PLAN ZERO
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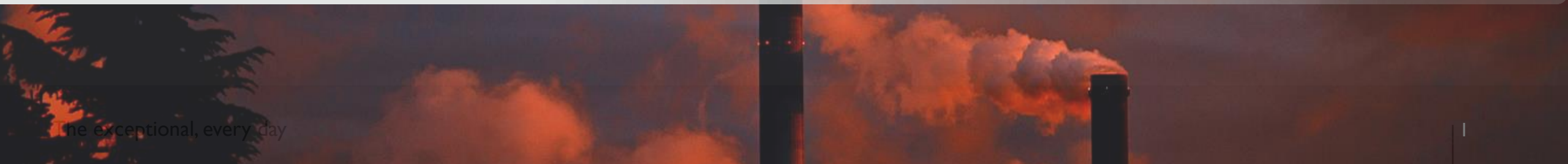
The Carbon Challenge, how your organisation can beat the rising cost of carbon

planzerocarbon.com

@Mitie Plan Zero



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Welcome

Mike Sewell
Plan Zero Director, Mitie

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Agenda

08:30-08:40 | Mike Sewell – Mitie: Welcome

08:40-08:50 | Alan Whitefield – Mitie: The price of carbon and what it means

08:50-09:00 | Stephanie Parker – BEIS: Developing policy landscape for commercial and industrial buildings

09:00-09:10 | Tim Sullivan - Rolls Royce: Reducing our carbon impact

09:10-09:20 | Sam Waugh - University of Sussex: Our plan to reach net zero by 2035

09:20-09:30 | Mike Sewell – Mitie: A whole estate approach to eliminate carbon

09:30-10:00 | Discussion/Q&A

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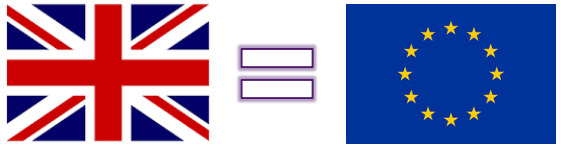
The price of carbon and what it means

Alan Whitefield
Research Manager, Mitie

What is carbon and why is there a price for carbon?



