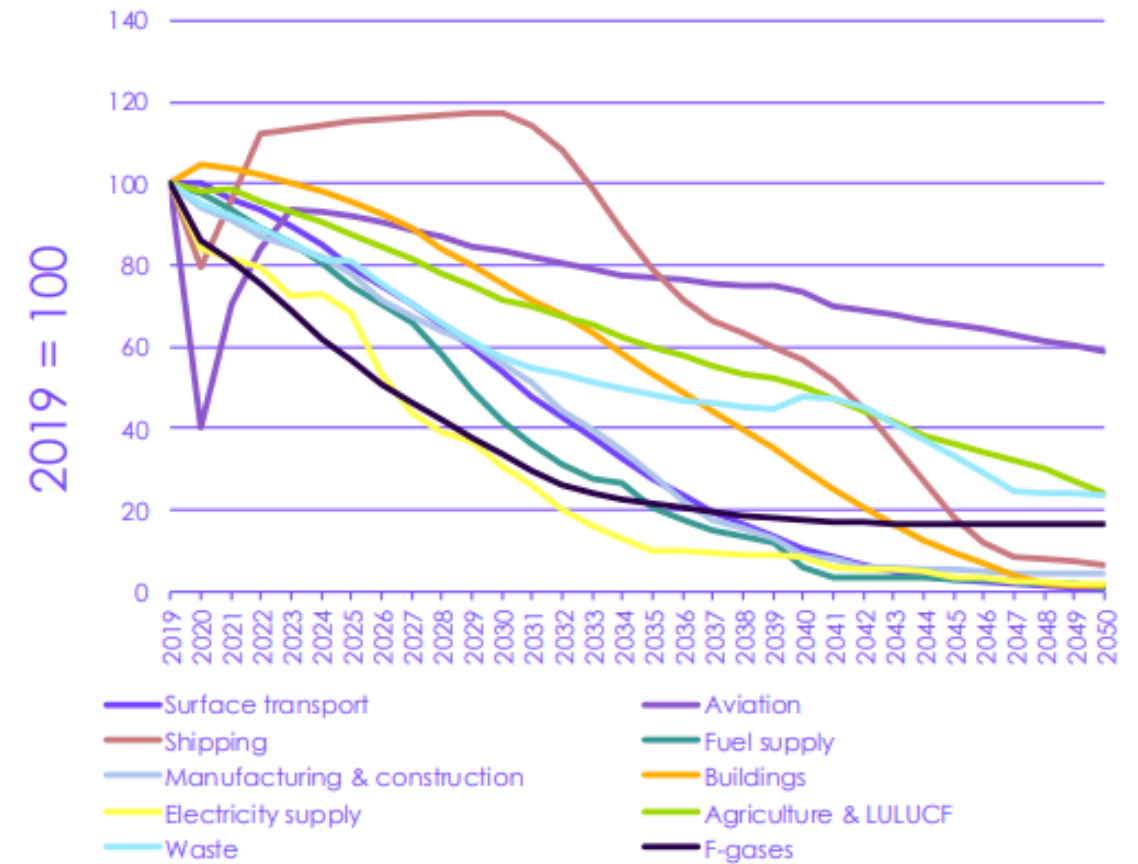
- Significant progress to reduce carbon intensity of the UK's grid electric
- Reduced 67% since 1990 when it was 900 gCO₂/ kWh (includes T&D, and WTT)
- But why? Two big reasons
- 'Dash for gas' in 1990's
- Five-fold increase in renewable energy production since 2010: on- & offshore wind, solar PV, and biomass



Reducing GHG to net zero

- **We should reduce emissions as far as possible, but as possible, but**
- Some activities and sectors are hard to fully decarbonise, for good reason
- Due to the nature of what they do, and the currently available technology to reduce emissions further
- Sectors in this space include agriculture, aviation, waste, the use of F-gases and some manufacturing

Figure 2.5 Change in sectoral emissions in the balanced Net Zero pathway compared to 2019 levels



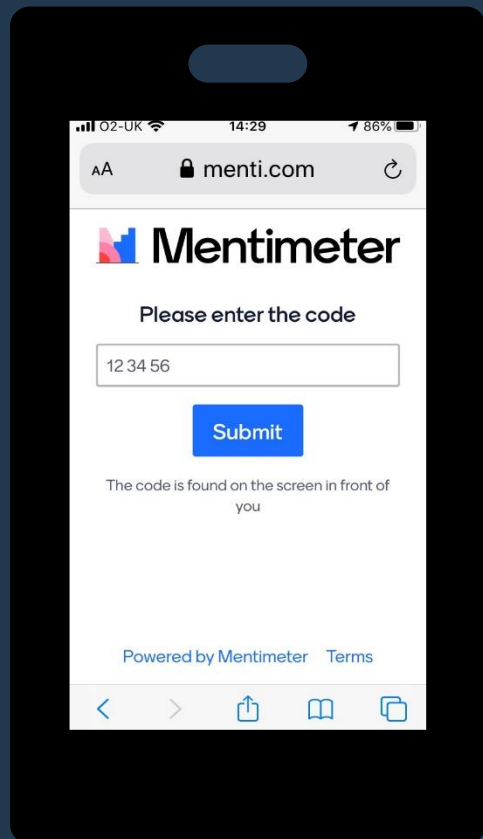
Source: CCC analysis.

Notes: Aviation and shipping pathways are lower in 2020 due to COVID-19. LULUCF = Land-use, land-use change and forestry.



How do we reduce carbon in line with science and net zero?

Carbon reduction activities



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Responding to climate change

Mitigation

Actions that reduce the emissions that contribute to climate change

- Sustainable transportation
- Energy conservation
- Thermal mass / sinks for temperature regulation
- Insulation and heat recovery systems
- Renewable energy
- Energy & carbon efficient materials and products
- Improve vehicle fuel efficiency
- Capture and use landfill & digester gas
- Geothermal
- Green roofs
- District heating
- Building design for natural light & ventilation
- Tree planting & care
- Water harvesting & conservation
- Local food production

