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OxFutures >>

# OxFutures II Conference

Friday 27 September, 2019



*Cherwell*  
DISTRICT COUNCIL  
NORTH OXFORDSHIRE

[www.oxford.gov.uk](http://www.oxford.gov.uk)



OXFORD  
BROOKES  
UNIVERSITY



# Welcome

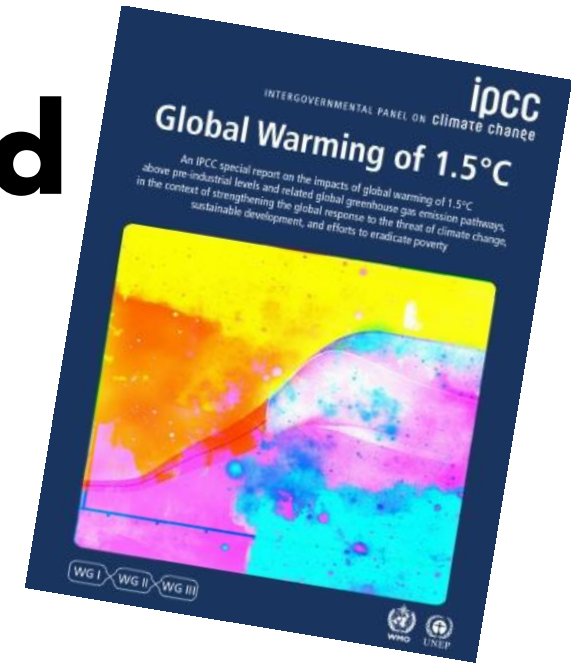
Dr Barbara Hammond MBE  
CEO Low Carbon Hub



# Climate emergency declared

Need to cut carbon emissions. And faster than we thought.

- Stark warning from IPCC report
- Global Climate Strikes
- Kids Climate Strikes
- Oxfordshire Councils declare climate emergency
- Oxford City Council first to convene Citizen's Assembly
- Committee on Climate Change Report – how to reach net zero



# Growing Oxfordshire's Low Carbon Economy

- Support SMEs across Oxfordshire to improve energy efficiency
- Bring new smart energy products and services to market
- Increase knowledge transfer from universities to business





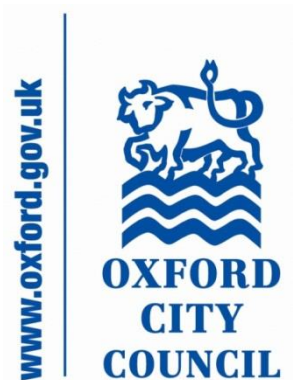
# Delivery partners



OXFORD  
BROOKES  
UNIVERSITY



**108**  
**SMALL BUSINESSES**  
**SUPPORTED**



# By the end of Year 2 we have delivered...



**80**  
**ENERGY**  
**AUDITS, THAT**  
**IDENTIFIED...**



**551**  
**ENERGY SAVING**  
**RECOMMENDATIONS**  
**OF WHICH...**



**40%**  
**ARE COMPLETE,**  
**AND A FURTHER**  
**35%**  
**ARE PLANNED\***



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# Financial support to...

14 small businesses for energy efficiency improvements

6 small businesses for innovation grants

**£27,235** energy efficiency grants awarded

**£117,966** innovation grants awarded

**£24,720** additional matched funding for  
low carbon community projects







www.oxfutures.org

"Thank you to you and your team for helping us put in these new windows in our Middle Dormitory. They look fantastic and are such a great improvement on our site."

Hill End Centre



"Our gas bills have plummeted and our electricity bill has hardly budged upwards so it is both financially sensible as well as environmentally beneficial."

Giles Dobson  
Owner of The Folly Restaurant



"Our experience is that electric vessels are easier to maintain, have much lower fuel costs and, due to their almost silent running, provide a greatly enhanced experience for passengers."

Giles Dobson  
Owner of Oxford River Cruises



## Innovation project to reduce energy use in large buildings

### ECOSYNC

GRANT: £13,000

EcoSync have successfully applied to OxFutures for funding to develop their technology that will aim to reduce the energy consumption and carbon footprints of buildings by 40%. Their solution: stop heating empty rooms.



Lady Margaret Hall (pictured) have installed EcoSync technology

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# OxFutures Project – Eligibility

- Under 250 staff
- Turnover under €50 million per year
- Balance sheet under €43 million per year

[www.oxfutures.org](http://www.oxfutures.org)



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# The Real Climate Emergency: lessons from the IPCC Special Report on 1.5°C

Myles Allen

Environmental Change Institute, School of Geography and the Environment and  
Department of Physics

University of Oxford





# Are we in a “climate emergency”?



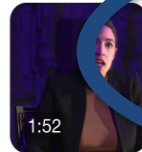
**Alexandria Ocasio-Cortez** ✓  
@AOC

Follow

For some reason GOP seems to think this is a gaffe, but it's actually a generational difference.

Young people understand that climate change is an existential threat: 3,000 Americans died in Hurricane María.

The UN says we've got 12 years left to fix it:  
[amp.theguardian.com/environment/20...](https://amp.theguardian.com/environment/2019/jan/22/climate-emergency)



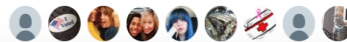
**Tom Elliott** @tomselliott

.@AOC on millennials and social media: "We're, like, the world is going to end in 12 years if we don't address climate change"