44%

Floor @

£22

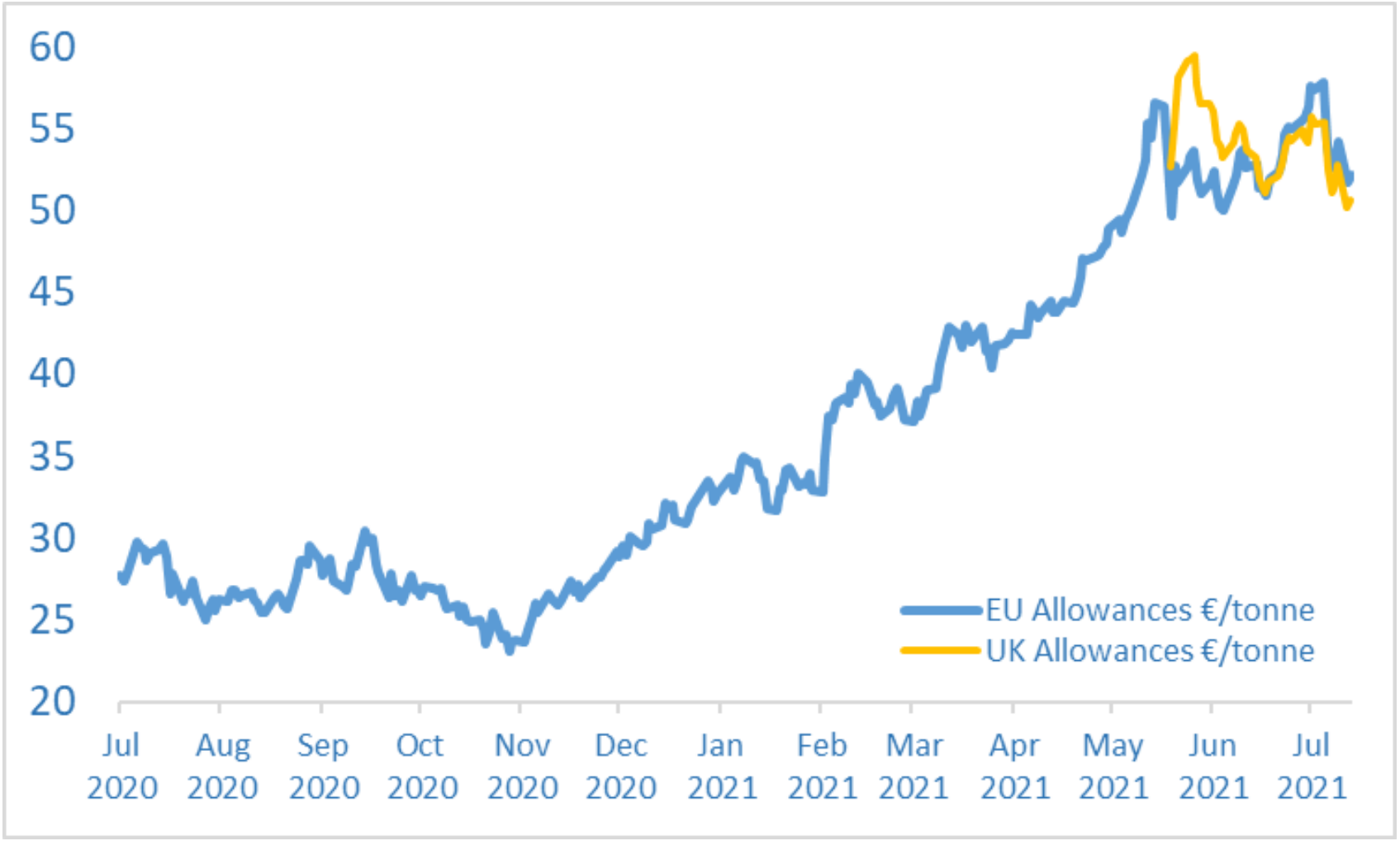
156,000,000

allowances

1000

Auction

Carbon market prices

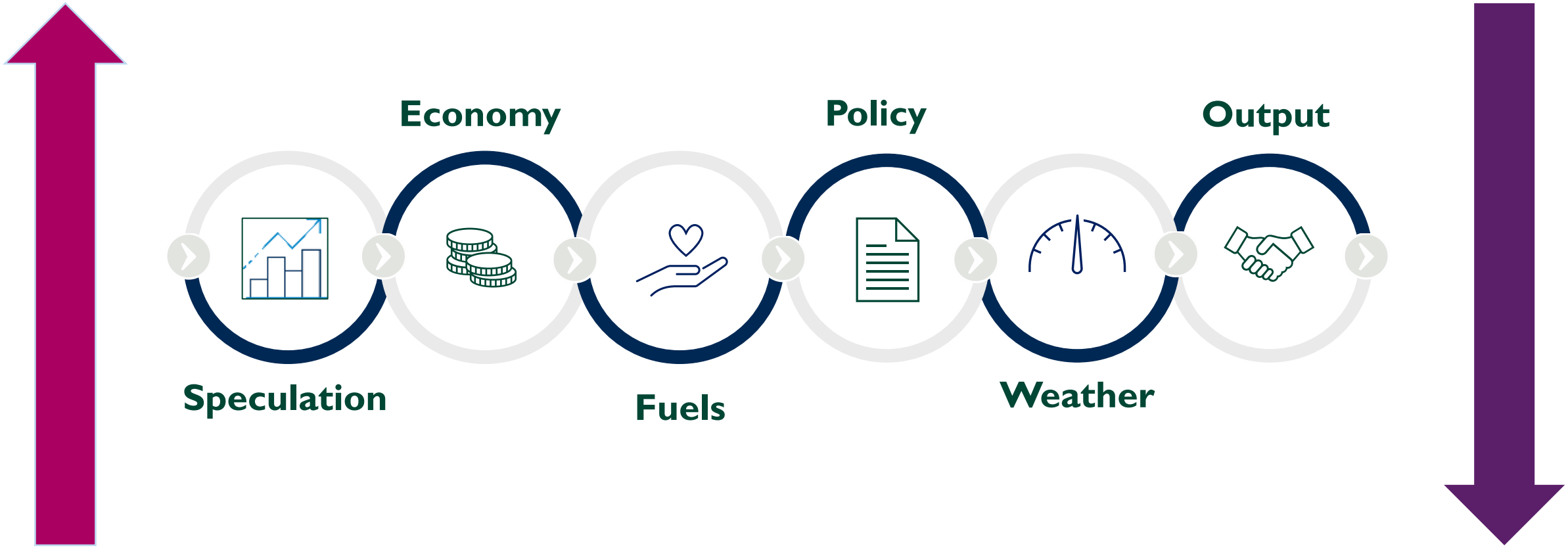


ICE EUA Carbon settlement price, Dec 20 (Jul-Dec 20) and Dec 21 (Jan-Jul 21) contracts - € /tonne

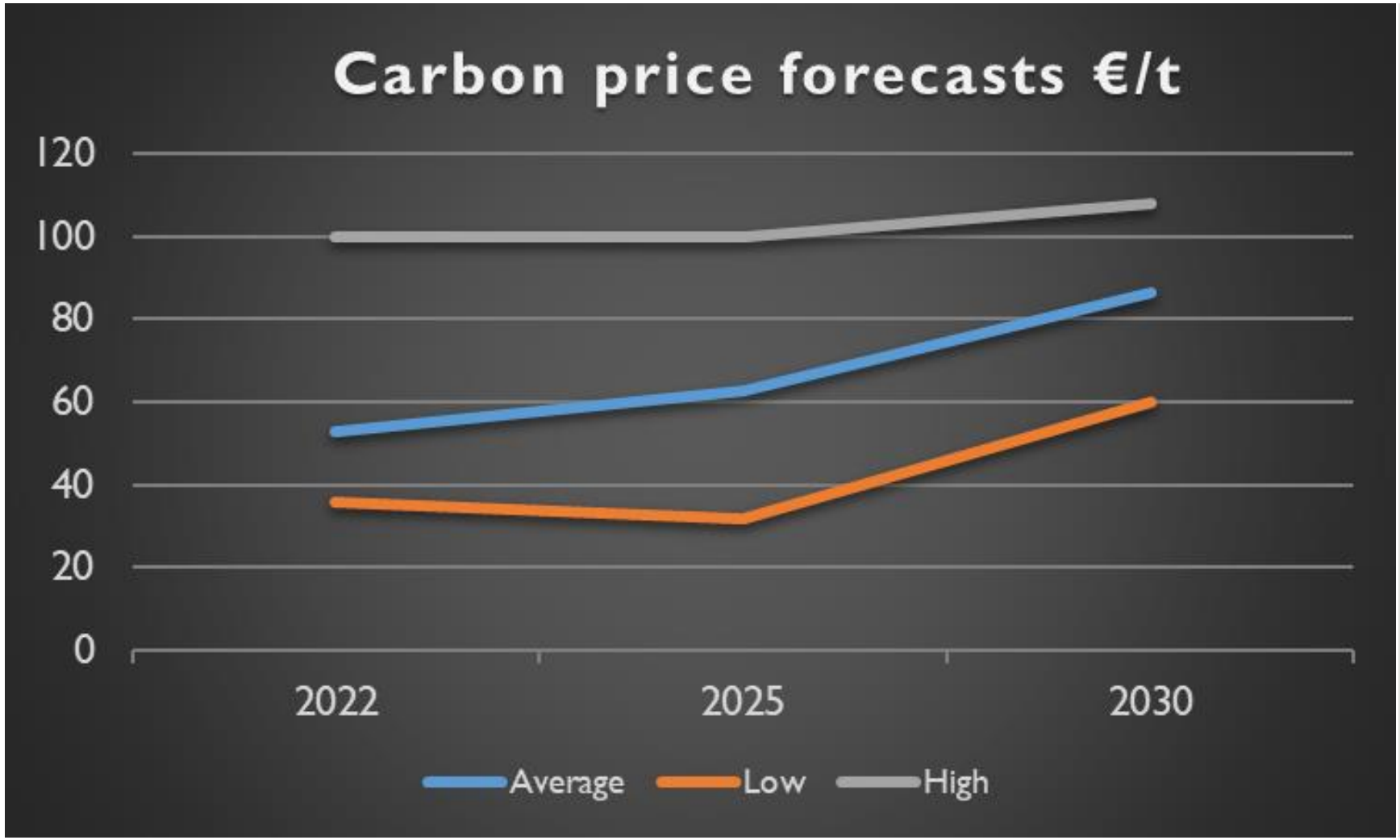
Since November, the carbon price has risen from €23 to €58/tonne