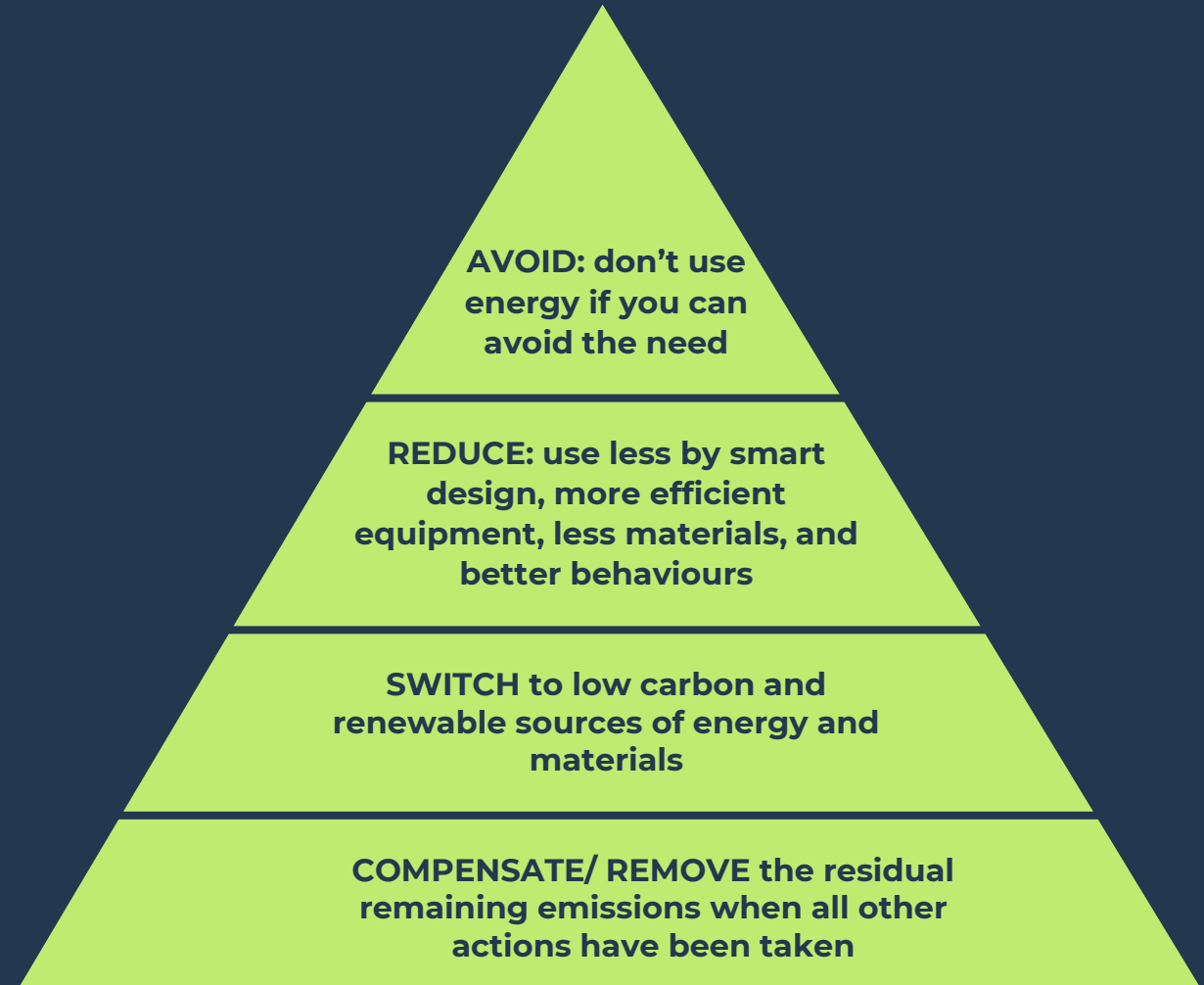
Adaptation

Actions that reduce vulnerability to the effects of climate change

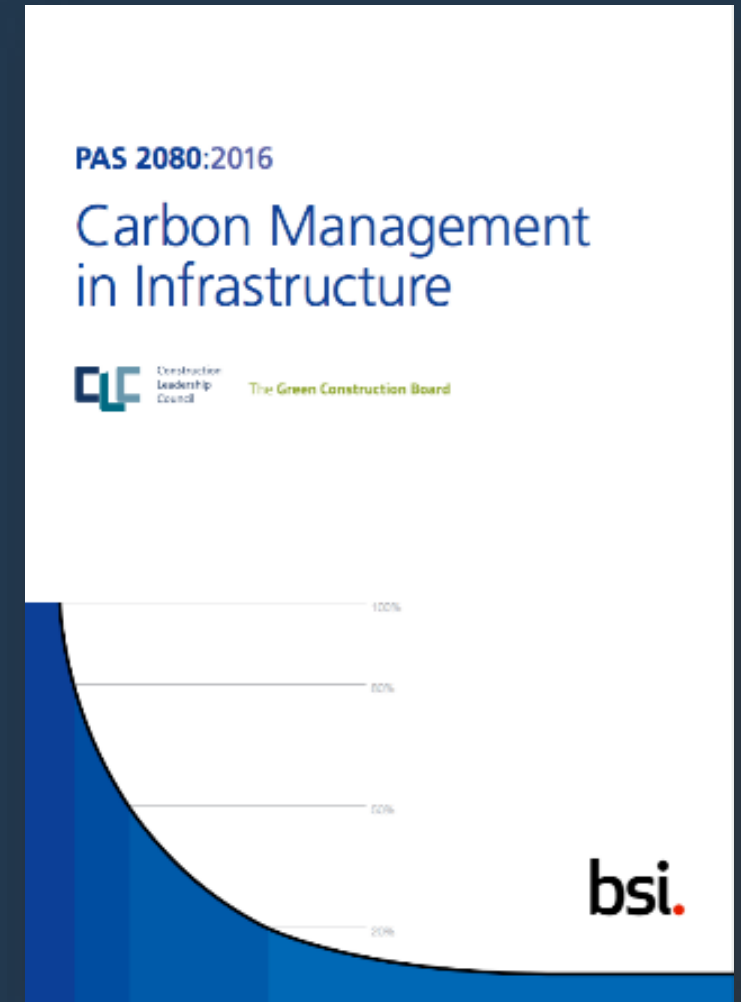
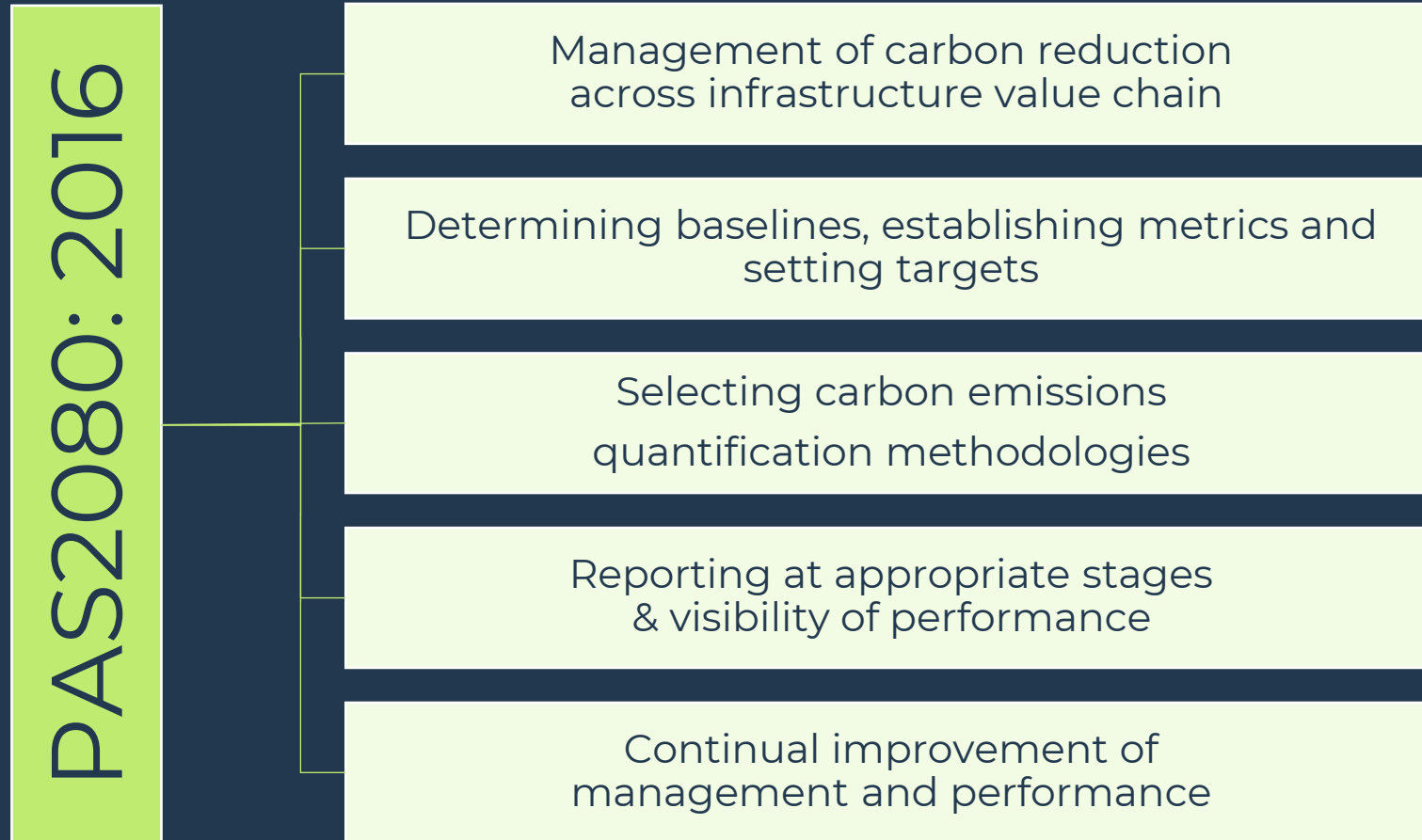
- Infrastructure upgrades: SUDS, sewers & culverts
- Residential programs: sewer backflow & downspout disconnection
- Health programs and help for vulnerable people
- Emergency & business continuity planning
- Coastal and river bank protection and flood plain maintenance



Use the Carbon & Energy Hierarchy






Introduction to relevant standards




Environmental Product Declarations: EPDs


A summary of the costs and environmental impacts from the manufacture and expected use of a product





EPD for Oriented Strand Board
1 of 14



Environmental Product Declaration - EPD

Environmental and economic life cycle performance including climate-related data

MSD Process Pump

The pump characterised in this EPD is inherently configurable. Configuration and efficiency depends on customer specification. The data given below are illustrative and only valid for the defined parameters (see chapter "Life cycle - coverage, assumptions, and exclusions").

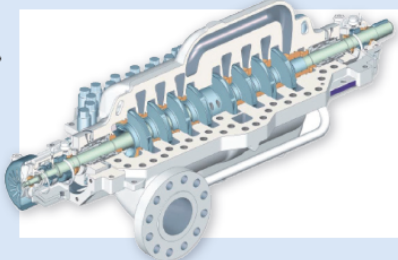
Main applications:
Oil & Gas, Hydrocarbon Processing, Power Generation and Waste Water Industries. The fluids pumped include hydrocarbons, crude charge, boiler feed, water feed and waste water.

Type:
ISO 13700 (API 610) type BE3 axially split, opposed impeller, dual volute, horizontal multistage pumps.

Rated power:
2,500 kW

Manufacturer:
Sulzer Pumps USA

CPC classification:
4322



Components included:

Pump including casing, baseplate, shaft, impeller, bearings

Gearbox Motor Frequency inverter Piping system

Electricity mix considered for usage: USA

Key economic and environmental advantages

- High availability of more than 98% (Customers typically buy two pumps for each service - one is standby)
- Design life of the pump is 20 years in accordance with API 610
- High efficiency and improved seal technology means lower energy consumption and hence lower emissions
- Variable frequency drives allow flexible performance and improved energy-efficiency
- Comprehensive training and professional service enable customers to operate the pump more reliably
- Retrofit service to re-establish the best efficiency point if operating conditions change
- Common API 610 materials are well suited for recycling.

Key economic and environmental indicators over life-cycle of 20 years

Costs	Energy consumption	CO ₂ emissions	Weight & composition																										
€ 12 045 000	1 898 000 GJ-Eq 759 GJ-Eq / kW	114 303 tonnes CO ₂ -Eq 45.72 tonnes CO ₂ -Eq / kW	10 664 kg 4.27 kg / kW																										
<table border="1"> <tr><td>Procurement / manufacturing</td><td>2.7%</td></tr> <tr><td>Usage electricity</td><td>96.0%</td></tr> <tr><td>Usage service</td><td>1.3%</td></tr> </table>	Procurement / manufacturing	2.7%	Usage electricity	96.0%	Usage service	1.3%	<table border="1"> <tr><td>Procurement</td><td>0.05%</td></tr> <tr><td>Manufacturing</td><td>0.03%</td></tr> <tr><td>Usage</td><td>99.92%</td></tr> </table>	Procurement	0.05%	Manufacturing	0.03%	Usage	99.92%	<table border="1"> <tr><td>Procurement</td><td>0.05%</td></tr> <tr><td>Manufacturing</td><td><0.01%</td></tr> <tr><td>Usage</td><td>99.94%</td></tr> </table>	Procurement	0.05%	Manufacturing	<0.01%	Usage	99.94%	<table border="1"> <tr><td>Cast iron</td><td>52.7%</td></tr> <tr><td>Alloyed / High alloyed steel</td><td>47.2%</td></tr> <tr><td>Oil</td><td><0.01%</td></tr> <tr><td>Others¹⁾</td><td><0.01%</td></tr> </table>	Cast iron	52.7%	Alloyed / High alloyed steel	47.2%	Oil	<0.01%	Others ¹⁾	<0.01%
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¹⁾ e.g. varnishes, seals

Environmental Product Declarations: EPDs

A summary of the costs and environmental impacts from the manufacture and expected use of a product



LCA Results

The results for the declared unit of 1 tonne of BDA average UK brick can be found below. As the average brick is assumed by the BDA to have a mass of 2.13 kg, results can be calculated per average brick by dividing individual values in results tables by a factor of (1000 / 2.13).