Show this thread

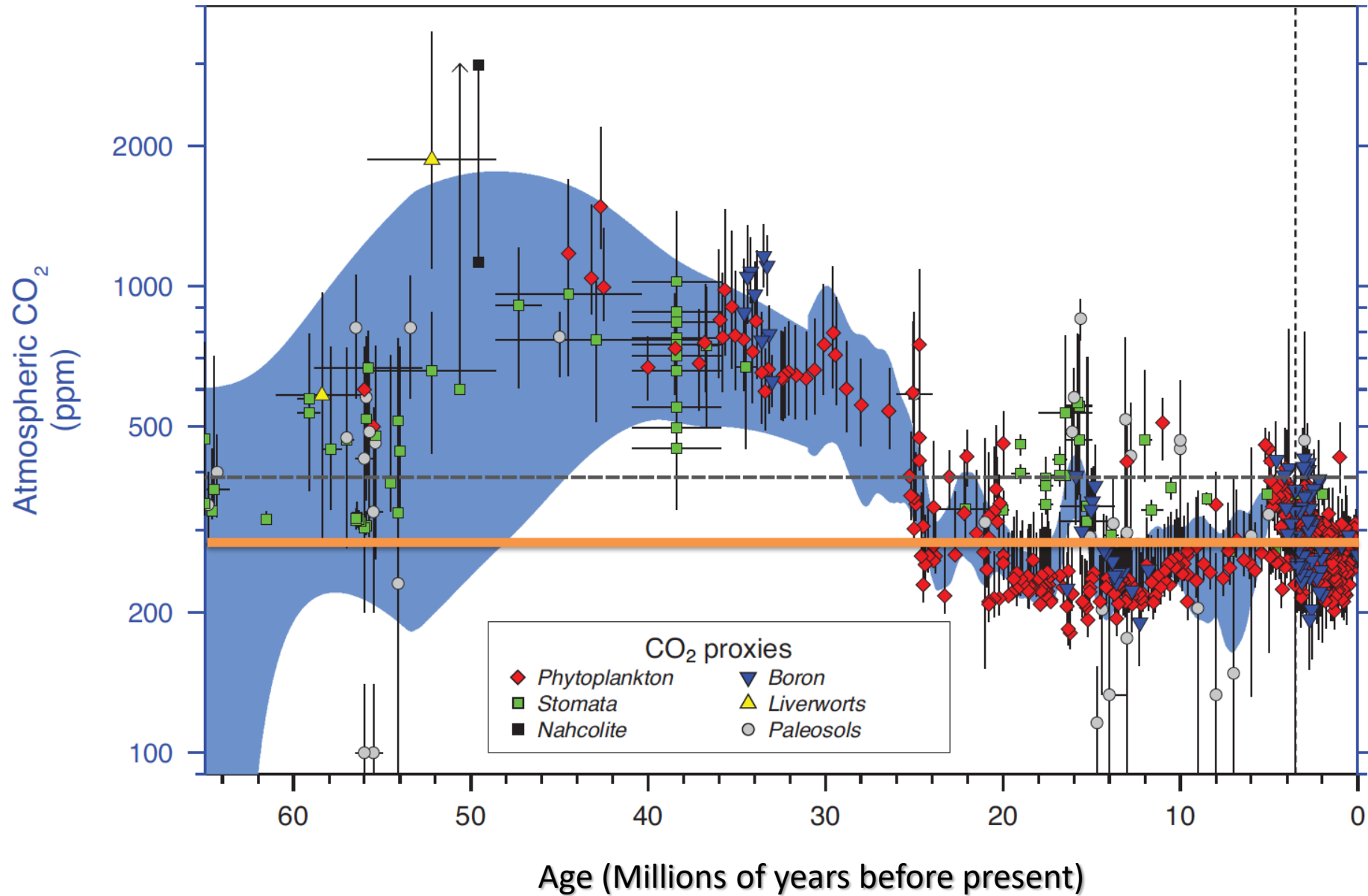
6:43 AM - 22 Jan 2019

7,323 Retweets 33,166 Likes





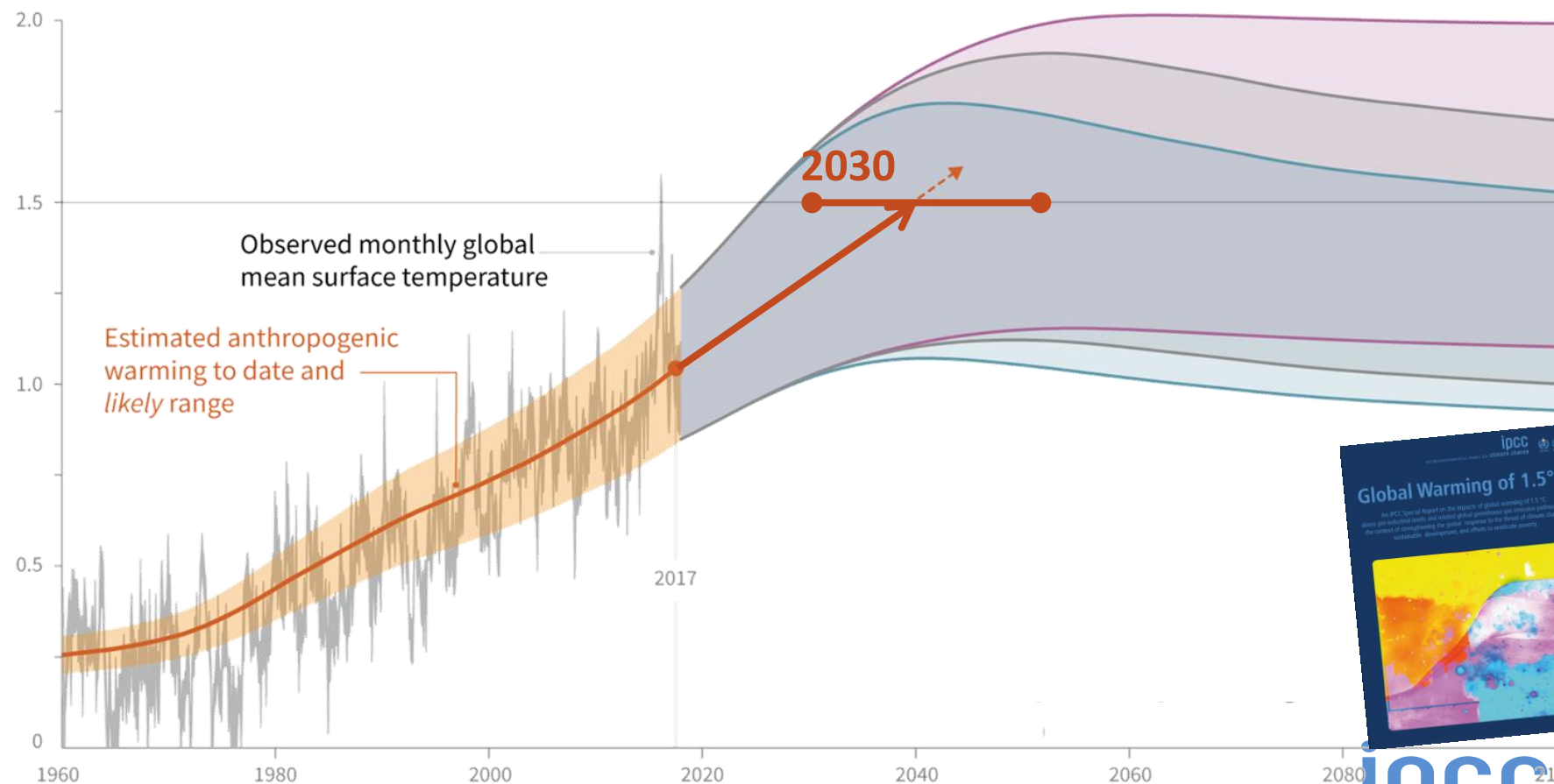
# On geological timescales, the answer is "yes"



# IPCC: “Global warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate.”

## a) Observed global temperature change and modeled responses to stylized anthropogenic emission and forcing pathways

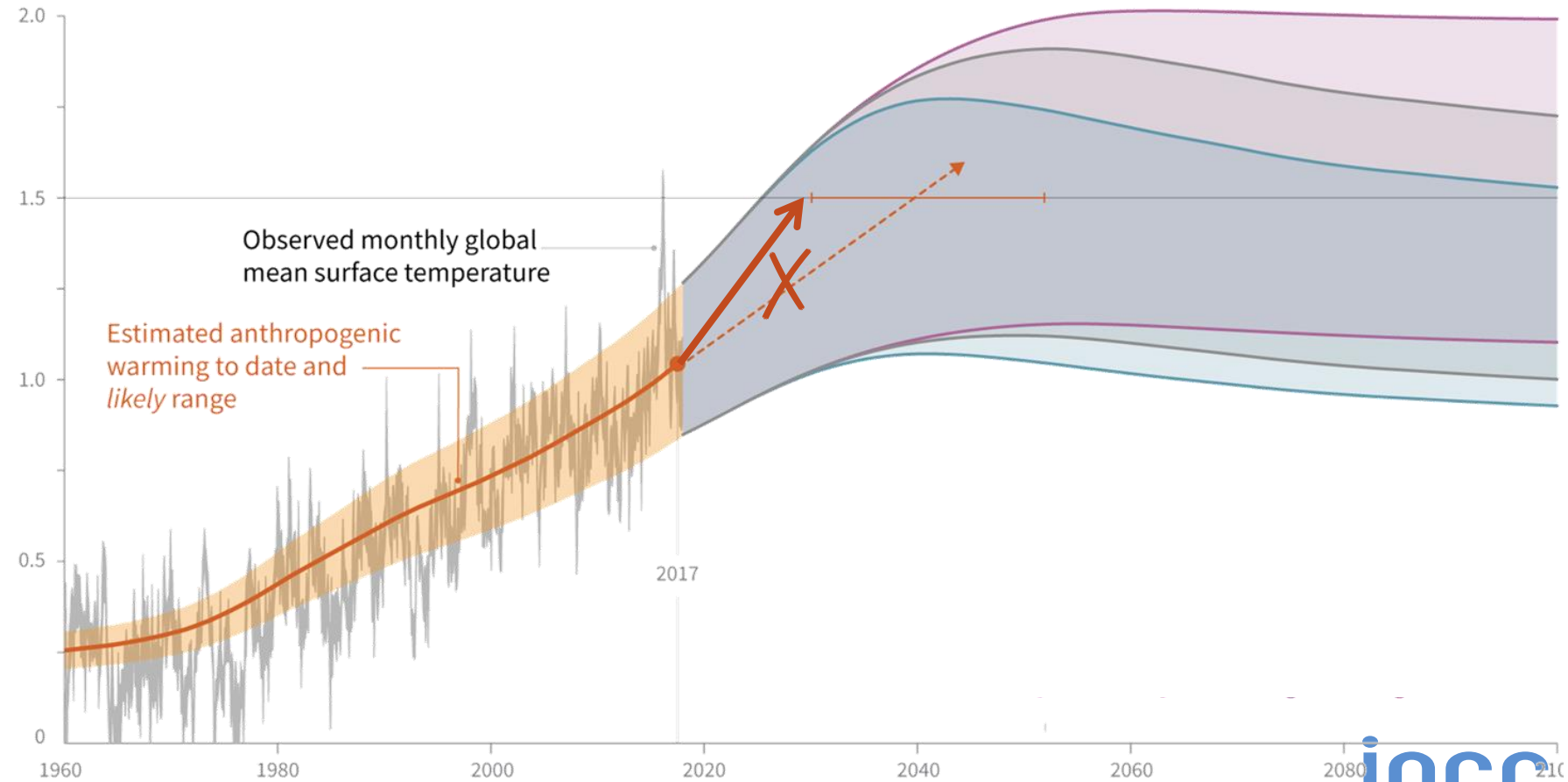
Global warming relative to 1850-1900 (°C)



# IPCC: IPCC is not predicting a warming of 0.5°C in 12 years

## a) Observed global temperature change and modeled responses to stylized anthropogenic emission and forcing pathways

Global warming relative to 1850-1900 (°C)



# So far, global warming has proved remarkably predictable

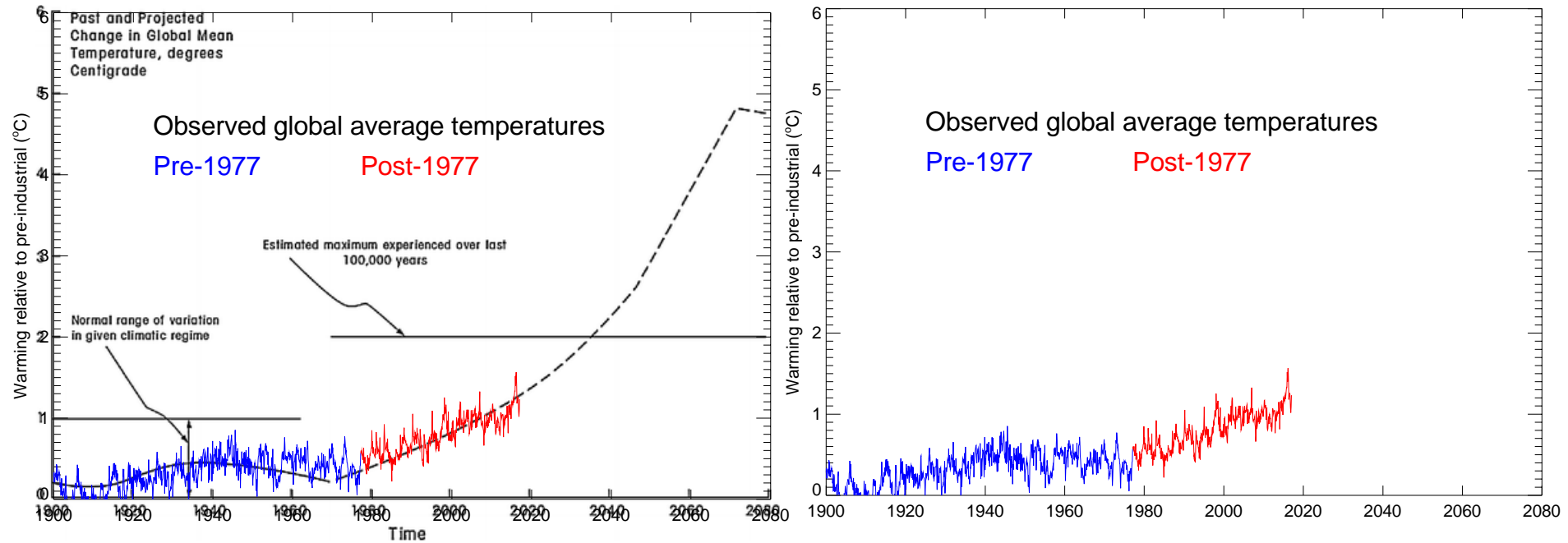
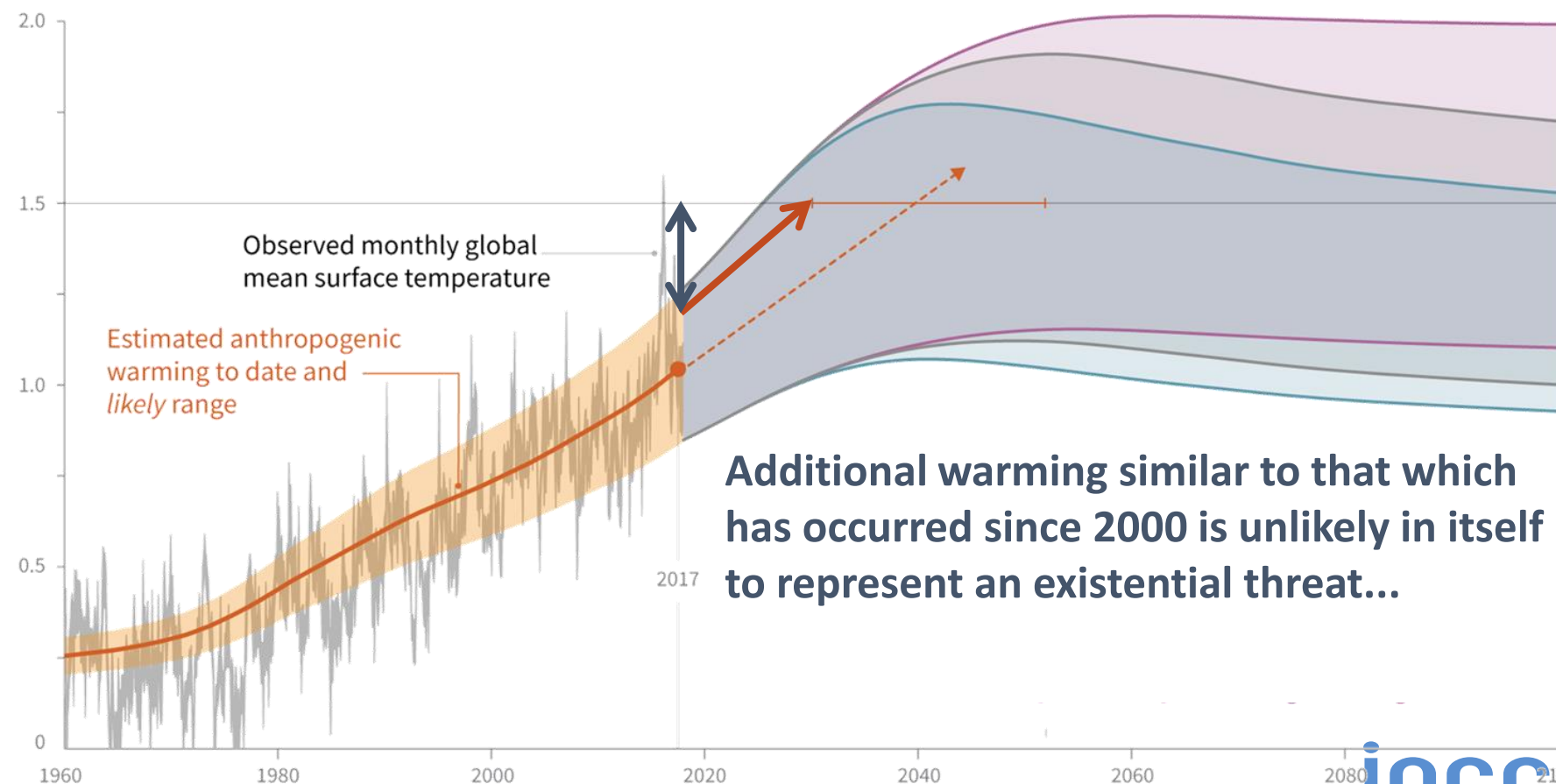