As recently as 2017, the price of carbon allowances was as low as €5/tonne

Carbon market price drivers

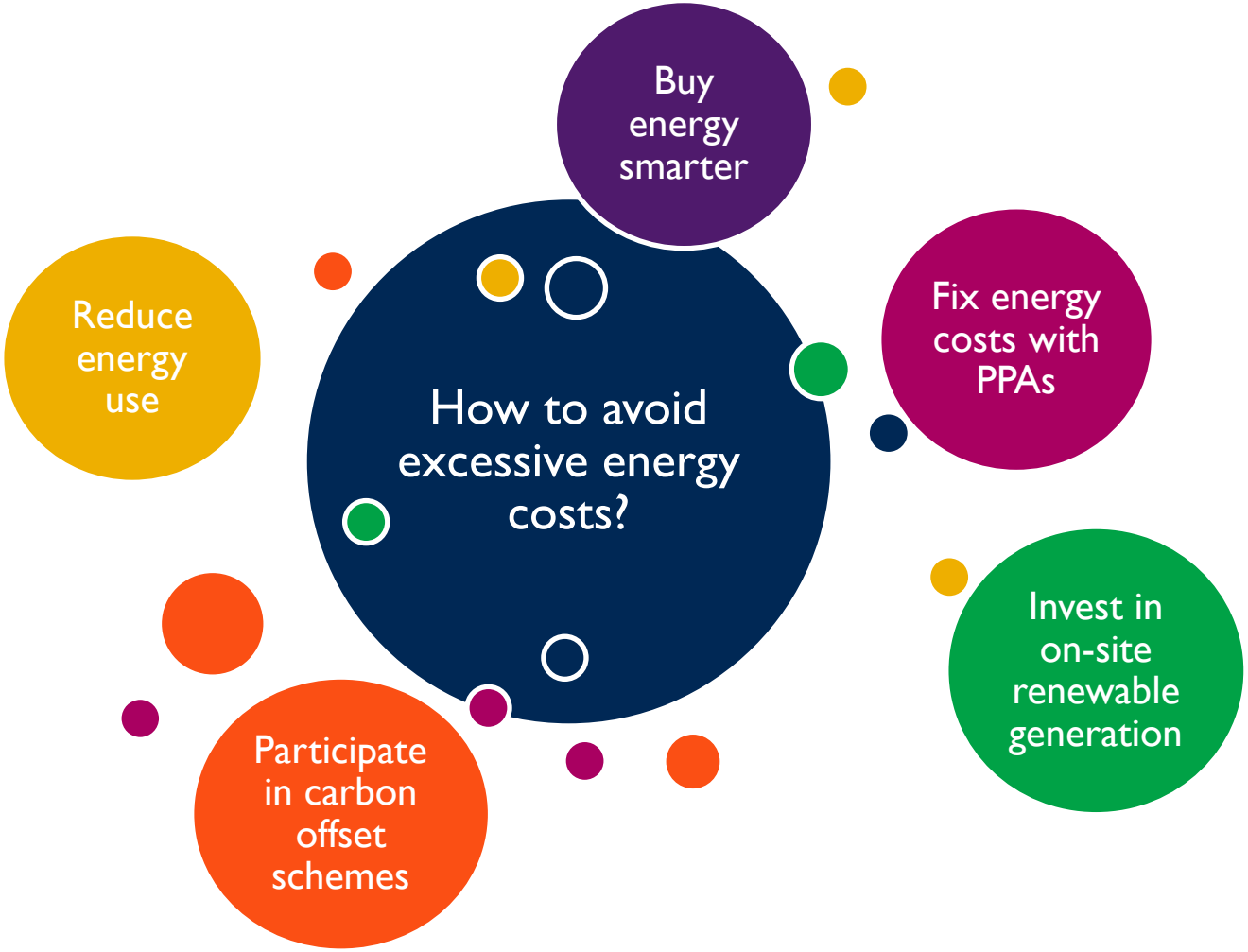


Forward price projections for carbon



Polls taken from carbon analysts offer wildly differing views on how high carbon prices could go.

What does it mean for your business?



Thank you

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Developing policy landscape for commercial buildings

Stephanie Parker

Head of Business Strategy – Energy Efficiency and Local, BEIS

Net Zero & Commercial and Industrial Buildings

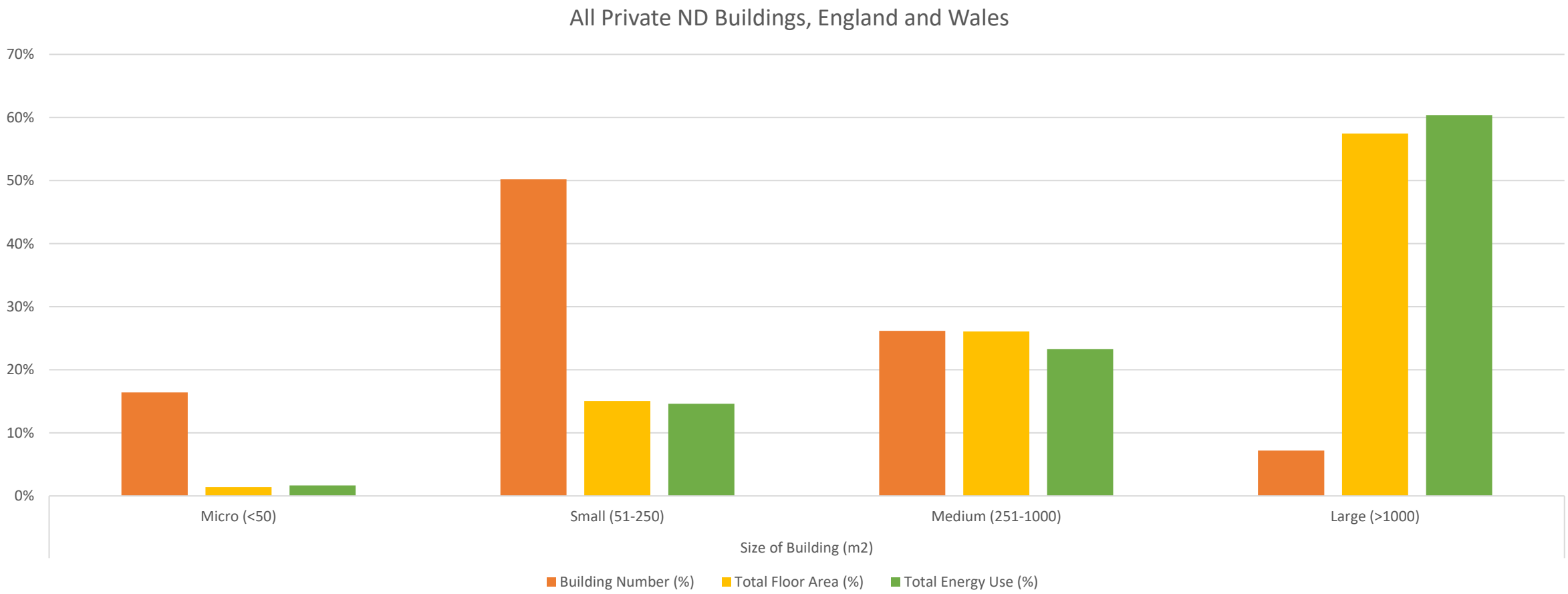
Stephanie Parker
Head of Business Strategy – Energy Efficiency and Local
Stephanie.Parker@beis.gov.uk
BEIS

"The UK has made a historic commitment to reaching Net Zero emissions by 2050 and bringing business along with us will be crucial in our transition to a low carbon economy.

As we approach COP26, I see a unique opportunity to mobilise the UK's business community and showcase UK plc as a global leader in tackling climate change."

The Rt Hon Boris Johnson MP
Prime Minister of the United Kingdom

What does the building stock look like?



Performance Based Policy Framework

REGISTER WITH SCHEME ADMINISTRATOR

ASSESSOR VISITS BUILDING TO COLLECT DATA

BUILDING IS COMPARED TO RELEVANT BENCHMARK

PERFORMANCE RATING IS GENERATED

RATING PROVIDED AND PUBLISHED ONLINE

BUILDING SUBMITS DATA ANNUALLY

ASSESSOR VISITS BUILDING EVERY FOUR YEARS

Non-Domestic PRS Regulations

- In 2019 and again this year the Government consulted on how to tighten the non-domestic private rented sector (PRS) minimum energy efficiency standards (MEES).
- We confirmed in the Energy White Paper **that Government would regulate to raise MEES to EPC B by 2030 where cost effective**. This policy is estimated to capture 85% of the non-dom rental market and should save businesses £1bn in energy bills by 2030.
- We have proposed better ways to implement and enforce the policy **with a proposed interim milestone of EPC C by 2027.**

Where else might Government regulate?

- We are considering the last remaining section of the stock, which is smaller owner occupied stock
- Government will also need to lay out it's plans to transition away from fossil fuel heating systems
- MHCLG remain the lead Department for new builds and building regulations, including the recent Future Building Standard consultation.