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts

			GWP	ODP	AP	EP	POCP	ADPE	ADPF
			kg CO ₂ equiv.	kg CFC 11 equiv.	kg SO ₂ equiv.	kg (PO ₄) ³⁻ equiv.	kg C ₂ H ₄ equiv.	kg Sb equiv.	MJ, net calorific value.
Product stage	Raw material supply	A1	AGG	AGG	AGG	AGG	AGG	AGG	AGG
	Transport	A2	AGG	AGG	AGG	AGG	AGG	AGG	AGG
	Manufacturing	A3	AGG	AGG	AGG	AGG	AGG	AGG	AGG
	Total (of product stage)	A1-3	213	1.85e-5	3.49	0.107	0.177	1.24e-4	2370
Construction process stage	Transport	A4	8.026	1.48E-06	0.027	7.08E-03	4.68E-03	2.11E-05	121.2
	Construction	A5	11.466	1.08E-06	0.177	6.07E-03	9.31E-03	8.41E-06	130.9
	Use	B1	MNR	MNR	MNR	MNR	MNR	MNR	MNR
	Maintenance	B2	MNR	MNR	MNR	MNR	MNR	MNR	MNR
	Repair	B3	MNR	MNR	MNR	MNR	MNR	MNR	MNR



Case studies

National Highways: Net Zero Highways 2030 / 2040 / 2050



CORPORATE EMISSIONS

Net zero by 2030



MAINTENANCE & CONSTRUCTION EMISSIONS

Net zero by 2040



ROAD USER EMISSIONS

Net zero by 2050

2030: Net zero for operations

- Covers own energy and travel. Actions include renewable powered lighting, LED road lighting, electric vehicles and tree planting.

2040: Net zero for maintenance and construction

- Covers emissions from making and transporting materials used to maintain network. Actions include near-zero plan for each procurement category, increasing capacity on existing roads, construction innovation programme

2050: Net zero carbon travel

- Covers emissions from users of the road network. Actions include zero carbon HGV trials, EV charging services, promotion of walking and cycling, access to rail, and measures to reduce the need to travel

National Highways: Goals for suppliers

Commitment to work with supply chain to deliver net zero commitments. Immediate asks for suppliers are to:

- Set a 1.5 degree aligned Science Based Target for operations and products and services supplied
- Implement a strong carbon management system aligned to PAS 2080 ahead of the third road period
- Develop a strong net zero innovation pipeline to deliver commitments



https://www.supplychainschool.co.uk/wp-content/uploads/2022/01/net-zero-highways-our-2030-2040-2050-plan_compressed.pdf

Case Study – National Highways Warm Mix Asphalt

National Highways have a target of **net zero carbon maintenance and construction activities by 2040**.

As part of this, NH are encouraging the use of **warm mix asphalts** (WMA) across the supply chain

- WMA is manufactured at temps **40° lower** than traditional asphalts with additional additives
- this means lower production carbon, with savings **of up to 15%** compared to traditional
- It's more **durable**, requiring less maintenance
- it can also be **recycled** back into new asphalts, preventing waste
- it has a **shorter cooling time**, so greater volumes can be laid in one shift, meaning lower cost

If all production in the UK switched to WMA, it would save around **61,000 tonnes of CO₂e** (300 million miles of car journeys).

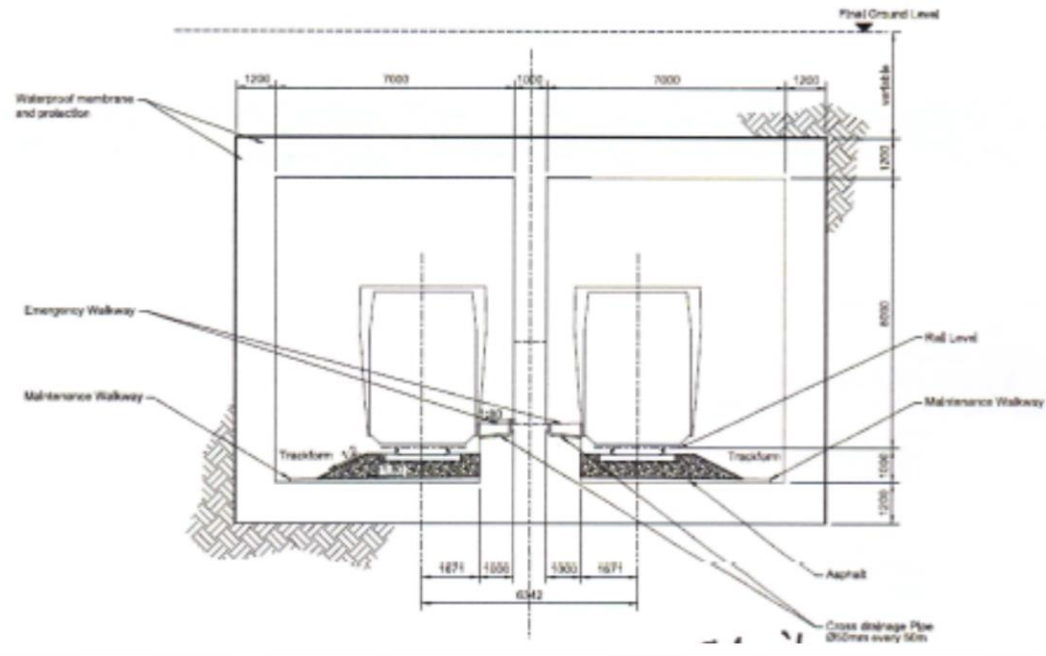


Example: building a train tunnel



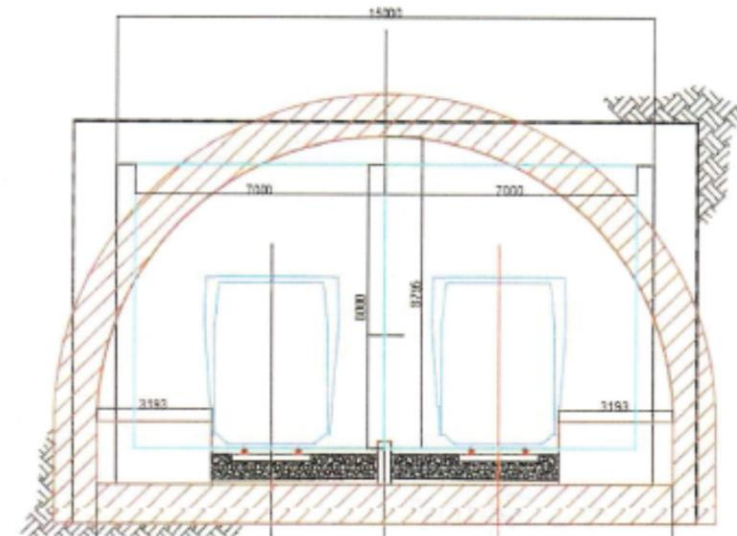
Different Engineering Options

Cast in-situ and partially precast reinforced concrete box (with twin cells) in open excavation (Cut and Cover)

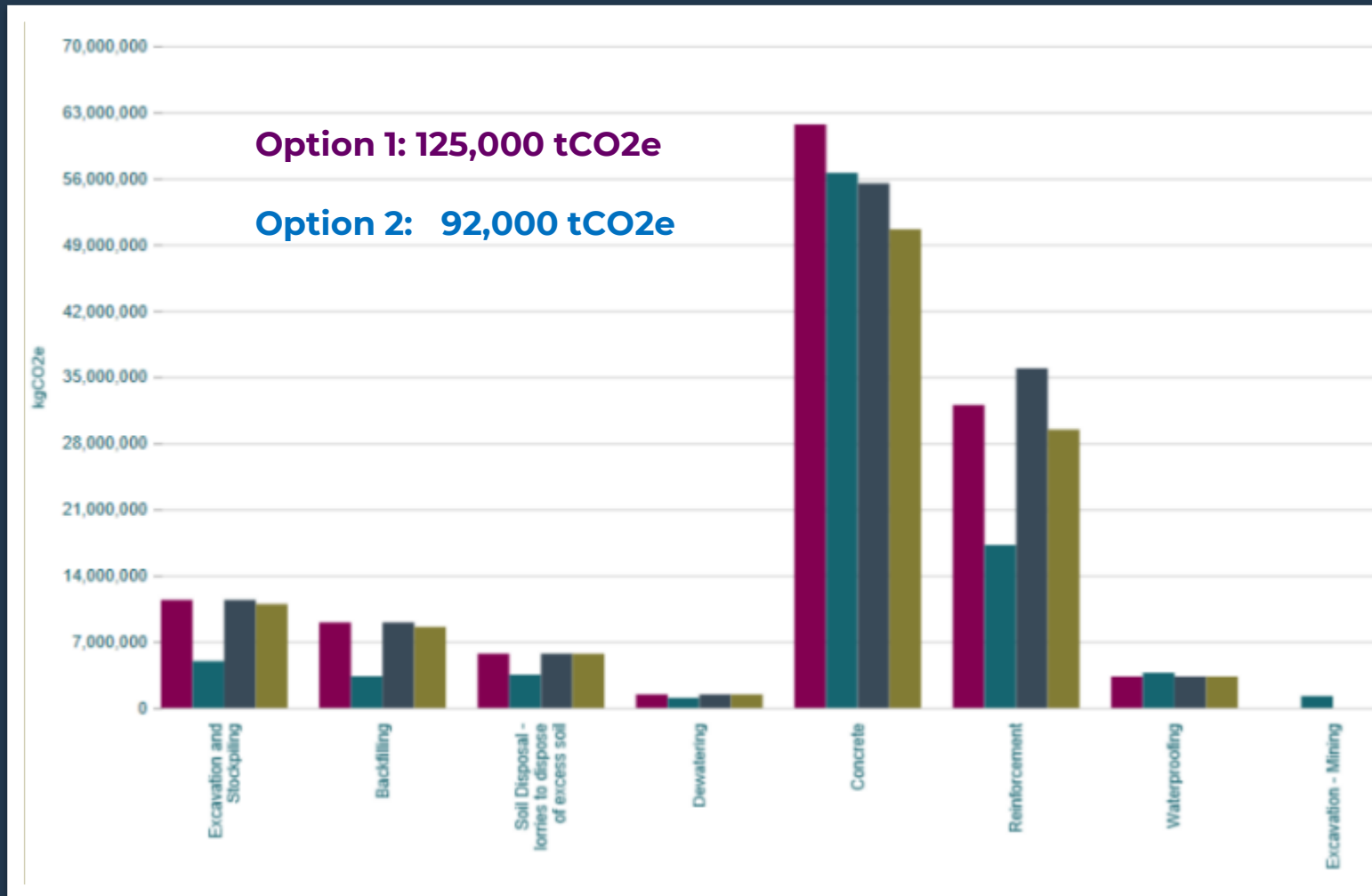


- Variations on
 - Cut & cover and/or mining
 - Concrete and/or steel
 - Boxes and/or arches

Cast in-situ and partially precast concrete arch (with twin cells) in combined open excavation (Cut and Cover) and mining (SCL)