Figure 1 from William D. Nordhaus, "Strategies for Control of Carbon Dioxide", Cowles Discussion Paper 477, January 6, 1977

# IPCC: Global warming could reach 1.5°C by 2030 if it is already at 1.2°C and increasing at 0.25°C per decade

## a) Observed global temperature change and modeled responses to stylized anthropogenic emission and forcing pathways

Global warming relative to 1850-1900 (°C)

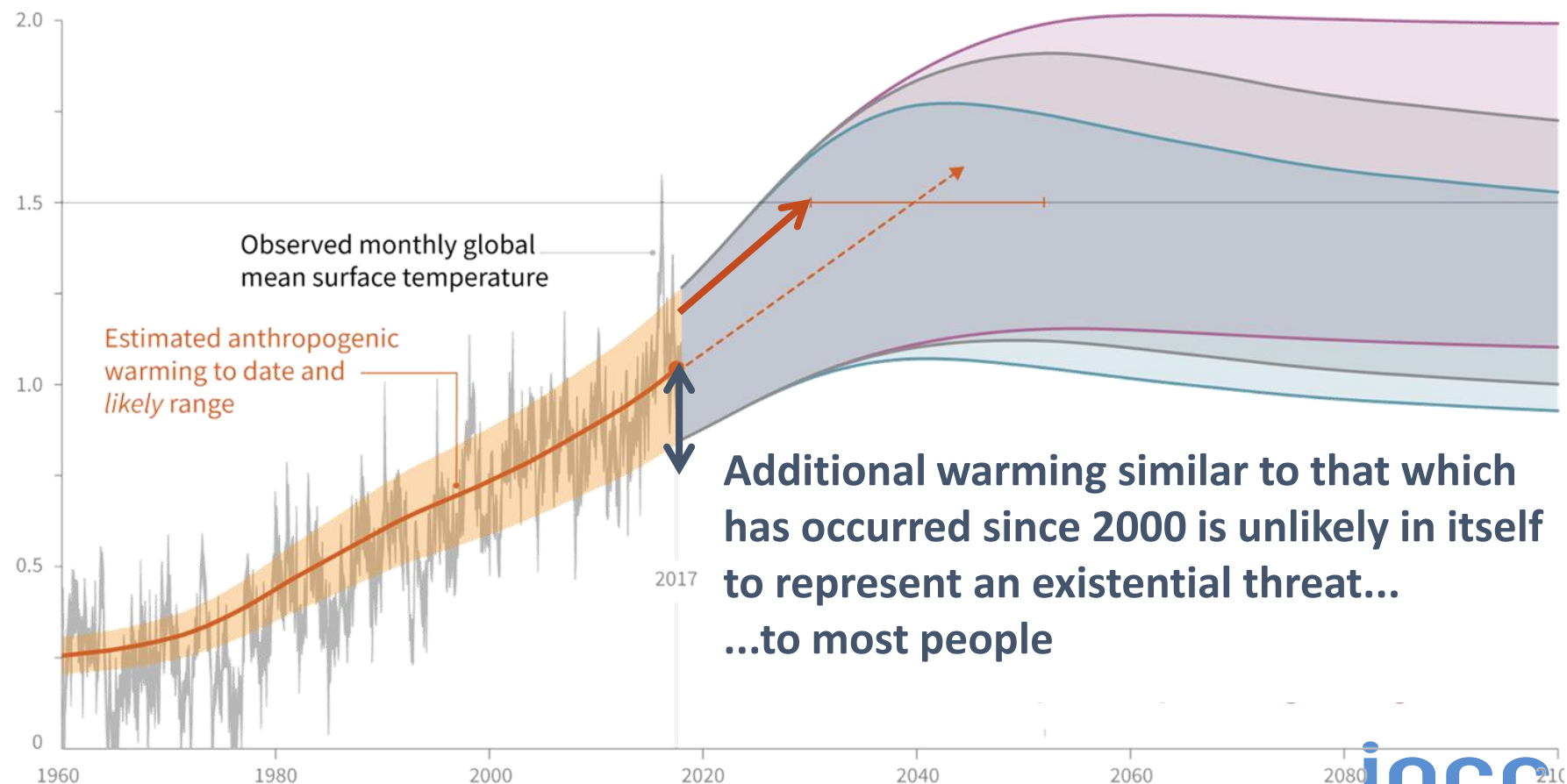


**Additional warming similar to that which has occurred since 2000 is unlikely in itself to represent an existential threat...**

# IPCC: Global warming could reach 1.5°C by 2030 if it is already at 1.2°C and increasing at 0.25°C per decade

## a) Observed global temperature change and modeled responses to stylized anthropogenic emission and forcing pathways

Global warming relative to 1850-1900 (°C)



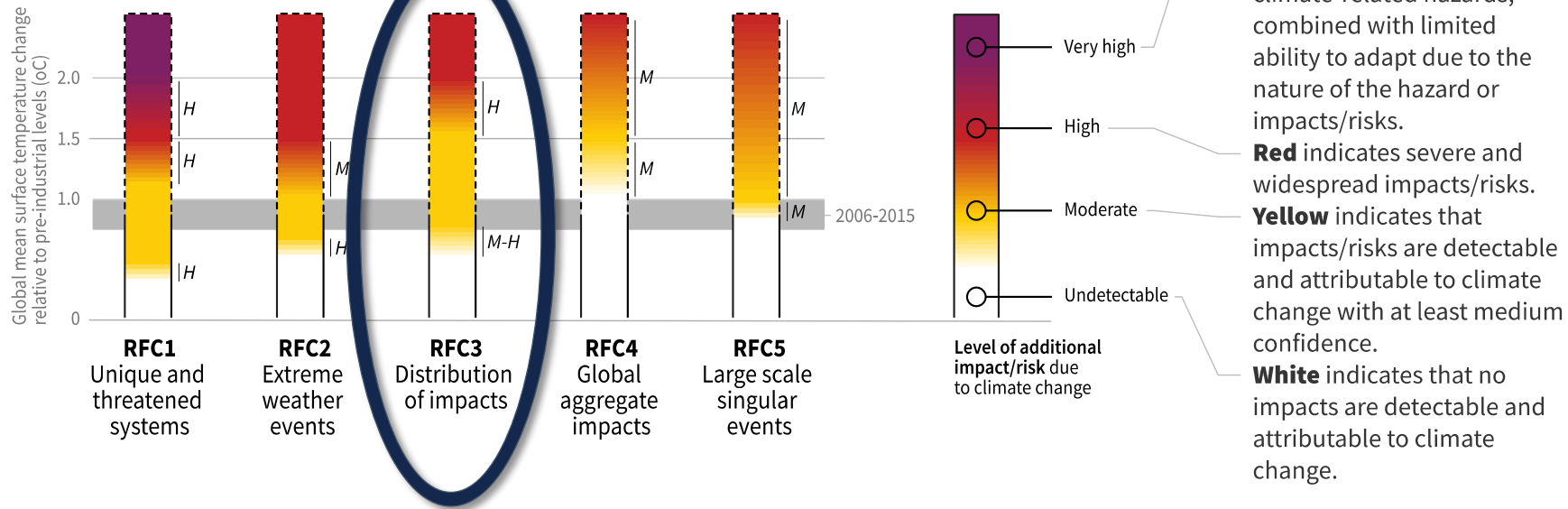
**Additional warming similar to that which has occurred since 2000 is unlikely in itself to represent an existential threat...  
...to most people**



# IPCC: “Poverty and disadvantage are expected to increase in some populations as global warming increases”

Five Reasons For Concern (RFCs) illustrate the impacts and risks of different levels of global warming for people, economies and ecosystems across sectors and regions.