Key links

10 Point Plan Booklet: https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution/title

Energy White Paper: https://www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-future

Race to Zero: https://racetozero.unfccc.int/

Non-domestic National Energy Efficiency Data (NDNEED): https://www.gov.uk/government/collections/non-domestic-national-energy-efficiency-data-framework-nd-need

Introducing a National Performance-Based Rating Framework: https://www.gov.uk/government/consultations/introducing-a-performance-based-policy-framework-in-large-commercial-and-industrial-buildings

Private Rented Sector: https://www.gov.uk/government/consultations/non-domestic-private-rented-sector-minimum-energy-efficiency-standards-epc-b-implementation

For specific queries/engagement requests email businessenergyuse@beis.gov.uk

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Rolls Royce: Reducing our carbon impact

Tim Sullivan

Director, Energy & Asset Management, Rolls Royce

Rolls-Royce Sustainability & Net Zero Carbon

Tim Sullivan, Director Energy & Asset Management

July 2021

Net zero carbon for Rolls-Royce refers to the systems level reduction of value chain greenhouse gas emissions, in line with a 1.5ºC trajectory, and balancing the impact of any remaining greenhouse gas emissions with an appropriate amount of carbon removals

We are a global power group and we champion sustainable power

2020 Total Value Chain Emissions

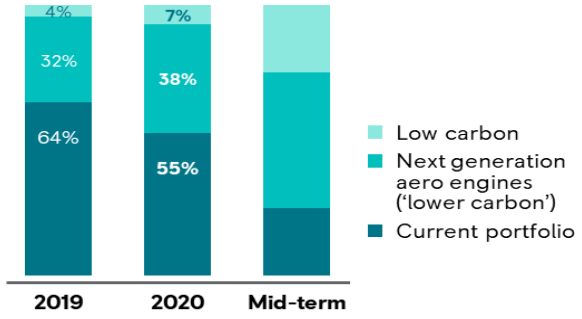
Scope 1&2 Emissions - 340 ktCO2e

Operations – 229 ktCO2e
Product Test – 111 ktCO2e

Scope 3 Emissions – 276 mtCO2e

Purchased goods and Services – 5 mtCO2e
Use of sold products – 270 mtCO2e

Accelerating focus on low carbon
Self-funded R&D



Low carbon technologies includes investments in electric, hybrid, hydrogen and nuclear solutions. Next gen aero engines primarily relates to UltraFan and future Defence engines

Our Decarbonisation Plan on a Page

We have pledged to achieve net zero carbon in our operations by 2030 and be a net zero carbon business by 2050

Current Operations emissions = **681 LHR <> SIN flights** (ICAO Carbon Calculator)

Making Rolls-Royce a net zero company	Mobilising our value chain	Decarbonising complex critical systems
2030 Achieving zero greenhouse gas emissions from our operations & facilities	**68%** Recovering and recycling 68% of material within our operations	**Pioneering new technologies** to accelerate the global transition including electrification, hydrogen, SMRs, fuel cells, battery storage & microgrids
2023 Making all in-production civil aero-engines **100% SAF** compatible	Identifying high **carbon impact** areas of our supply chain for priority intervention	Further **advancing the efficiency** of our engine portfolio through next generation technologies
2023 Have the majority of Power Systems engines ready for **sustainable fuels**	Convening our high performing suppliers to share **best practice**	**2030** **Ensuring new products are fully compatible with net zero**
Continuing our **waste action programme**	**Implementing lower carbon** solutions with logistics & transport providers	**75% of R&D** invested by 2025 in lower carbon and net zero technologies
Developing a net zero **manufacturing** strategy to reduce carbon impacts	Developing a net zero manufacturing **strategy**	Linking **executive remuneration** to the technology levers that will accelerate the net zero transition
Further investing in on-site renewable energy generation and the **purchase of renewable electricity**		**Advocating for the sector breakthrough goals** identifed by the UN Race to Zero campaign for the critical, complex systems we are part of

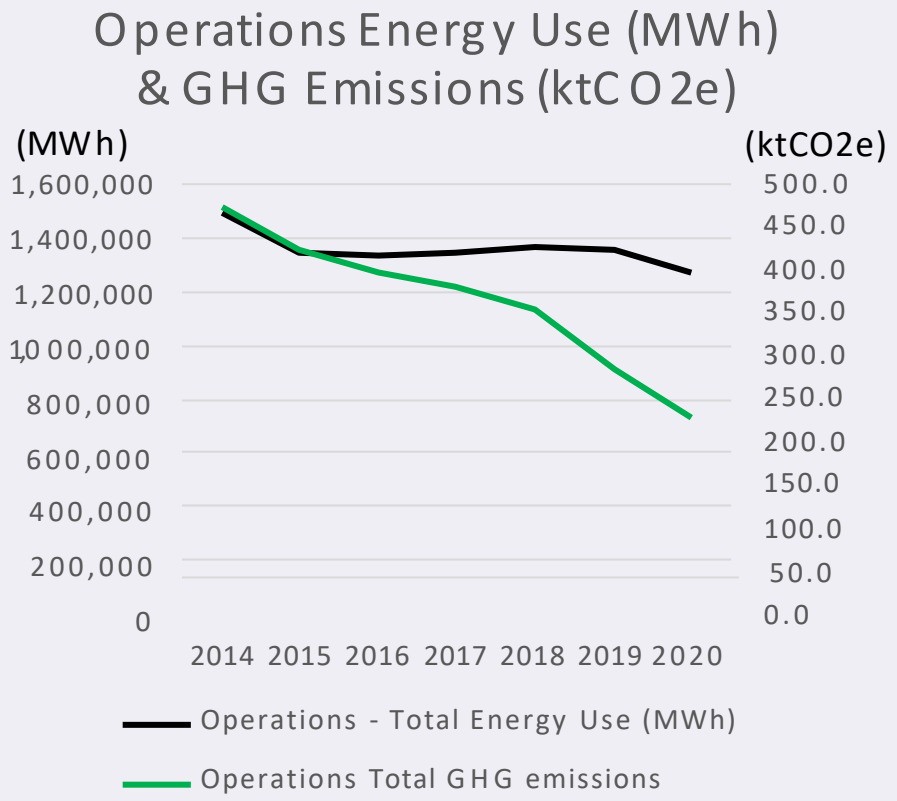
Operations Decarbonisation Progress

Key Levers

- **Investment in facilities infrastructure**
- **Partnering programmes**
- **Ensuring a balanced portfolio**

Highlights:

- 52% reduction in GHG emissions since 2014 and emissions decoupled from energy use
- Energy use broadly flat despite good business growth over the period 2014 - 2019
- Strong focus on energy management/ optimisation work benefiting from early investment in metering, automated data collection and BMS
- Solar pv & thermal, CHP, batteries and ground source heat pumps deployed creating off-grid capability across multiple sites
- Internal capital >25%IRR and external funding via PPAs & ESPCs
- Green power purchase in UK and Germany in 2018 & 2019 respectively
- Bristol site first UK site to gain EnCo accreditation in 2021 and current projects underway will make first Rolls-Royce site to be Net Carbon Zero
- Bristol GSHP Project awarded 'Energy Project of the Year' in 2018 recognising great support from MITIE and SHECo
- Rolls-Royce was awarded 'Energy Team of the Year' in 2018
- Developed fully costed road maps to Net Carbon Zero for all large sites