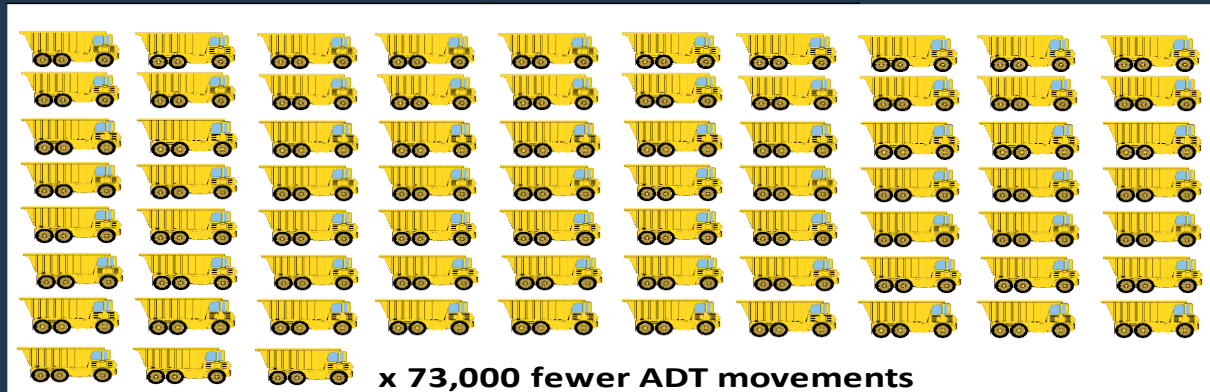
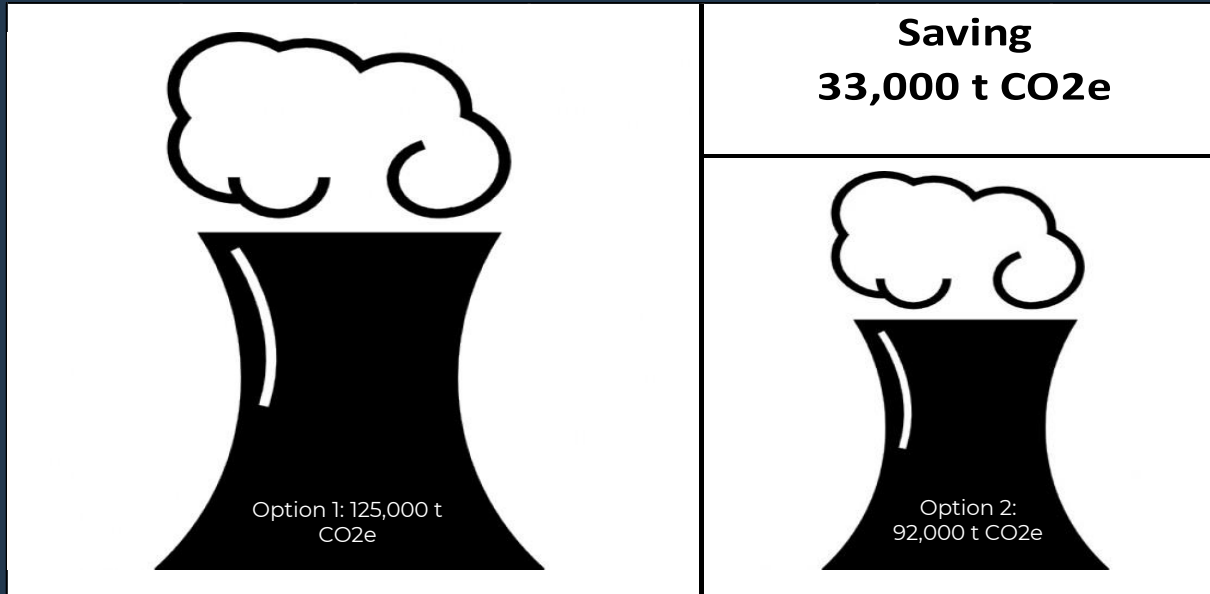


Carbon impacts for the options

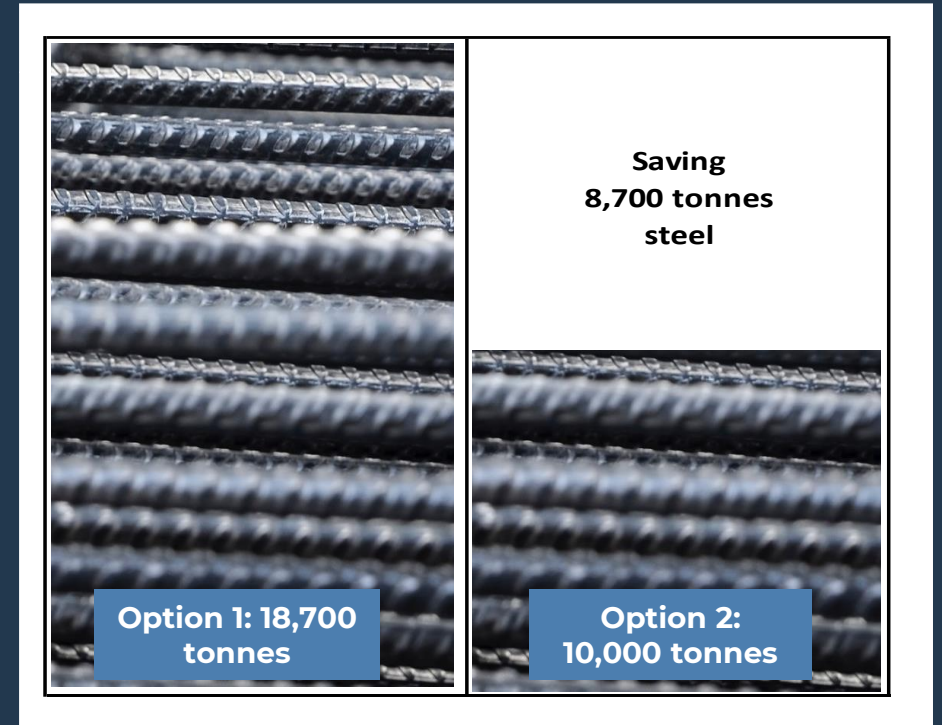
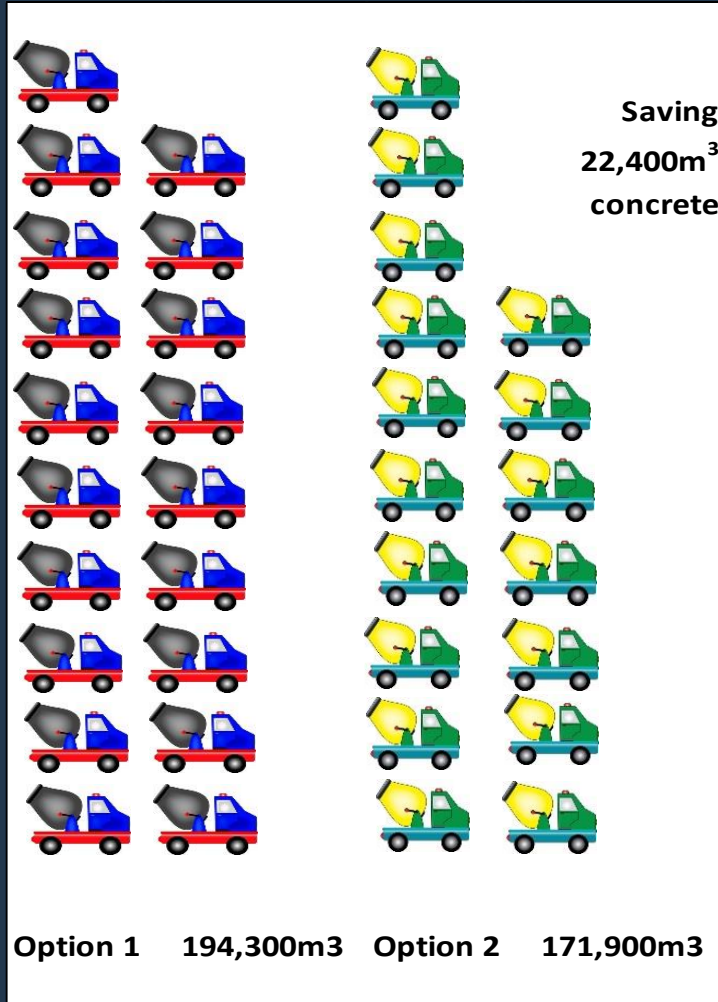


1. Excavation
2. Backfilling
3. Soil disposal
4. Dewatering
5. Concrete
6. Reinforcement
7. Waterproofing
8. Mining

Carbon and Earthworks savings



Concrete and steel savings



Carbon Equivalency

- 33,000 tCO₂e saved is equivalent to avoiding:
 - 1000 HGVs, each driving 24,000 miles; or
 - 40 full A380 flights from LHR to NYC; or
 - Emissions from grid electric and gas used in 10,000 UK homes for a year – roughly equivalent to a town the size of Aberdare, Pontypridd, Winsford, or Beverley



<https://www.constructionenquirer.com/2021/11/16/hs2-hails-big-carbon-saving-on-uks-longest-rail-bridge/>