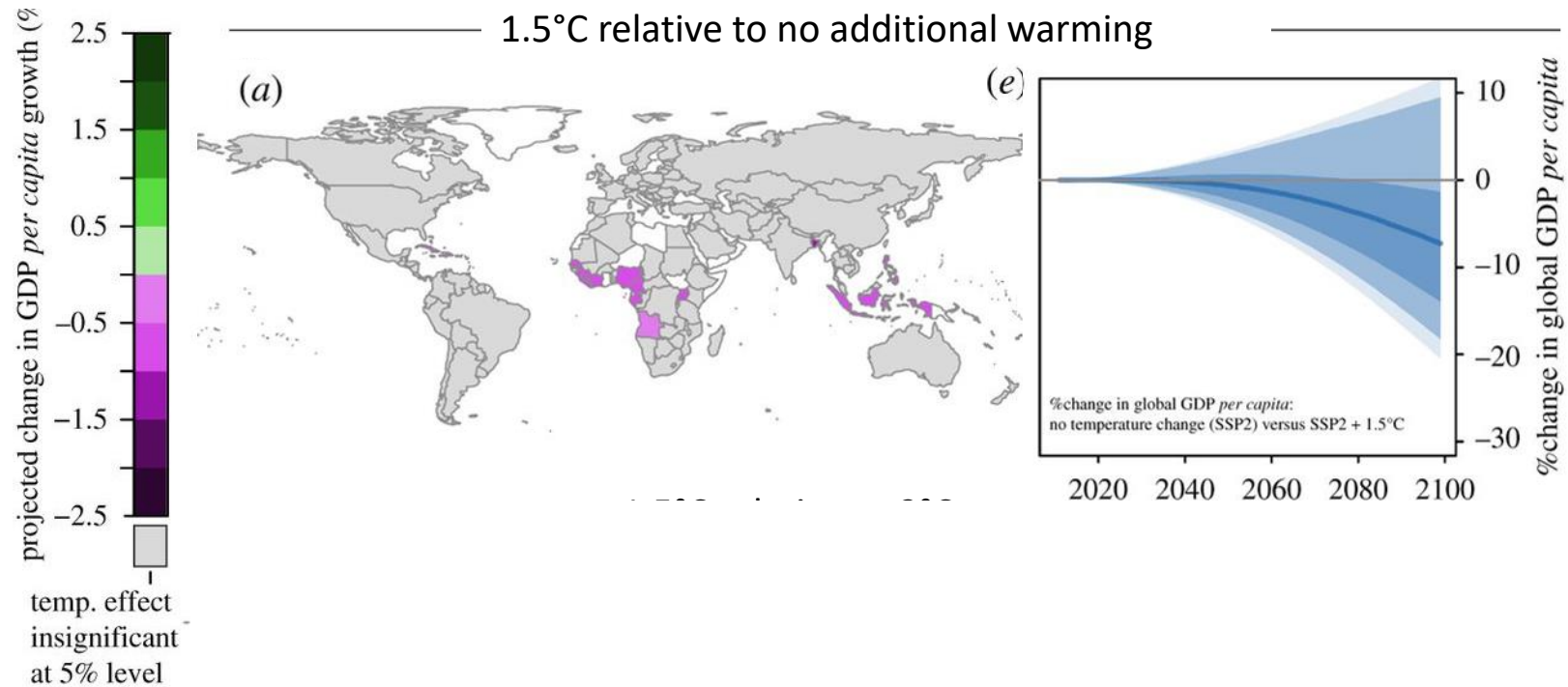
## Impacts and risks associated with the Reasons for Concern (RFCs)



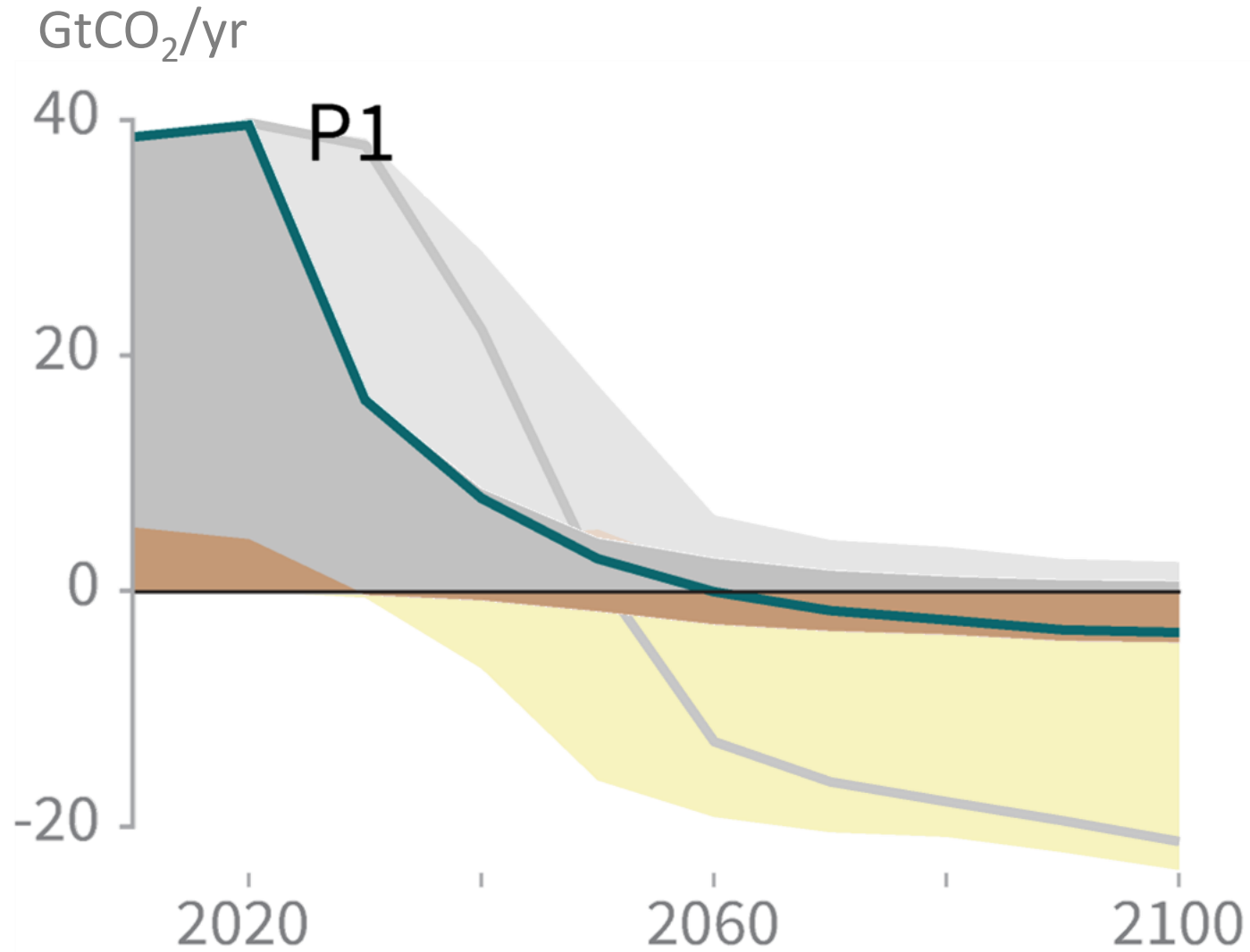
**RFC3 Distribution of impacts: risks/impacts that disproportionately affect particular groups due to uneven distribution of physical climate change hazards, exposure or vulnerability.**



**IPCC:** “Countries in the tropics and Southern Hemisphere subtropics are projected to experience the largest impacts on **economic growth** due to climate change should global warming increase from 1.5°C to 2°C”