Hierarchy of improvement measures:

- **Optimise** the energy efficiency of our buildings and processes
- **Move away** from high carbon sources of energy
- **Generate** our own renewable / low carbon energy
- **Procure** zero carbon electricity

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University of Sussex: Our plan to reach net zero by 2035

Samantha Waugh
Sustainability Manager, University of Sussex

SUSTAINABLE SUSSEX

The Carbon Challenge – how organisations can beat the rising costs of carbon

21 July 2021

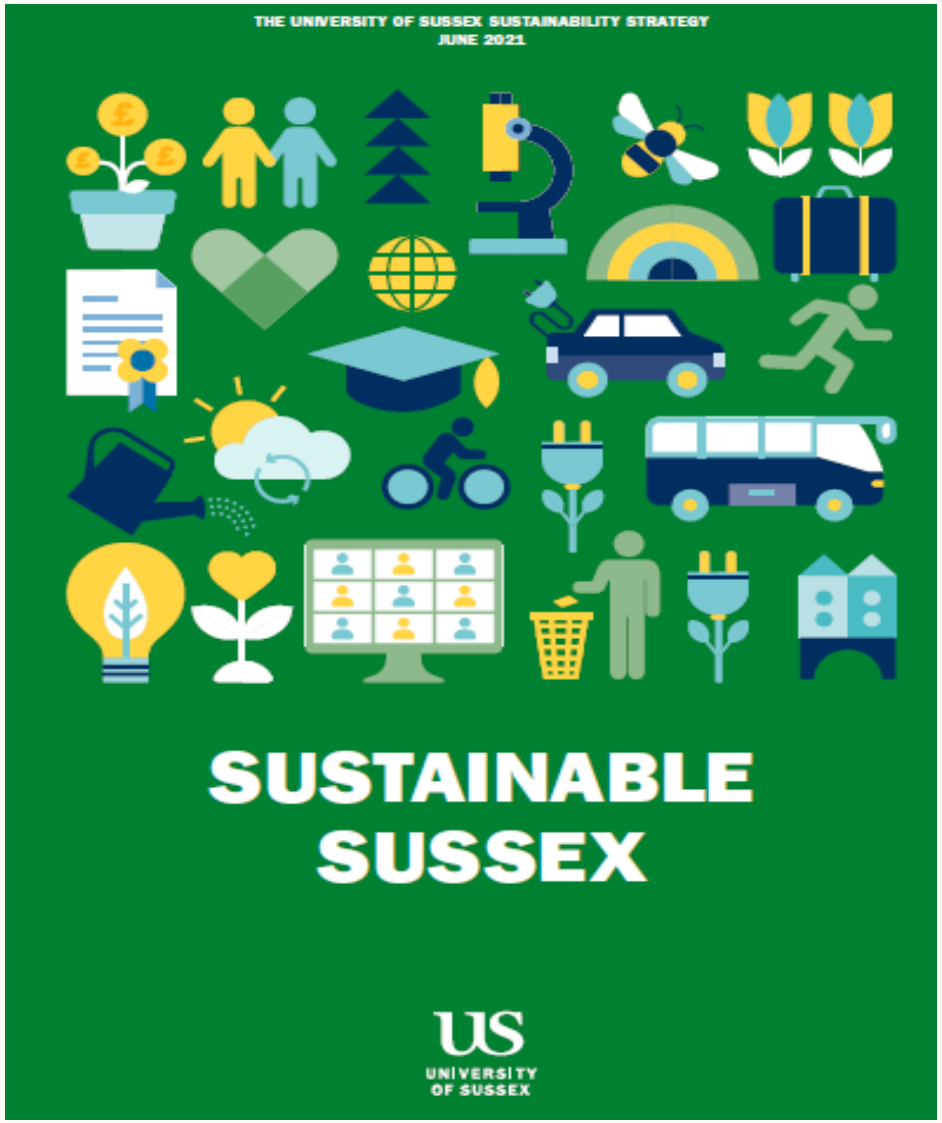
Sam Waugh (Sustainability Manager)

UNIVERSITY OF SUSSEX

Our Vision

SUSTAINABLE SUSSEX: ONE OF THE MOST SUSTAINABLE UNIVERISITIES IN THE WORLD

UNIVERSITY OF SUSSEX



Our Aims

ETHICAL EDUCATORS

- Students as partners and innovators
- Sustainability taught within all degrees
- Sustainable research practices
- Supporting equality, diversity and inclusion

DECARBONISING THE ECONOMY

- Net zero by 2035
- Excellent carbon accounting
- Decarbonised energy infrastructure
- Energy-efficient campus

Our Aims

CIVIC LEADERS AND PARTNERS

- Sustainable supply chain
- Active and sustainable commuting
- Better business travel
- Community volunteering and impact