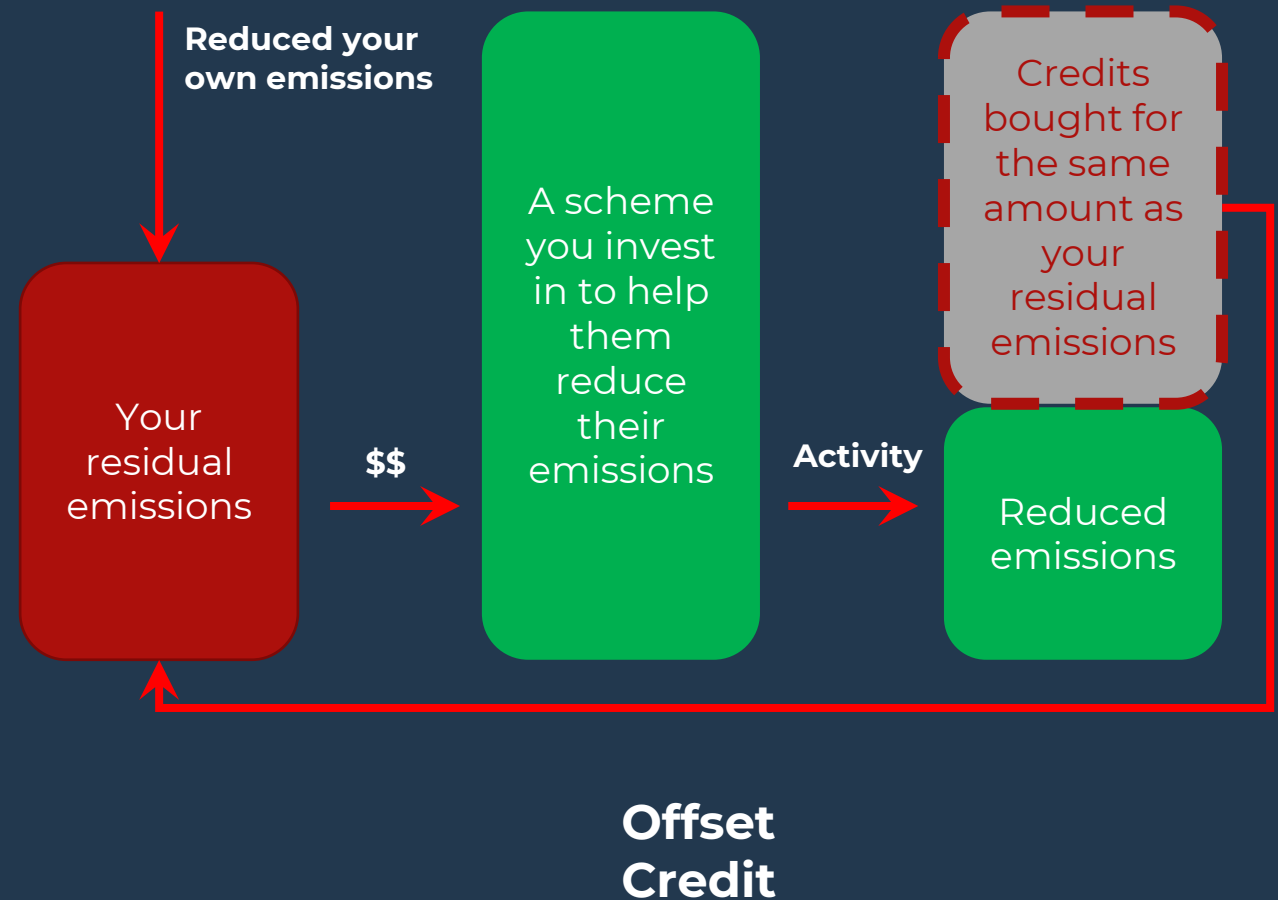
<https://www.pbctoday.co.uk/news/planning-construction-news/hs2-colne-valley-viaduct/101860/>



What do we do with hard to decarbonise residual carbon?

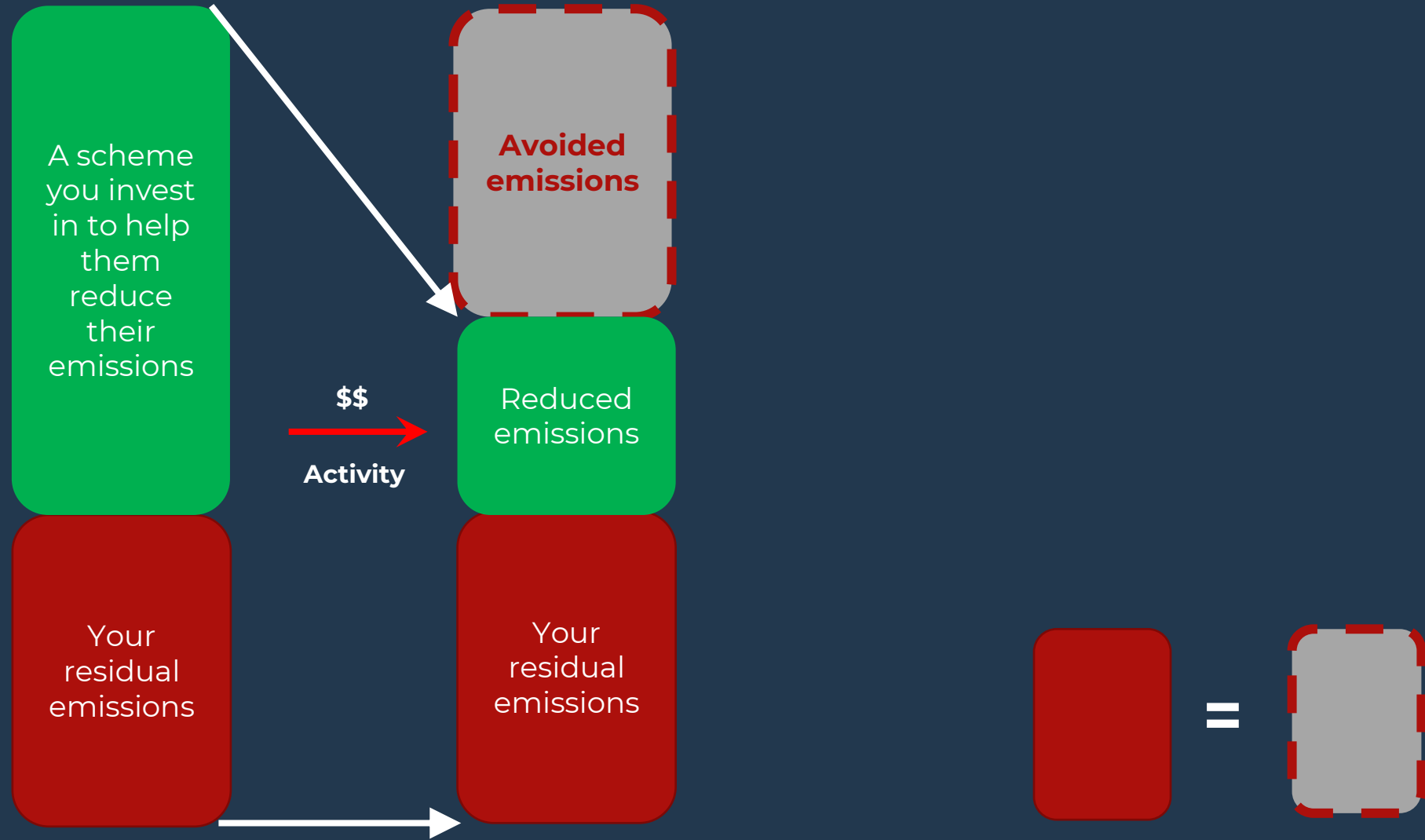
What does 'carbon offsetting' mean?

- Compensating for GHG emissions that arise from an organisation, product or project in one place through GHG avoidance, reduction or removal activities elsewhere
- Achieved by investing in projects that will lead to lower carbon emissions overall when compared to a business-as-usual situation, that would not have otherwise happened without the investment



What does 'carbon offsetting' mean?

- So overall, we have gone from a BaU scenario...



The benefits of carbon offsetting

- Provides a 'polluter pays' mechanism that affords a level of responsibility to the emitter and puts a price on carbon
- Helps investment in low and zero carbon schemes, reduces reliance on fossil fuels
- Other benefits: reducing poor air quality, improving health and wellbeing benefits, increasing biodiversity gain, creating jobs and social value
- The final piece of the carbon reduction strategy puzzle after reduction actions have been taken.



What does 'good' offsetting look like?

- To be robust the offsetting needs to be
 - ***Real (verifiable and traceable)***
 - ***Additional***
 - ***Measurable***
 - ***Permanent***
- Backed by a mechanism that is
 - Independent, transparent, inclusive, with robust governance, avoids double counting

R

A

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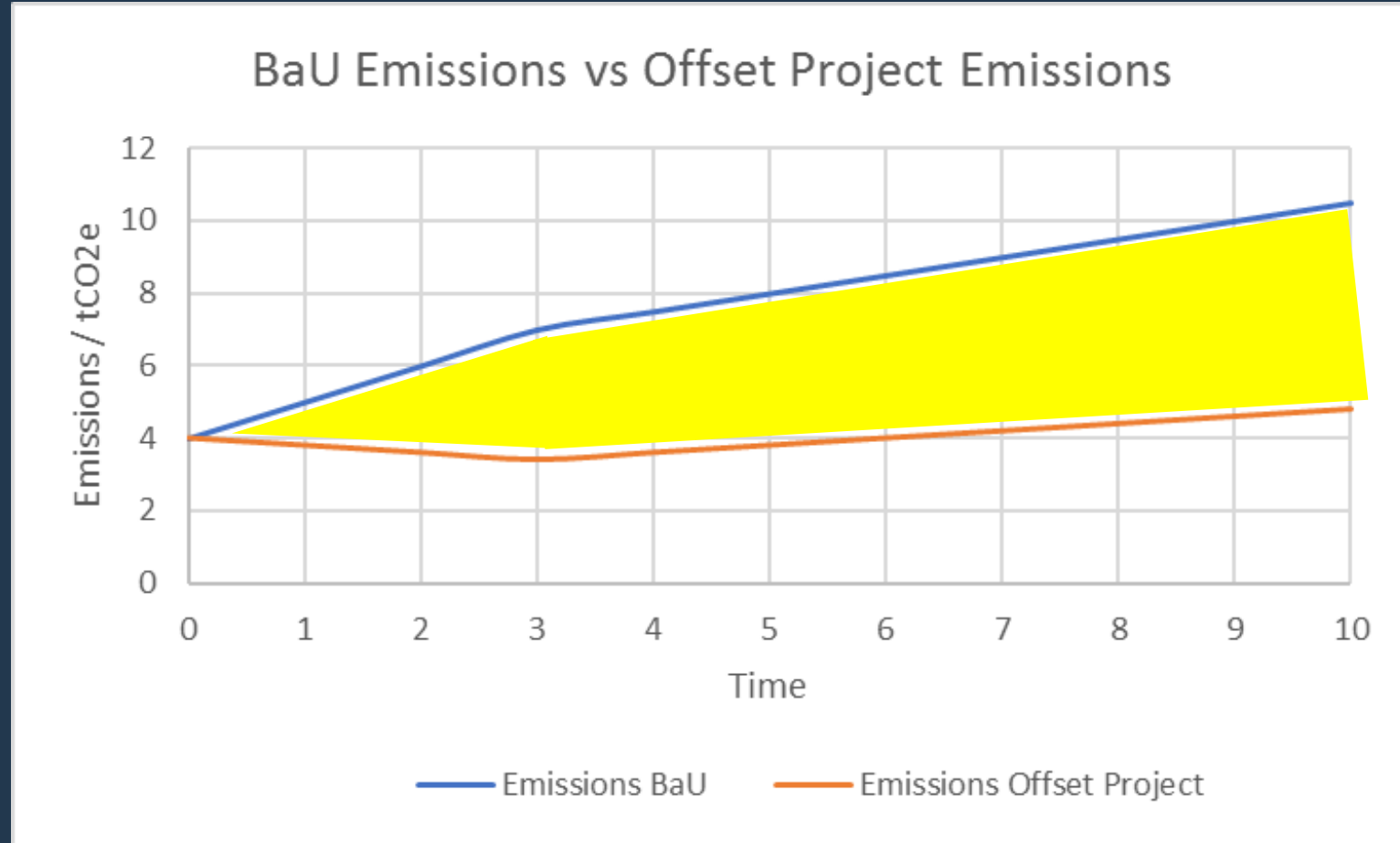
Examples of carbon offsetting projects

- Projects cover the whole carbon hierarchy
- Avoid / switch: renewable energy provision – zero carbon emitted compared to fossil fuels
- Reduce: methane capture (converting it to CO₂); efficient appliances and transport; drinking water
- Removal: reforestation, afforestation, carbon capture & storage



Practicalities

- Compare BaU baseline emissions (no offset project) against emissions with investment in project
- Measure reduction in emissions
- 1 tonne of CO₂e avoided or reduced = 1 carbon credit, or offset



How much does offsetting cost?