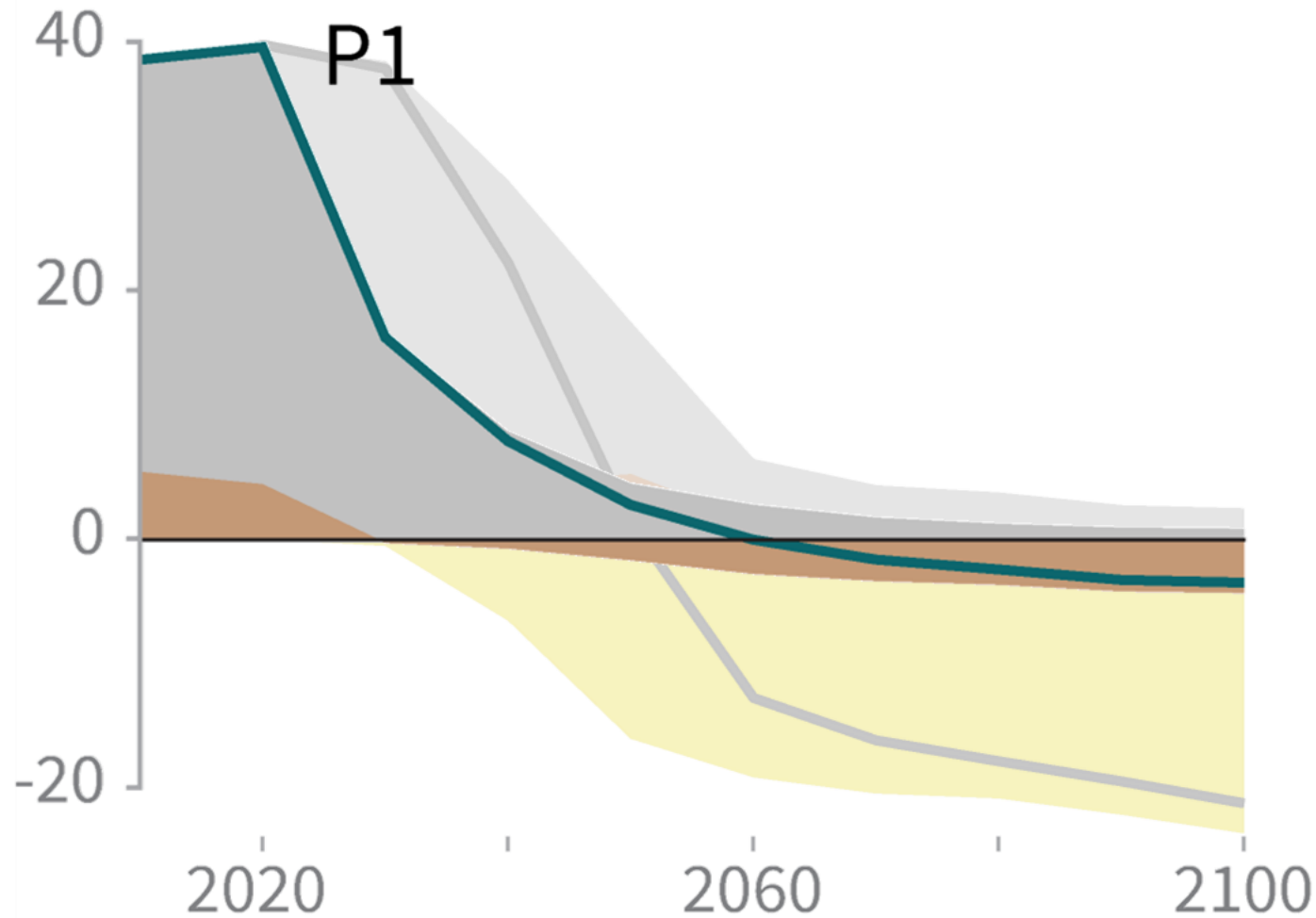


# Does the IPCC say we have to halve emissions in 12 years?

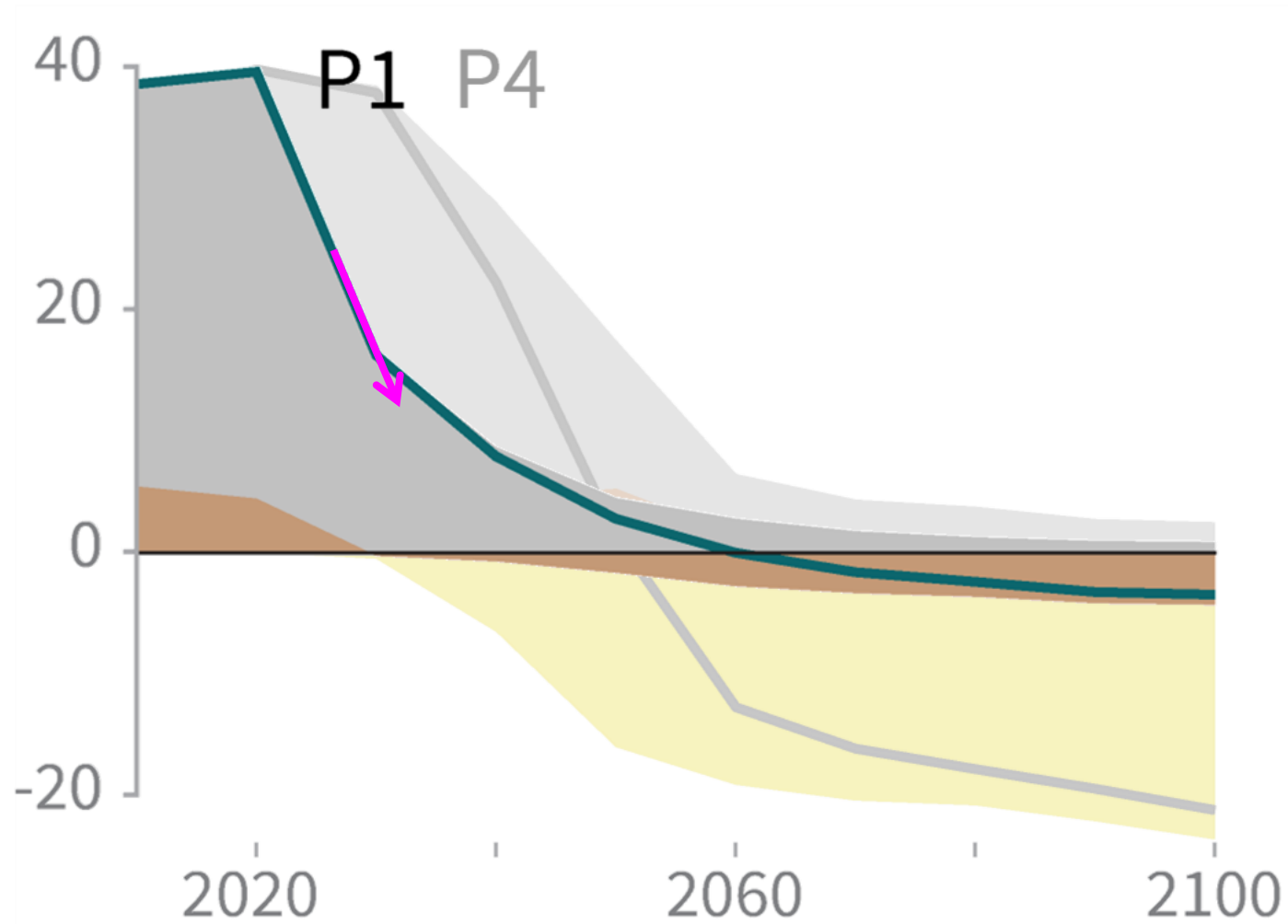


**IPCC:** “In model pathways with [50-66% chance of] no or limited overshoot of 1.5°C, global net anthropogenic CO<sub>2</sub> emissions decline by about 45% from 2010 levels by 2030”

GtCO<sub>2</sub>/yr

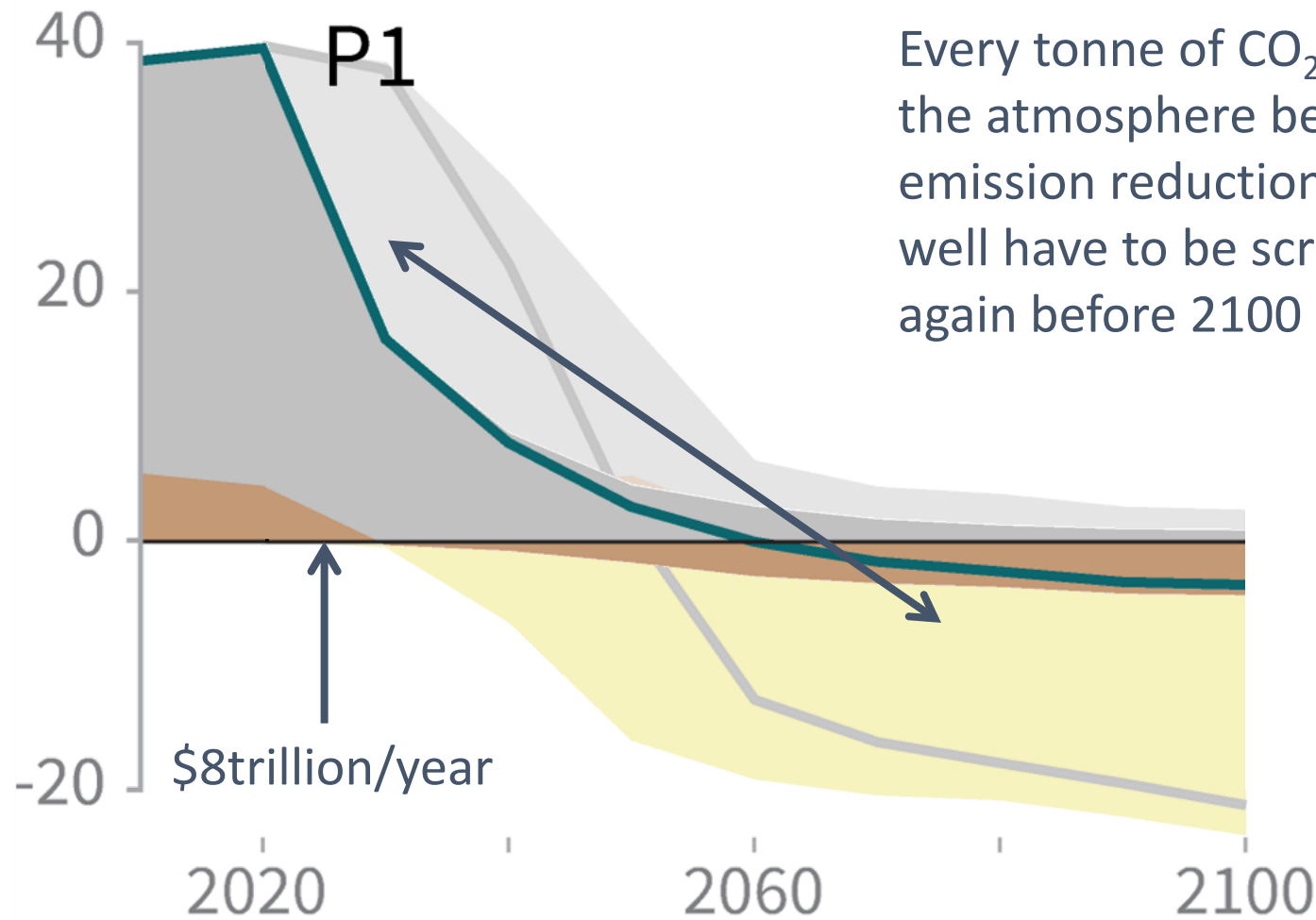


All scenarios show similar maximum absolute reduction rates

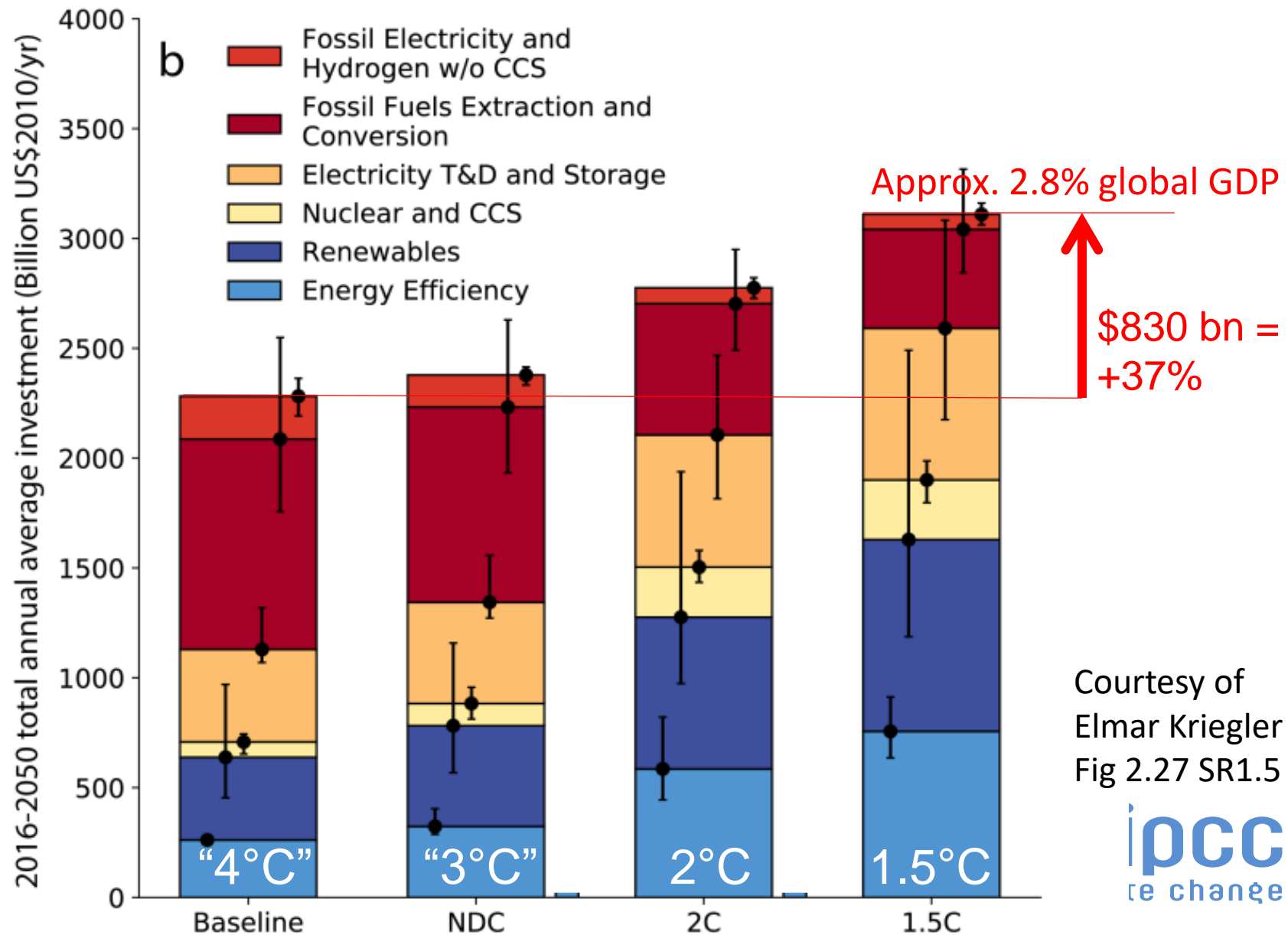


If we don't halve emissions by 2030, returning global temperatures to 1.5°C by 2100 may well require large and expensive carbon dioxide removal measures after 2050.