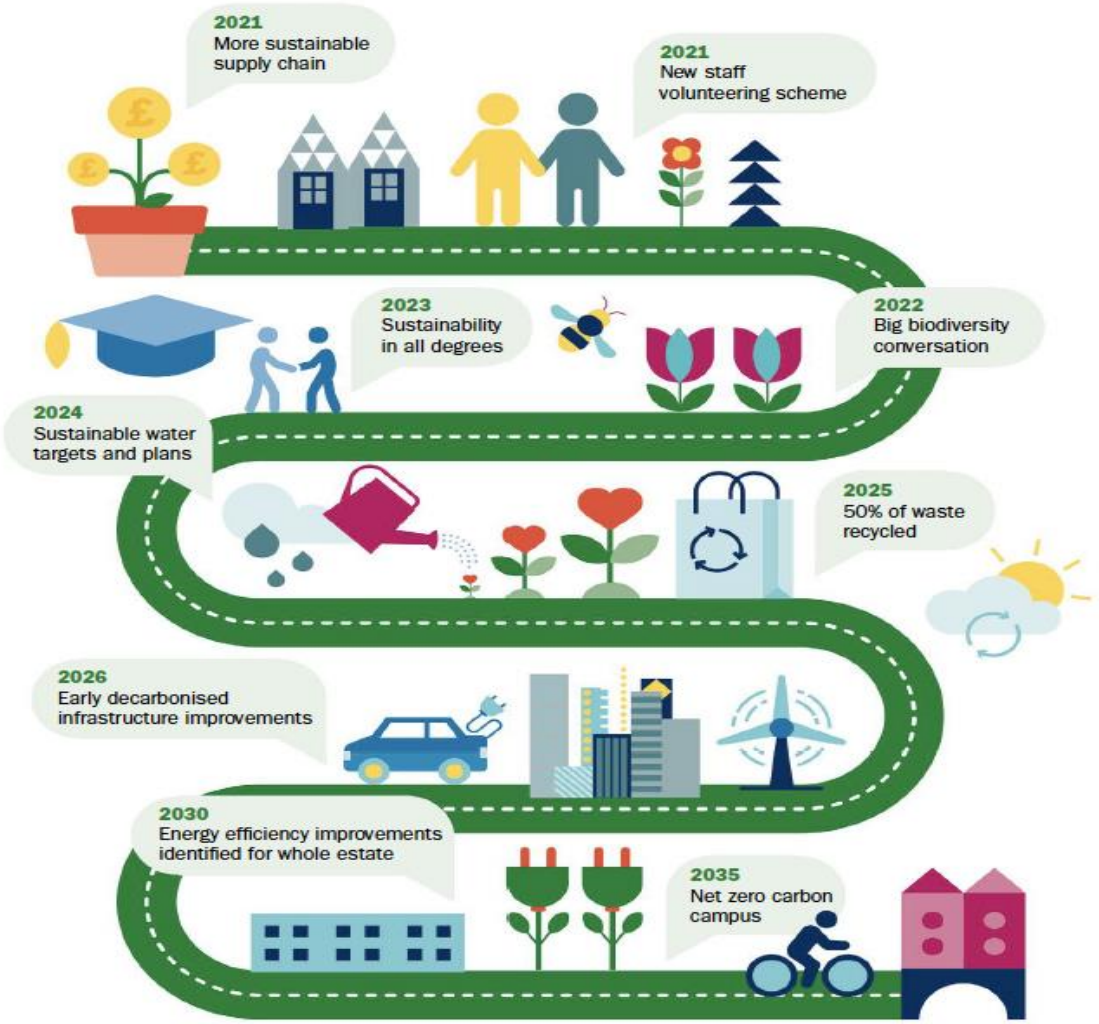
ENVIRONMENTAL CHAMPIONS

- 50% of waste recycled by 2025
- Responsible food and water production and consumption
- Biodiverse campus
- Behaviour changers

OUR ROADMAP

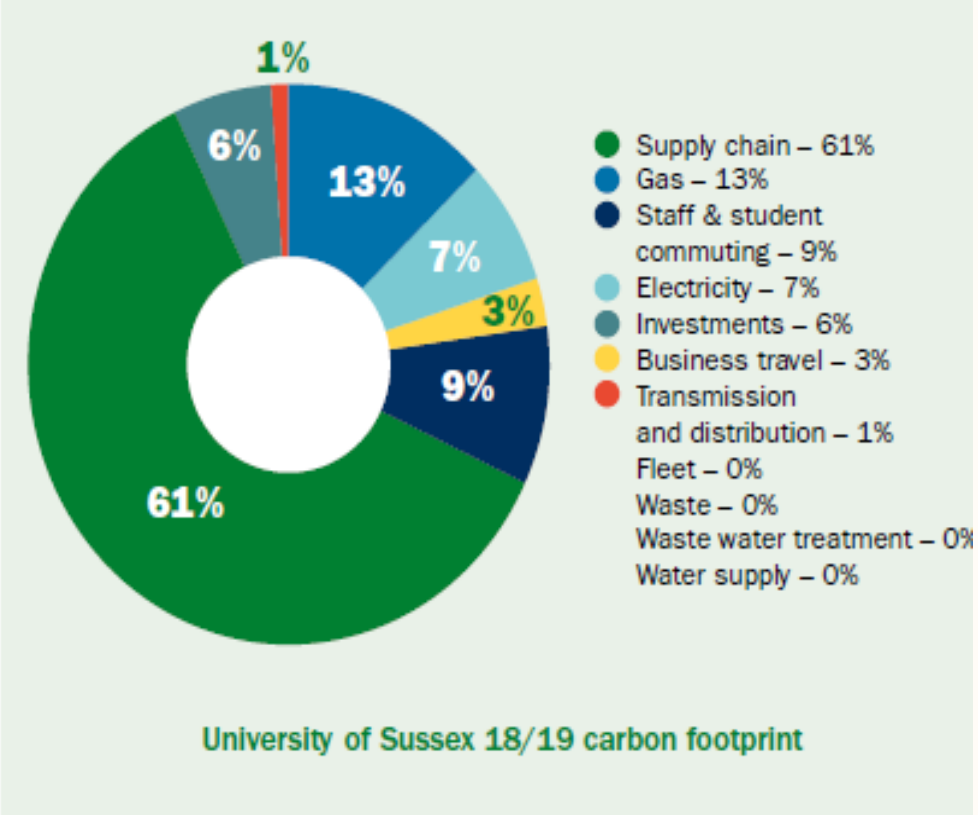
SUSTAINABLE SUSSEX

OUR SUSTAINABILITY ROAD MAP



Our Challenges

- We estimate our full 2018/19 carbon footprint to be around 100,670 tCO2e.
- Left unabated we predict a ~50% increase by 2035
- Predicted cost of reaching net zero by 2035 of ~£13.8 million less than the cost of reaching it by 2040.
- Change in mindset from what's cheapest today to cheapest over the next 14 years



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Opportunities: Four P's

THE LIVING COAST

Brighton & Lewes Downs
UNESCO World Biosphere Region

SALIX

Public Sector Decarbonisation Scheme

The scheme allows public sector bodies (PSBs) in England only to apply for a grant to finance up to 100% of the costs of capital energy-saving projects that meet the scheme criteria.

UNIVERSITY RANKINGS BY SUBJ

1st

world for Development St

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01-12 NOV 2021
GLASGOW
COP26
IN PARTNERSHIP WITH ITALY

Spotlight: Procurement

9 Sustainable Procurement Principles

- 3 Economic
- 3 Environmental
- 3 Social

Net zero target and action plan mandatory for non SMEs

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Spotlight: Investments

2018: We selected *Liontrus*t as an investment manager

~29% of the fund is invested in companies focused on better resource efficiency

Investments in this fund emit 76.1% less carbon emissions than the market benchmark (2020 Analysis, Scope 1 and 2 emissions only)

The fund does not invest in Fossil Fuels

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Spotlight: Infrastructure

Begin to invest in lower carbon infrastructure by December 2026, producing feasibility studies by December 2021 on:

- Replacement of our Combined Heat and Power Plant with a low carbon alternative
- Expanding our renewable energy production
- Creating a new sustainable transport hub
- Upgrading electric vehicle, scooter and bike charging infrastructure

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Spotlight: Energy Efficiency

- Producing investment opportunity analysis of the 20% of our most poorly performing buildings and business cases for improvements by 2023
- Developing minimum environmental product standards for the furnishings and fixtures that we buy for our estate by December 2022
- Identifying if there is a business case to move beyond BREEAM Excellent construction standards for new buildings by December 2022