Typical carbon offset costs

- \$10 / tonne, e.g. renewables likes wind and solar power
- \$15 / tonne, e.g. cook stoves
- \$25 / tonne, e.g. reforestation programme
- But they can cost more



FOREST MANAGEMENT
IMPROVES FOREST HEALTH

Practicalities – two main options

- **UNFCCC Clean Development Mechanism (CDM)**
- Truly global, backed by UN and Govts party to Kyoto Protocol
- Public registry database of projects and credits
- Separate validation of project and verification of emissions
- CDM Projects can credit for up to 10 years; forestry 20+ years
- Limited to developing nations to drive sustainable development
- Offsets are called Certified Emissions Reductions (CER)



Practicalities – two main options

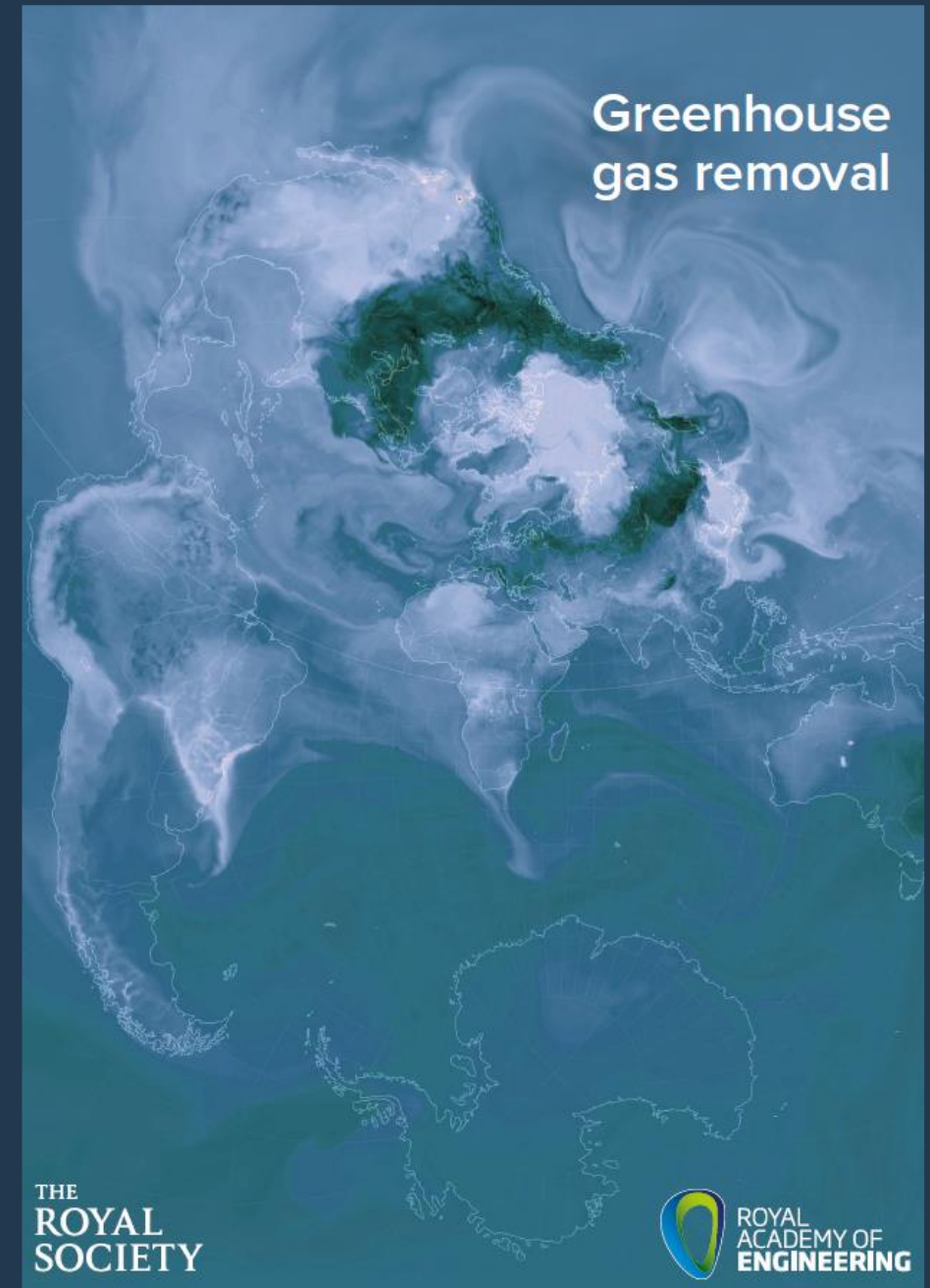
- **Voluntary Carbon Markets Mechanisms**

- Many of them run by private organisations at international, national and regional levels.
- Not all are equal! Check for RAMP! Robust examples include
 - Gold Standard <https://www.goldstandard.org/>
 - Verified Carbon Standard <https://verra.org/project/vcs-program/>
 - Plan Vivo <https://www.planvivo.org/>
- Project owners can choose not to disclose publicly
- Validation of project and verification of emissions done in parallel
- Projects can credit for up to 10 years; forestry up to 100 years
- Projects can be anywhere – developing or developed nations
- Offsets are called Verified Emissions Reductions (VER), Voluntary Carbon Units (VCU), or similar names



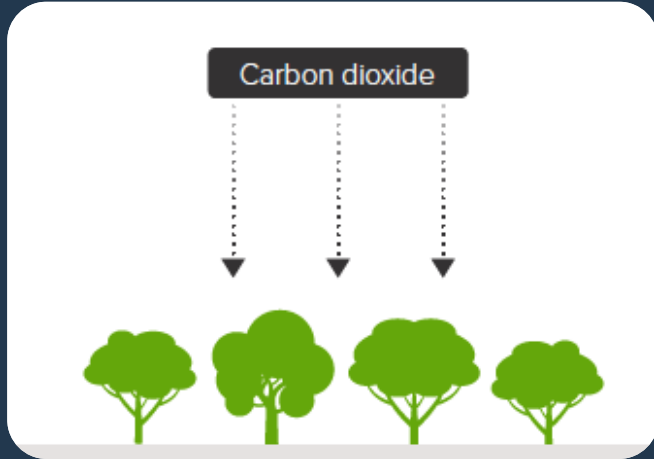
Going further: GHG Removal

- **Actively removing GHG from the atmosphere**
- Goes further than compensating for emissions in one place with reduced emissions elsewhere by actually removing the carbon from the atmosphere
- Variety of different routes and technologies to sequester carbon
- Some more developed than others
- Required for true, deep decarbonisation and net zero targets

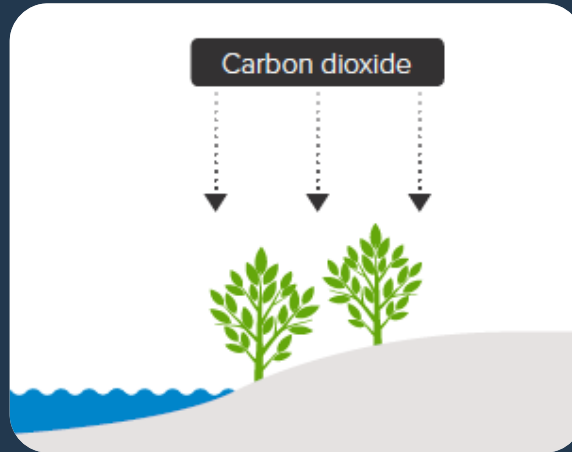


Going further than offsetting: GHG Removal

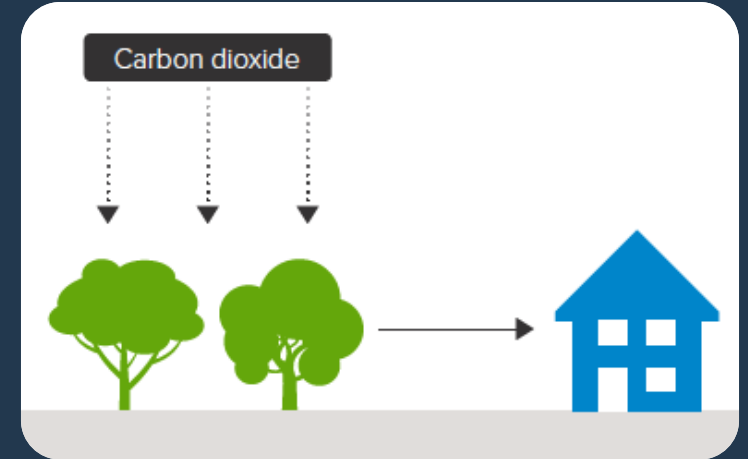
Afforestation, reforestation



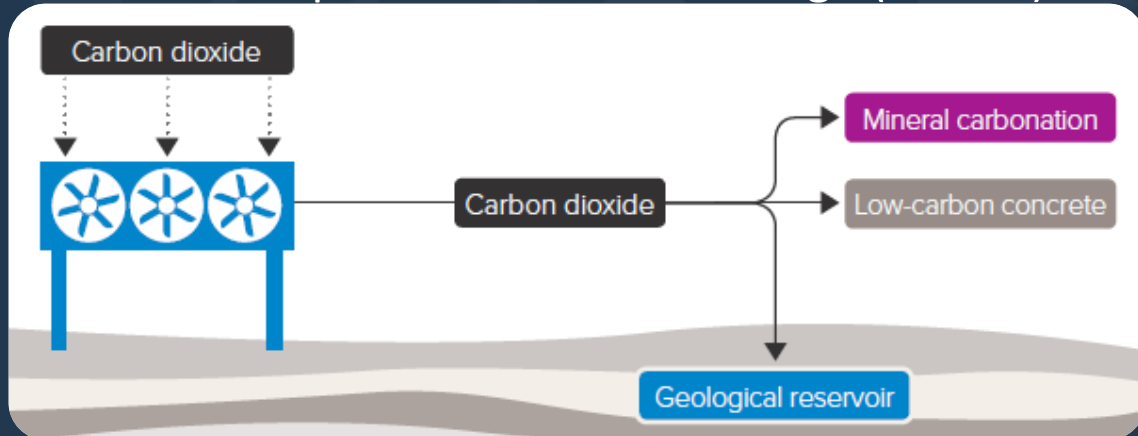
Wetland, peatland and coastal habitat restoration