GtCO<sub>2</sub>/yr



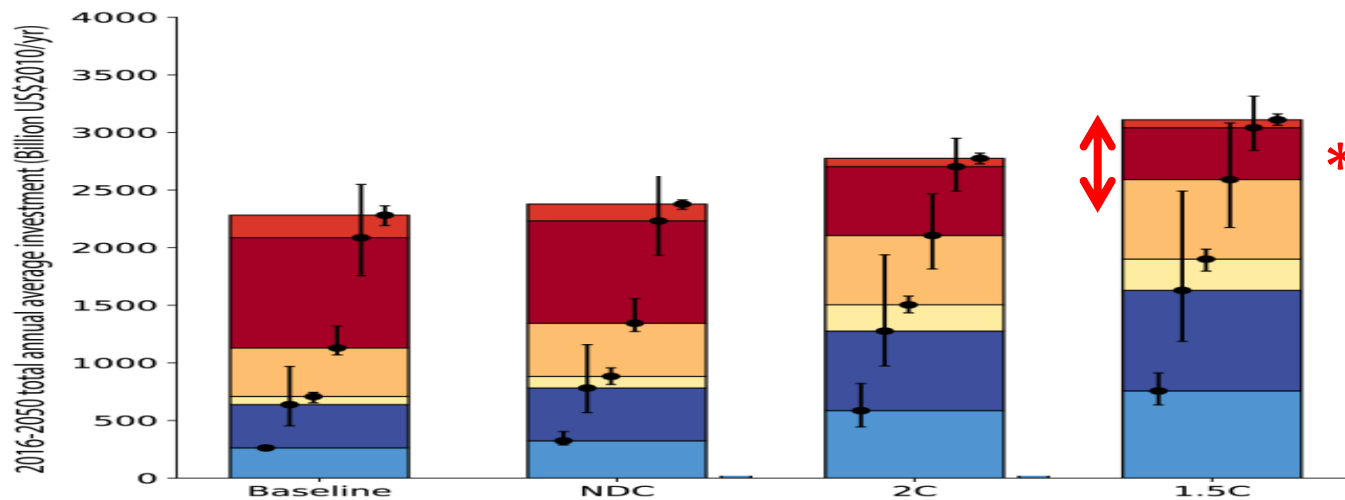
# The cost of limiting warming to 1.5°C: annual energy-related investments over the period 2016-2050 in 4 scenario categories



# Energy-related investment relative to energy-related expenditure (assuming this remains ~10% of GDP)

*“1.5°C to cost 2.5% of GDP”*

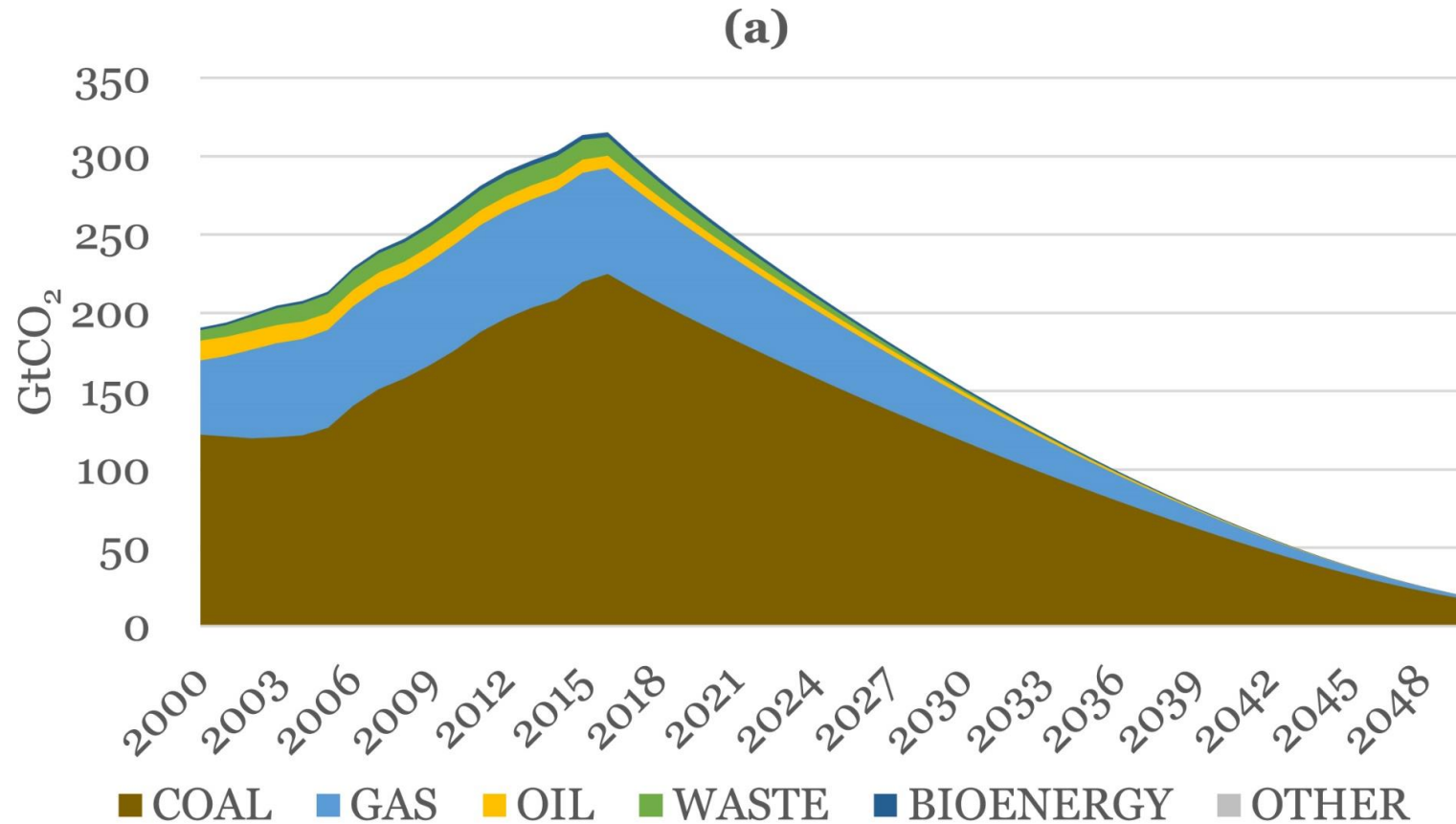
*Additional energy-related investment for 1.5°C is <1% of GDP, and <10% of current annual spending on energy*



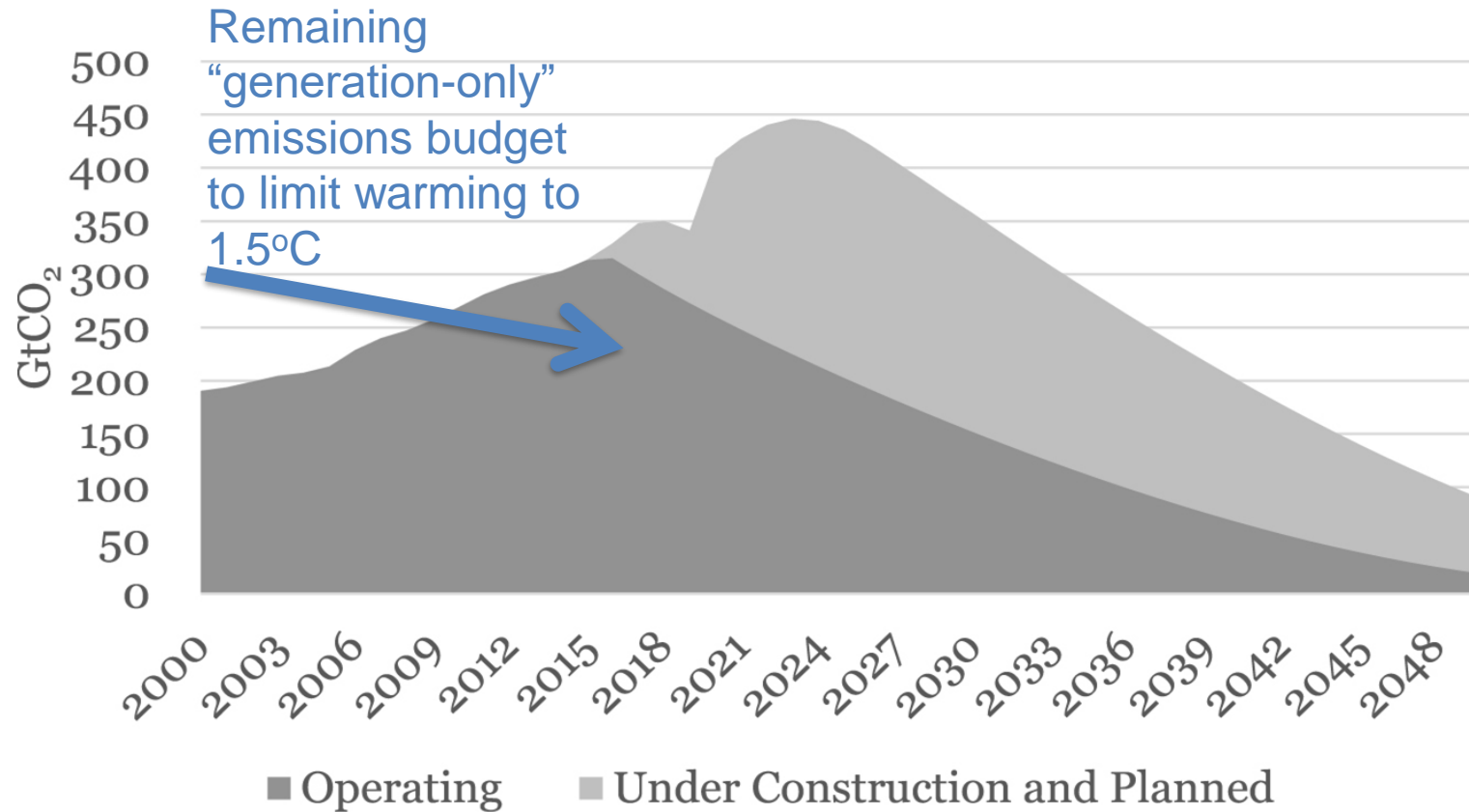
Spending on energy



# But... committed emissions from electricity power plants built before 2017



# Committed emissions including plants under construction and planned



# Climate change is not a planetary emergency – it’s an intergenerational injustice



- Declaring “climate emergency” risks focusing on short-term actions and letting current and historical emitters off the hook.
- There is one institution in the world with the capital, cashflow and expertise to solve the climate change problem:
- The global fossil fuel industry.
- But they won’t do it of their own accord...