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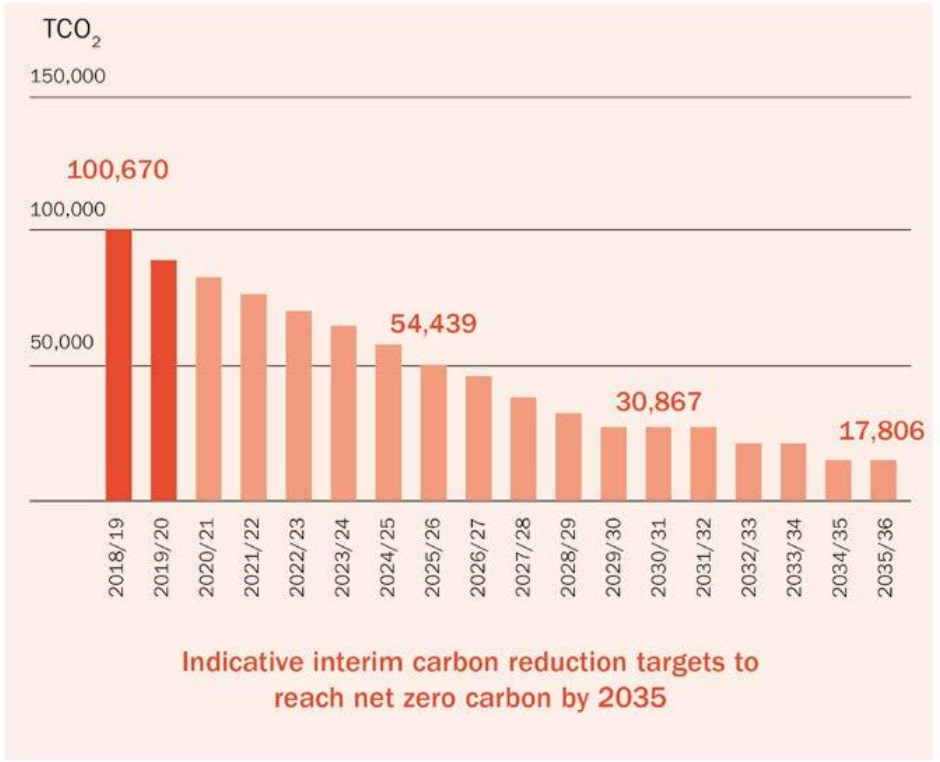
KPI

Achieve net zero by 2035 with indicative interim targets for 2025 and 2030



Indicative interim carbon reduction targets to reach net zero carbon by 2035

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Thank you!

Contact: s.waugh@sussex.ac.uk

https://www.sussex.ac.uk/about/sustainable-university

UNIVERSITY OF SUSSEX

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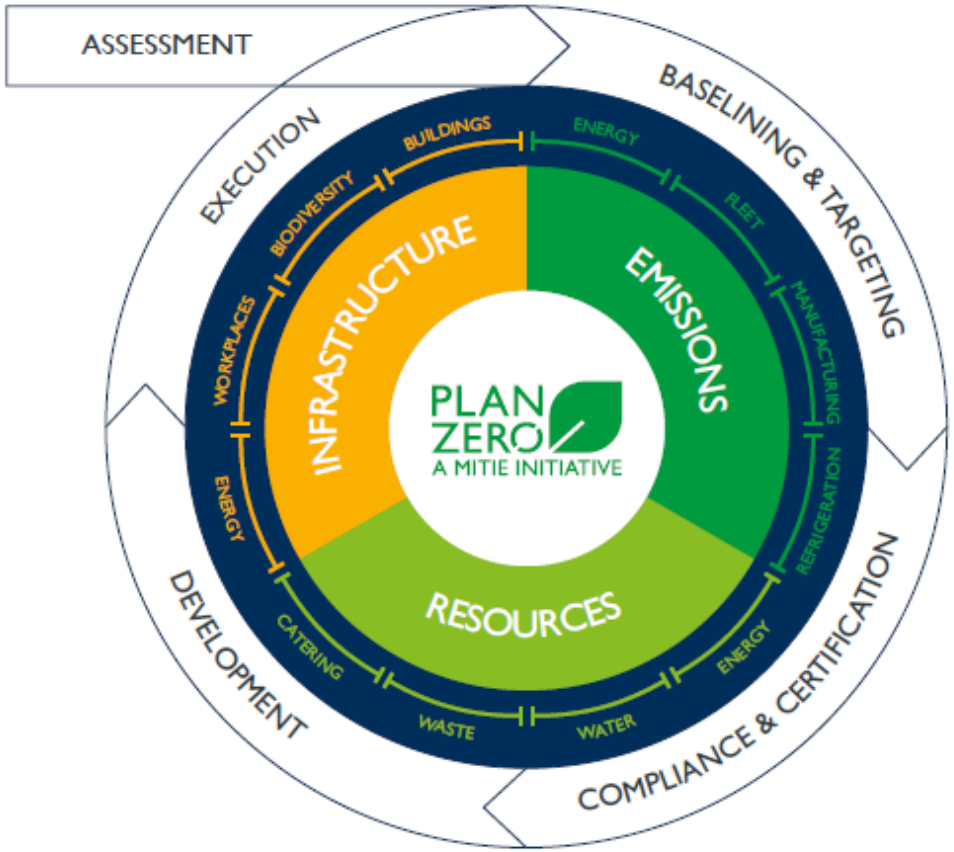
A whole estate approach to eliminate carbon

Mike Sewell
Plan Zero Director, Mitie

Plan Zero: Delivering Decarbonisation

Our operating model follows a simple A-E methodology with three key pillars drawing expertise from within Mitie.



Infrastructure

The physical and human infrastructure that keeps an organisation operational

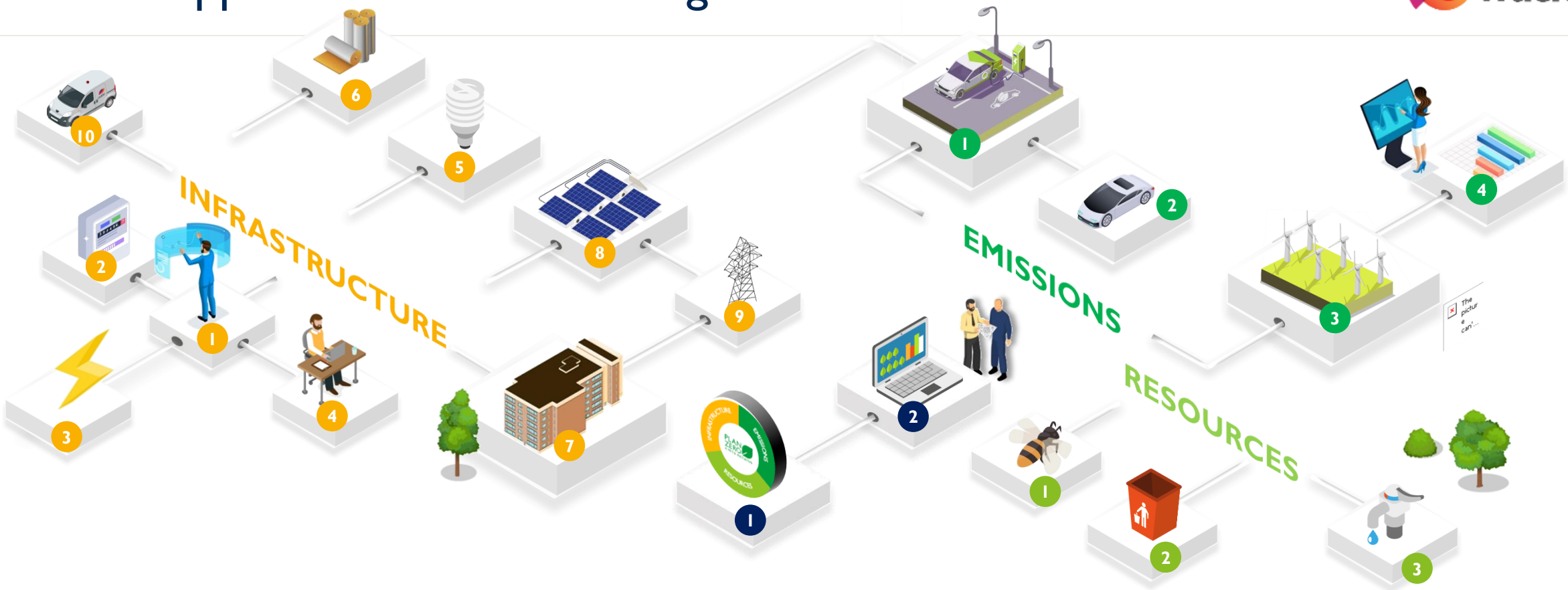
Resources

Essential resources used to keep an organisation operational

Emissions

Production, operational and logistical undertakings contributing to an organisations emissions.