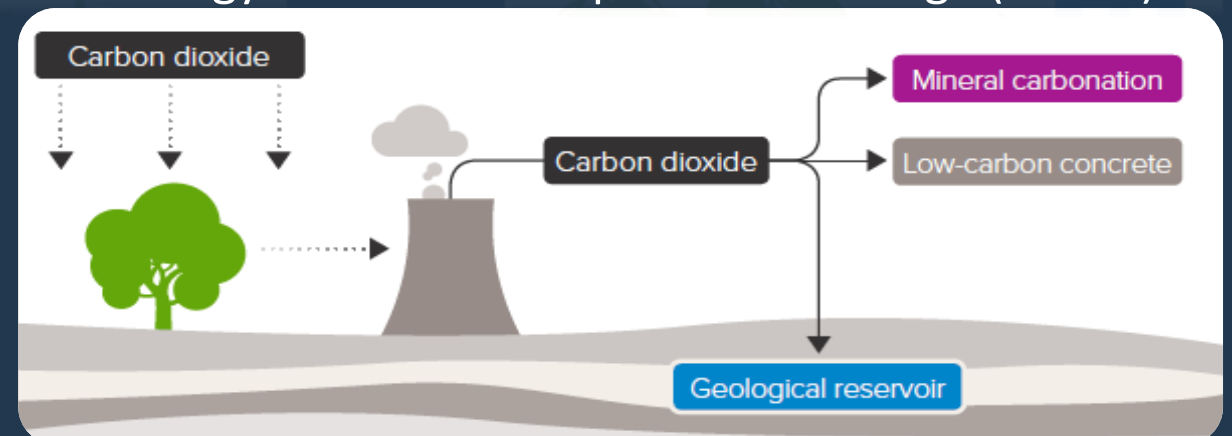
Building with biomass



Direct air capture and carbon storage (DACCS)



Bioenergy with carbon capture and storage (BECCS)





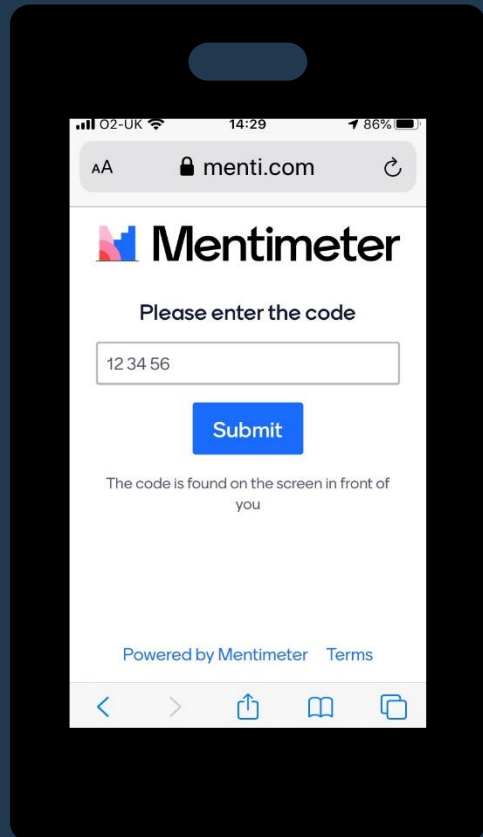
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Science Based Targets

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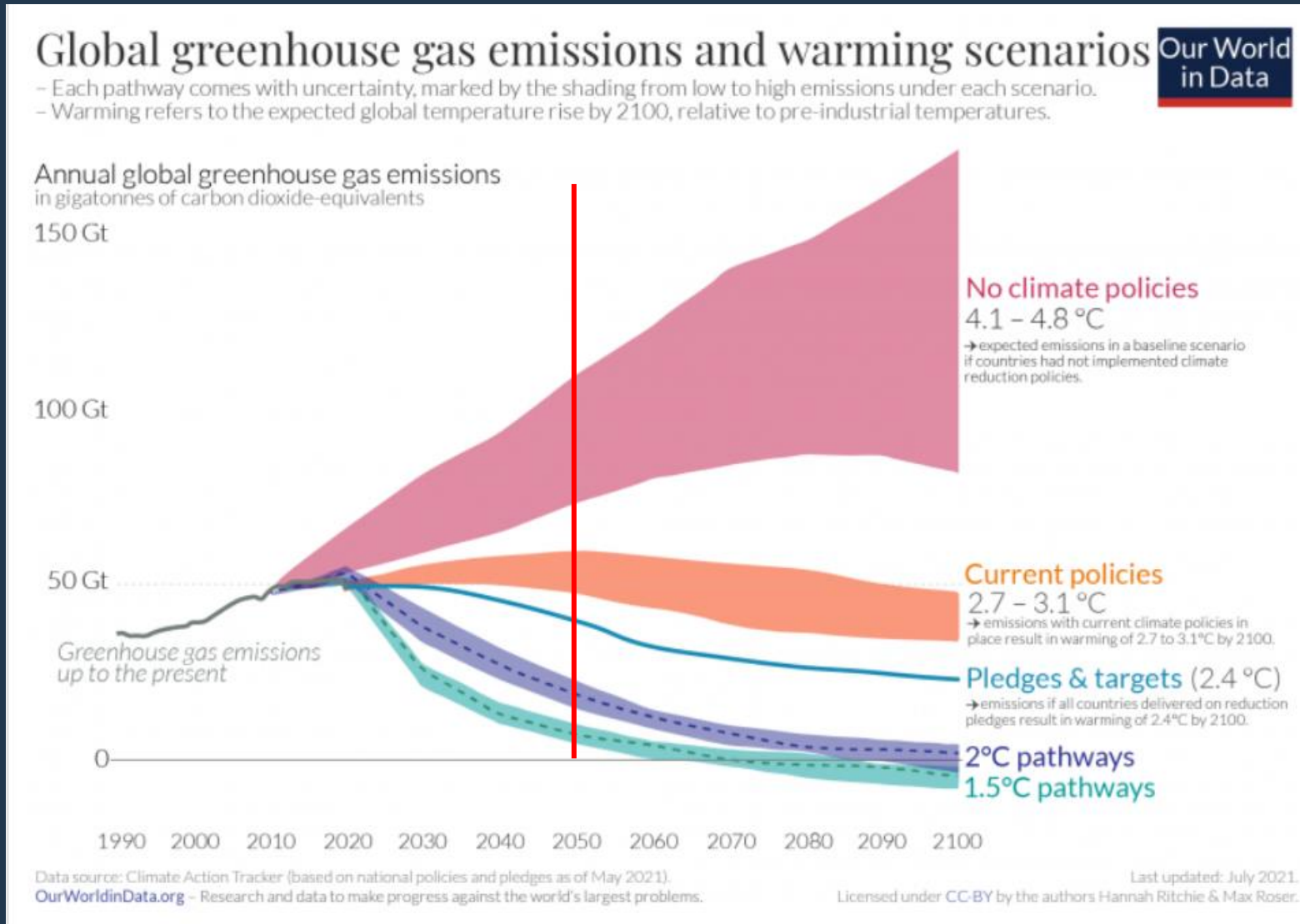
Your experience with SBTs



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3. Don't disconnect from the webinar, you will still need to hear us

The science-based route to a lower carbon world



- SBT are the process of aligning with the science behind the Paris Climate Change Agreement
- Distilled into what that means at an organisational level
- Leading to reduction targets on a near-term and long-term timeframe for that organisation
- Hence targets are 'science-based' as they align with the science of the Paris Climate Agreement to limit warming to 1.5°C

Science Based Targets Initiative (SBTi)

- Who they are and their purpose:
 - A partnership between CDP, the UN Global Compact, the World Resources Institute and the World Wildlife Fund
 - A method for any organisation to set carbon emissions reduction targets in line with the Paris Climate Agreement that has long term goals for the planet and global economy
 - Identify opportunities to reduce carbon and cost, and report to your clients



Route to Setting a Target: Large organisations

(The SBTi define an SME as a non-subsidiary, independent company with fewer than 500 employees)

DAY 1



COMMIT

Company submits a letter establishing its intent to set a science-based target



DEVELOP

Company works on an emissions reduction target in line with the SBTi criteria



SUBMIT

Company presents the target to the **SBTi for official validation**

24 MONTHS



COMMUNICATE

Company announces the target and informs stakeholders

AFTER APPROVAL

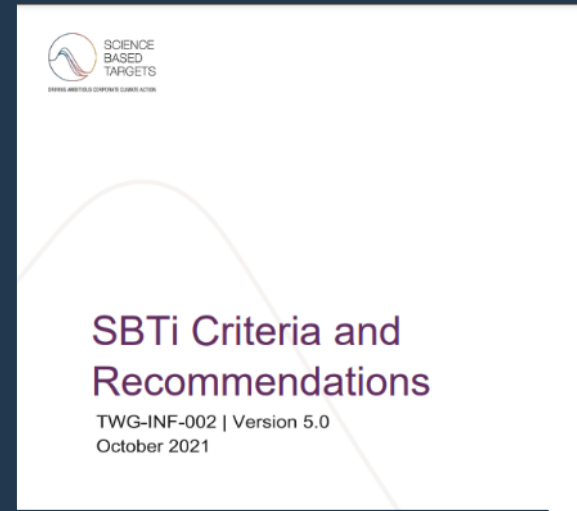


DISCLOSE

Company report its emissions and progress against targets on an annual basis

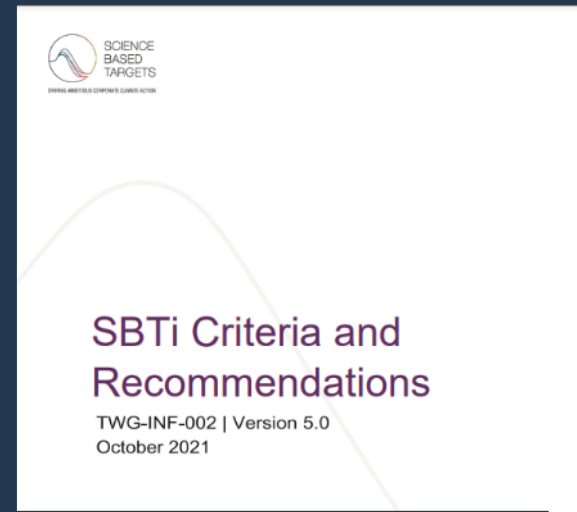
Criteria for Developing a Target (updated 15th July 2022)