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Development Fund



# Nicole Lazarus

Head of One Planet Living, Bioregional



[www.oxford.gov.uk](http://www.oxford.gov.uk)





*“The business network for a low carbon future”*



# Vision and Mission

**Oxfordshire Greentech is the business network supporting the growth of the low-carbon sector in Oxfordshire.**

We bring together businesses and organisations to encourage **innovation, collaboration** and **knowledge transfer**, to facilitate the **transition towards a sustainable, low carbon future** in Oxfordshire and the world

## **Our Aims**

- Create jobs and economic growth by promoting Oxfordshire as a centre for low-carbon solutions
- Support local organisations to develop services and products that enable low-carbon, resilient lifestyles
- Facilitate cross-sector collaborations through a forum for innovation and partnership-working
- Provide a platform for our members to showcase how they are creating a low-carbon, sustainable world.



# What do we do?

## Special Interest Groups

- Low Carbon Vehicles
- Built Environment
- Social Enterprise
- Circular Economy
- Access to finance

## Events

- Networking events
- Knowledge transfer events
- Individual business support
- Bespoke match making
- Cleantech venture days
- Grant funding alerts
- Internationalisation support
- Meet the buyer events





Date	Event
01/03/2019	Oxford EV Business Breakfast with City Council
02/04/2019	One Planet Living, Action Planning Workshop (OPO)
10/04/2019	E-Bike breakfast (part of the E-Bike Summit)
01/05/2019	Low Carbon Vehicle Special Interest Group; Cranfield University
16/05/2019	'A sustainable Future for Oxford, the University and the County'
23/05/2019	Using sustainability to drive innovation for your organisation (ISFB)
15/06/2019	Oxford Electric Vehicle Show
03/07/2019	Better Business Models for SMEs workshop – Banbury (ISFB)
09/07/2019	The role of innovation for social enterprises (ISFB)
18/07/2019	Exceptional Buildings, launch of Eco Business Centre (ISFB)
12/09/2019	What does circular economy mean to me and my business? (ISFB)
18/09/2019	The role of innovation for social enterprises (ISFB)
25/09/2019	Eco Business Day (Jennings)
27/09/2019	OxFutures Annual Conference
16/10/2019	The future of Minimum Energy Efficiency Standards
16/10/2019	Access to finance for Innovators – Harwell Campus (ISFB)
Nov 2019	EV charging infrastructure – Breakfast event
Feb 2020	EV insurance and leasing option – Breakfast event
Feb 2020	Cleantech Venture Day – London
April 2020	Oxfordshire Greentech Annual conference

# Ecosync Energy



- Ecosync Energy offer a solution addressing all 3 issues of CO2 pollution; cost and wasted energy: stop heating empty rooms
- Ecosync identify empty rooms and create responsive heated zones using Internet of Things devices, machine learning algorithms and occupancy detection

# EV Car Shop



- It's the One Stop Shop for Electric cars
- Their **Interactive Studios** are family friendly retail spaces where you get to See, Touch and Drive the newest Electric Cars on the Market



# Trust for Oxfordshire's Environment



- TOE raises funds for environmental projects that benefit the people and wildlife of our county
- TOE provides funding for local projects that support nature's recovery and sustainable land use

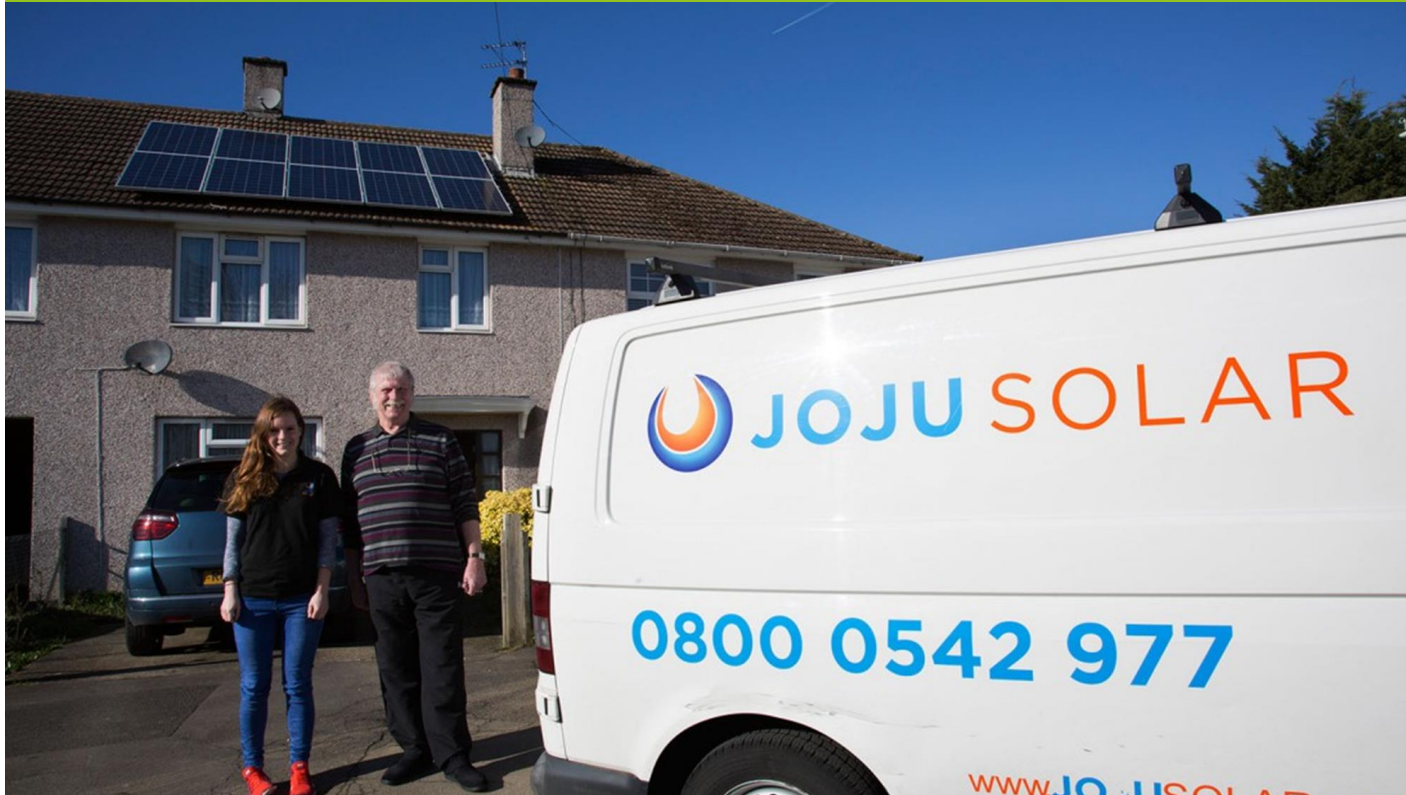
# Seacourt



- Sustainable printing
- High quality, high technology  
LightTouch™ printing  
that combines the benefits of waterless technology with instant LED drying
- The UK's most Sustainable Printers



# Joju Solar



- **Independent experts** in solar energy, battery storage and electric car charging points
- Joju Solar is driven by a **real commitment** to build a future powered by the sun



# LCMB Building Performance Specialists



LCMB – improving **performance** by making buildings work harder.



- LCMB ensure that buildings perform as well as they possibly can, reducing resource use and waste, increasing output and building value, working harder to compound benefits



# Cleantech sector stats

... .. Broader drivers

- Cleantech Sales £52billion UK economy and £50trillion globally
- 14,000 cleantech jobs in Greater Cambridge / Oxfordshire regions
- South East Region – 6,585 LCEGS listed, 14% of UK LCEGs, twice the national average
- Nationally 3% of GVA
- Oxfordshire Low Carbon Economy report 7%

# One Planet Living

One Planet Oxfordshire Shared Vision

Oxfordshire Greentech helps to deliver 3  
“Outcomes” from the Shared Vision:

1. Oxfordshire is a global leader in innovation for our low carbon future
2. Oxfordshire capabilities and actions support solutions to global environmental challenges
3. Innovative low impact product design and production is supported

Greentech is developing its own One Planet Action Plan as are Cambridge Cleantech

Greentech members can access OPL support for their business





Come to the Greentech stand in the Assembly Rooms now!