A holistic approach to decarbonising



1 NET-ZERO PATHWAY
2 CARBON ENVIRONMENT MANAGEMENT SYSTEM

INFRASTRUCTURE

1 CONNECTIVITY & MONITORING
2 CONTROLS & METERING
3 OPTIMISE ENERGY CONSUMPTION
4 WORKPLACE COMFORT
5 LOW CARBON SOLUTIONS
6 FABRIC & INSULATION
7 RENEWABLE HEATING & COOLING
8 SOLAR PV
9 POWER TO GRID
10 MAINTENANCE VISITS

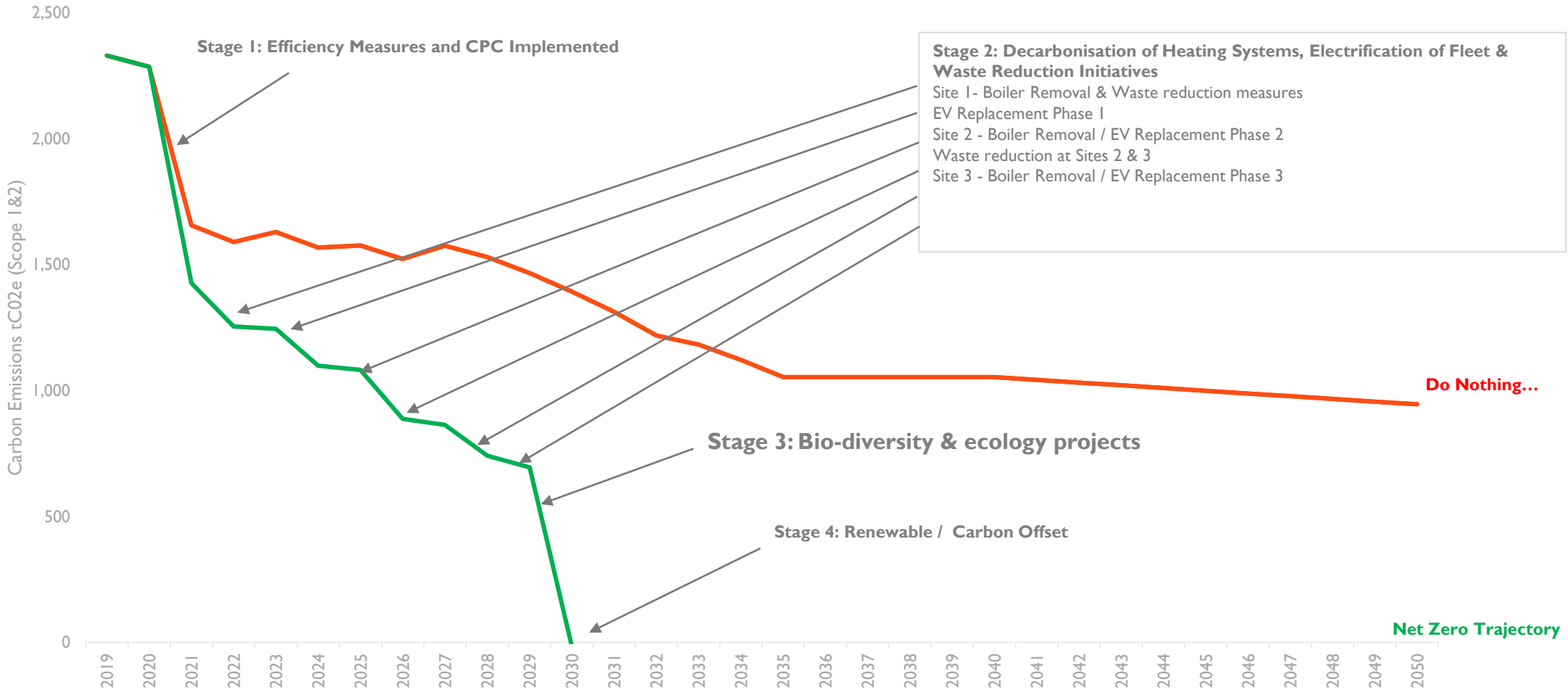
EMISSIONS

1 EV CHARGING INFRASTRUCTURE
2 ELECTRIC FLEET
3 100% RENEWABLE ENERGY
4 SMART ENERGY PROCUREMENT

RESOURCES

1 INCREASE BIODIVERSITY
2 REDUCE WASTE
3 CONSERVE WATER

Net Zero for Zero Cost?



We Have Heard Today

We need to De-carbonise – 4P's

Pocket

Public

Policy

Planet

And How It Can Be Made To Happen

We are the first generation in history to know that we are destroying the planet….

and probably the last to be able to do anything about it!

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Q&A

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Thank you

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Speaker Bio's

Tim Sullivan - Director, Energy & Asset Management, Rolls Royce

Tim is responsible for the delivery of a global energy and carbon management strategy and programme that will deliver net carbon zero operations within Rolls-Royce by 2030. He also leads the asset management team that look after the building and services infrastructure across the global property portfolio. Tim is a fellow of the Institute of Directors and has presented many papers at international conferences on the importance of focussed effort on energy and carbon management in a manufacturing environment.

Stephanie Parker, Head of Business Strategy – Energy Efficiency and Local, BEIS

Steph Parker leads a policy team in the Department for Business Energy and Industrial Strategy and has been making policy in Central Government for 12 years. She has been in her current role which is focussed on decarbonising commercial and industrial buildings for about two and half years, and is working with her team of policy makers, economists, statisticians and legal advisors to develop new laws and financial support schemes that will help businesses transform their buildings in line with the Government's Net Zero target.

Speaker Bio's

Mike Sewell, Plan Zero Director, Mitie

Mike has national and international experience in leading, developing and providing Sustainability Management, Carbon Reduction and Energy Management Services at both a strategic and tactical level. Mike by profession is a Chartered Quantity Surveyor (RICS) as well as a Fellow of the Energy Managers Association (EMA) and an Incorporated Member of the CIOB. He is also a Trustee of a Multi Academy Trust, a School Governor and Parish Councillor. In each of these areas he leads on the sustainability & carbon management agendas.

Alan Whitefield, Energy Markets Research Manager, Mitie

Alan has been analysing and trading in energy markets for over 20 years working for companies such as EDF, Eon, and Ineos. He has advised producers and consumers across Europe on wholesale market pricing, procurement & hedging, and emerging energy trends.

Speaker Bio's

Samantha Waugh, Sustainability Manager, University of Sussex

Sam has an MSc in Global Politics and spent most of her career working in the Civil Service, where she regularly advised Ministers in Whitehall and Westminster in various roles, including Head of International Relations and Trade Policy, Energy Efficiency Policy, and Biofuels Policy. She also worked as the Organisational Effectiveness and Innovation Manager at the Department for Transport before joining Sussex in 2020.