- **Boundaries (organisational and operational)**
 - Set at parent company level and must include **at least 95% of your company-wide scope 1 and 2** GHG emissions, consistent with GHG Protocol.
 - State whether location- or market-based accounting for scope 2.
 - Can include procurement of **renewable electricity** for scope 2 target
- Must do a **scope 3 screening exercise** to understand significance
- If **scope 3 emissions (up- or downstream) accounts for 40%** or more of your total GHG emissions (scopes 1, 2 and 3) then must include **at least 67% of your scope 3** emissions.
- Indirect scope 3 emissions are encouraged but outside the 67% min coverage for the target boundary.
- Fossil fuel sales sector **MUST** include scope 3 at 1.5C ambition. Fossil fuels production sector can not get a SBT
- **Biogenic emissions** also must be reported (out of scopes)
- But **avoided, reduced and carbon credits** (offsets or removals) can not be counted for SBTi (SBTi NZ Standard)



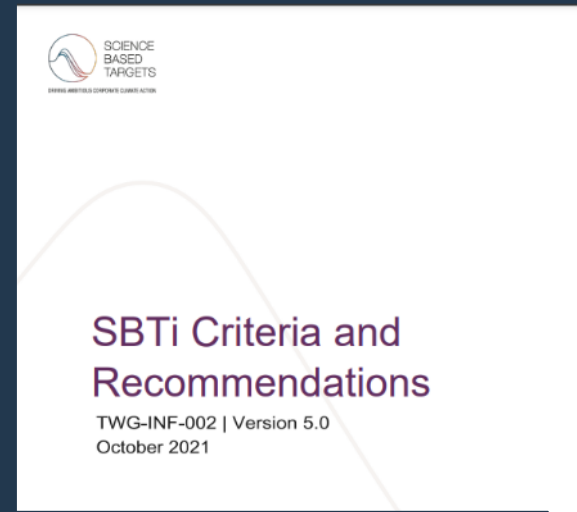
Criteria for Developing a Target (updated 15th July 2022)

- **Ambition for minimising temperature rise**
 - **Til 14th July (v4.2):**
 - For scopes 1 and 2 it must at a minimum be consistent with the level of decarbonization required to keep temperature increase to **well-below 2°C (WB2D) or ideally 1.5°C.**
 - For scope 3 it must, at a minimum be aligned to a **2°C warming** scenario
 - **From 15th July (v5):**
 - For scopes 1 and 2 it must at a minimum be consistent with the level of decarbonization required to **keep temperature increase to 1.5°C.**
 - For scope 3 it must, at a minimum be aligned to a **well-below 2°C warming scenario**
- **Gather data for the baseline year for targets**
 - Base year of earlier than 2019 if submitted in 2022, otherwise 2015 is earliest base year



Criteria for Developing a Target (updated 15th July 2022)

- **Timeframes**
 - **Til 14th July (v4.2):**
 - Set medium term targets between **5 to 15 years** into the future
 - **From 15th July (v5):**
 - Set near term targets between **5 to 10 years** into the future
- **Progress**
 - Both the target timeframe ambition (base year to target year) and the forward-looking ambition (most recent year to target year) must meet the ambition criteria.
- **Communicate, Disclose and Recalculate**
 - Publicly **communicate** SBT within 6 months of approval
 - Publicly report GHG emissions inventory and progress against SBT on **an annual basis**
 - **Recalculate** target at least every 5 years, or sooner if significant change
- **Develop an action plan**
 - The actions you will take to ensure you hit your reduction target in the 5 – 10 year near term timeframe, including your supply chain (**this is NOT assessed by SBTi as it is company-specific**)
- **USD 9,500 for Large Orgs**



Criteria for Developing a Target (updated 15th July 2022)

The Absolute Approach (contraction) means everyone reducing emissions, absolutely, by the same percentage reduction. Any organisation can do this except power.

The Sectoral Decarbonisation Approach (convergence) means everyone in a given sector reducing emissions, relatively, to a given industry average emissions intensity. Aluminium, cement, commercial buildings, iron & steel, and pulp & paper, as well as some other non-construction sectors, can take either the SDA or Absolute Contraction Approach. Power can only do SDA.



SBTi Tool

AutoSave On SBT-Tool-v1.2.1.xlsx - Excel Search (Alt+Q) James Cadman

File Home Insert Page Layout Formulas Data Review View Help

Clipboard Font Alignment Number Styles Cells Editing Analysis

1 500

SCIENCE BASED TARGETS

Science-based Target Setting Tool

Version: Version 1.2.1
Support: info@sciencebasedtargets.org

Section 1. Input data

Target setting method	Absolute Contraction Approach	<i>Note: this approach not applicable to Power Sector</i>
SDA scenario		<i>Select SDA scenario</i>
SDA sector		
Base year	2019	<i>Dropdown</i>
Target year	2034	<i>Dropdown</i>
Projected output measure		
Base year output	5,000	
Target year output	10,000	
Scope 1 emissions	500	<i>tCO2e</i>
Scope 2 emissions	300	<i>tCO2e</i>

IMPORTANT NOTICE:

This Tool is intended to support companies in their modeling of science-based emissions reductions targets, as well as to assist companies and interested third parties in assessing and evaluating companies' targets. However, to be approved by the Science Based Targets initiative, companies need to make sure their target(s) fulfill the SBTi criteria. Please review the SBTi Step by Step guide to access the latest criteria and resources: <https://sciencebasedtargets.org/step-by-step-guide/>

Also please note that the SBTi assesses "forward-looking" ambition of target(s) by using the year the target is submitted to the initiative (or the most recent GHG inventory).

Please help us improve this tool by reporting issues related to functionalities and formatting.

Update notification:
Please note that companies may continue to submit targets using SBT Tool version 1.1 until January 1st, 2021. Version 1.2 is no longer supported, please use current version 1.2.1 or contact info@sciencebasedtargets.org.

Section 3. Absolute Contraction Approach

Well below 2 degree scenario (WB2C)

[Review all target modeling data](#)

	Base year (2019)	Target year (2034)	% Reduction
Scope 1 emissions (tCO2e)	500	313	37.5%
Scope 2 emissions (tCO2e)	300	188	37.5%
Scope 1+2 emissions (tCO2e)	800	500	37.5%

1.5 degree scenario (1.5C)

[Review all target modeling data](#)

	Base year (2019)	Target year (2034)	% Reduction
Scope 1 emissions (tCO2e)	500	165	63.0%
Scope 2 emissions (tCO2e)	300	111	63.0%
Scope 1+2 emissions (tCO2e)	800	296	63.0%

Absolute emissions targets | WB2C

Absolute emissions targets | 1.5C

— FALSE — select a SDA sector

Route to Setting a Target: SMEs

(The SBTi define an SME as a non-subsubsidiary, independent company with fewer than 500 employees)



Route to Setting a Target: SMEs



The Target-setting form for SMEs is at <http://form.jotform.co/targets/sme-target-validation>

- Special, quicker route for SMEs (less than 500 employees and not part of parent company)
- The SME can go straight to setting a SBT for their scope 1 and 2 emissions.
- The business must choose one of temperature pathways, and within that choose one of the three pre-defined base-year options (2018, 2019 or 2020) in the Target Setting Letter
- Whilst the SBTi does not approve SME's scope 3 targets, the SME does have to commit to measuring them
- Oil & gas companies and financial institutions cannot set targets through the SME's route
- As with large organisations, SMEs must communicate their targets and publicly disclose their emissions inventory and progress against targets on an annual basis.
- Costs \$1,000 to get validated.

Resources Guidance – Free Carbon Data and Tools

- **Defra/BEIS 2021 Greenhouse gas reporting conversion factors** : the UK Government's database of carbon factors for fuel, energy, transport, and materials, updated annually. <https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021>
- **Bath Inventory of Carbon and Energy (ICE)** database: a well-established database of embodied carbon factors for a variety of materials, updated periodically. <http://www.circularecology.com/embodied-energy-and-carbon-footprint-database.html>
- **Supply Chain School Carbon Calculator**: a free tool from the School to measure scope 1, 2 and 3 emissions in your supply chain. <https://carbon.sustainabilitytool.com/>
- **The Embodied Carbon in Construction Calculator (EC3) Tool**: a database of EPDs for construction products <https://buildingtransparency.org/ec3>
- **Carbon Trust Carbon Calculator** for SMEs: The Carbon Footprint Calculator has been designed to help UK based SMEs measure their corporate emission footprint following GHG Protocol Guidance, including direct emissions from fuel and processes (Scope 1 emissions) and those emissions from purchased electricity (or Scope 2 emissions) for the assets they operate <https://www.carbontrust.com/resources/tools/carbon-footprint-calculator>
- **Highways England Carbon Tool**: a free-to-download Excel tool to calculate carbon emissions for operational, construction and maintenance activities undertaken on behalf of Highways England that draws on Defra and Bath ICE datasets www.gov.uk/government/publications/carbon-tool
- **The RSSB Rail Carbon Tool** is a web-based tool that allows you to calculate, assess, analyse, report and reduce your rail project carbon footprint by evaluating low-carbon options using verified, centrally-available carbon factor data that draws on Defra and Bath ICE datasets <https://www.railindustrycarbon.com/>
- **Environment Agency Carbon Calculator**: a free-to-download tool to calculate the carbon impact of different material and transport options in your project www.ice.org.uk/knowledge-and-resources/best-practice/environment-agency-carbon-calculator-tool
- **Hawkins\Brown: Emission Reduction Tool** \. An open source Revit-based tool that enables design teams to quickly analyse and clearly visualise the embodied carbon emissions of different building components and construction material options at any time during the design process. <https://www.hawkinsbrown.com/services/hbert>

SUPPLY CHAIN SUSTAINABILITY



Thank you!

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