Join Greentech

Sign up for events

Start a new Special Interest Group, discuss an event idea

[info@oxfordshiregreentech.co.uk](mailto:info@oxfordshiregreentech.co.uk)

<https://oxfordshiregreentech.co.uk/>

@Ox\_Greentech





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# Megatrends



- Climate crisis & One Planet Living
- Ageing population
- Technology
- Radical transparency and social media
- New player speed to market
- Personalised health and medicine
- Privacy and data protection
- Food security, reduced-meat & plant-based diets

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OXFORDSHIRE  
GREENTECH

The business network for a low-carbon future

Specialist Greentech Events

Curated Commercial Opportunities

Special Interest Groups

Find out more and sign up at

www.oxfordshiregreentech.co.uk



OXFORDSHIRE  
GREENTECH

The business  
network for  
low-carbon  
future

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and do  
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# Bandvulc:





# Tom Malloy



OXFORD  
PRODUCT  
DESIGN



**MAKING THINGS BETTER  
BY MAKING  
BETTER THINGS.**

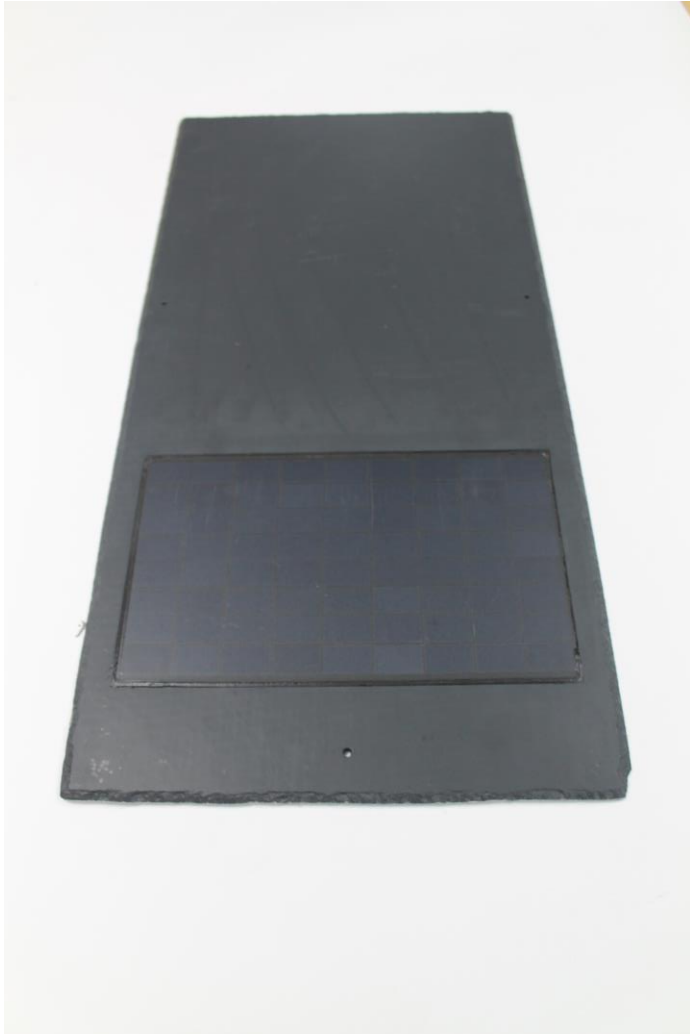
# Emmy O'Shaughnessy, Ark-T Centre





**Philip Shadbolt OBE**  
**The Zeta Group**





Cement



Plastic





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Get people working with you not  
against you – tools to overcome  
resistance and build alliances



climate change coaches

Helping you get unstuck about the environment

ABOUT US

#CLIMATEMOJO2019

CLIMATE FEEDBACK



WHAT WE DO

OUR TEAM

CONTACT US

# climate change coaches

Helping you get unstuck about the environment

[www.climatechangecoaches.com](http://www.climatechangecoaches.com)



**Get unstuck and into action  
on climate change**



**Find your #climatemajo  
with us in Climate Strike  
week**



climate change coaches

Helping you get unstuck about the environment





climate change coaches

Helping you get unstuck about the environment

# Resistance [ri-zis-tuhns]:

The act or power of resisting, opposing or  
withstanding



climate change coaches

Helping you get unstuck about the environment

# BEING A COACH

- Being non-judgmental
- Finding them good, not bad
- Everyone gets to be partially right





# DOING COACHING

- Listen within the words for values
- Don't be attached to getting it right
  - Connect values to action







Let's practice!



climate change coaches

Helping you get unstuck about the environment



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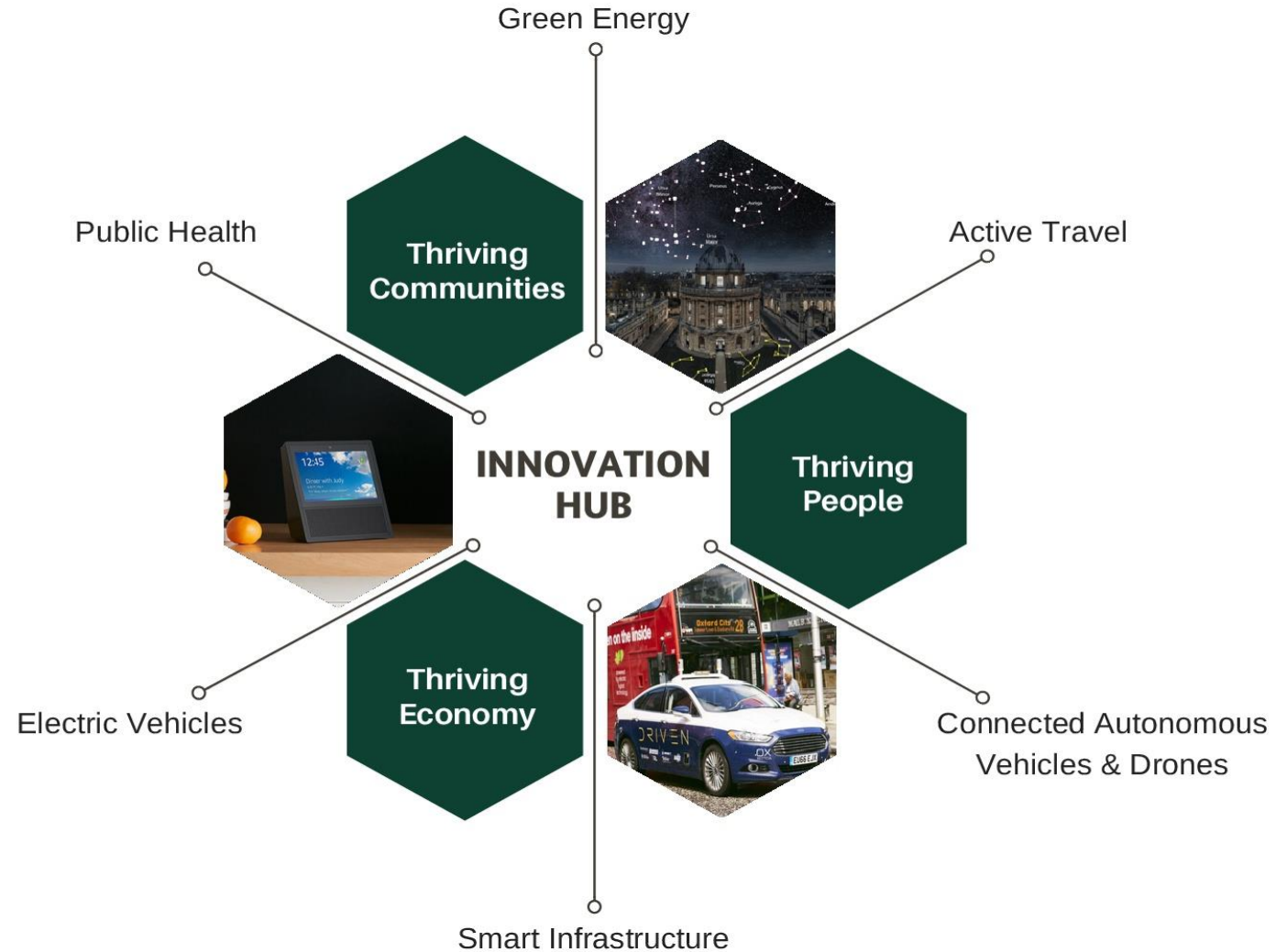
Helping you get unstuck about the environment

[www.climatechangecoaches.com](http://www.climatechangecoaches.com)



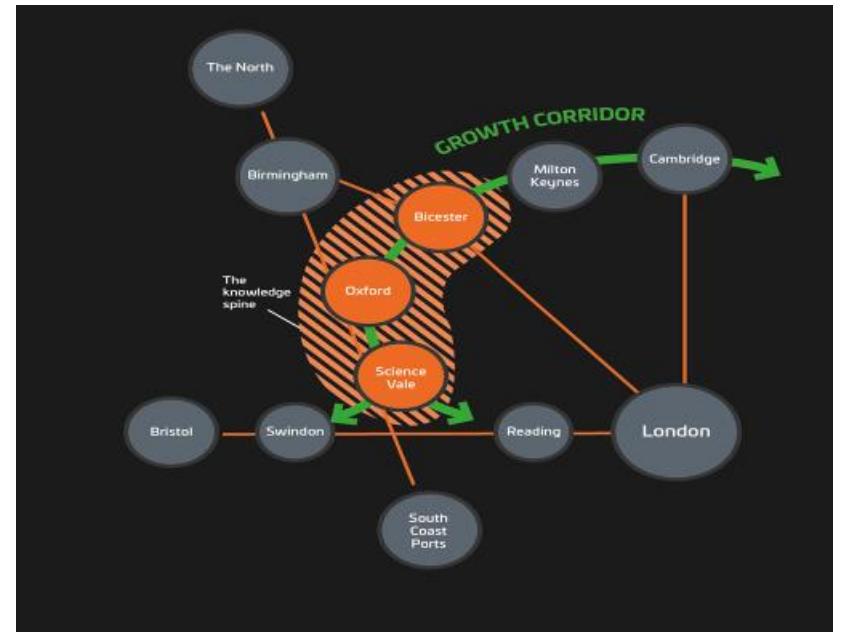
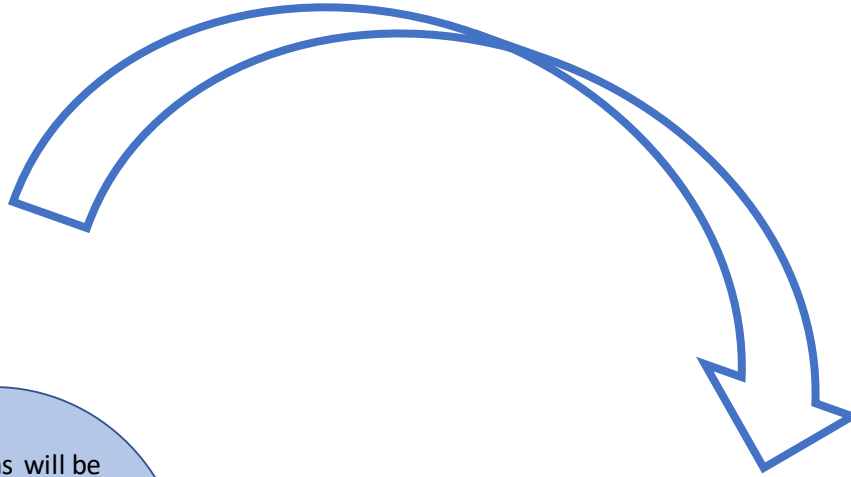
**Get in touch!**

# OCC Innovation HUB





# The Concept

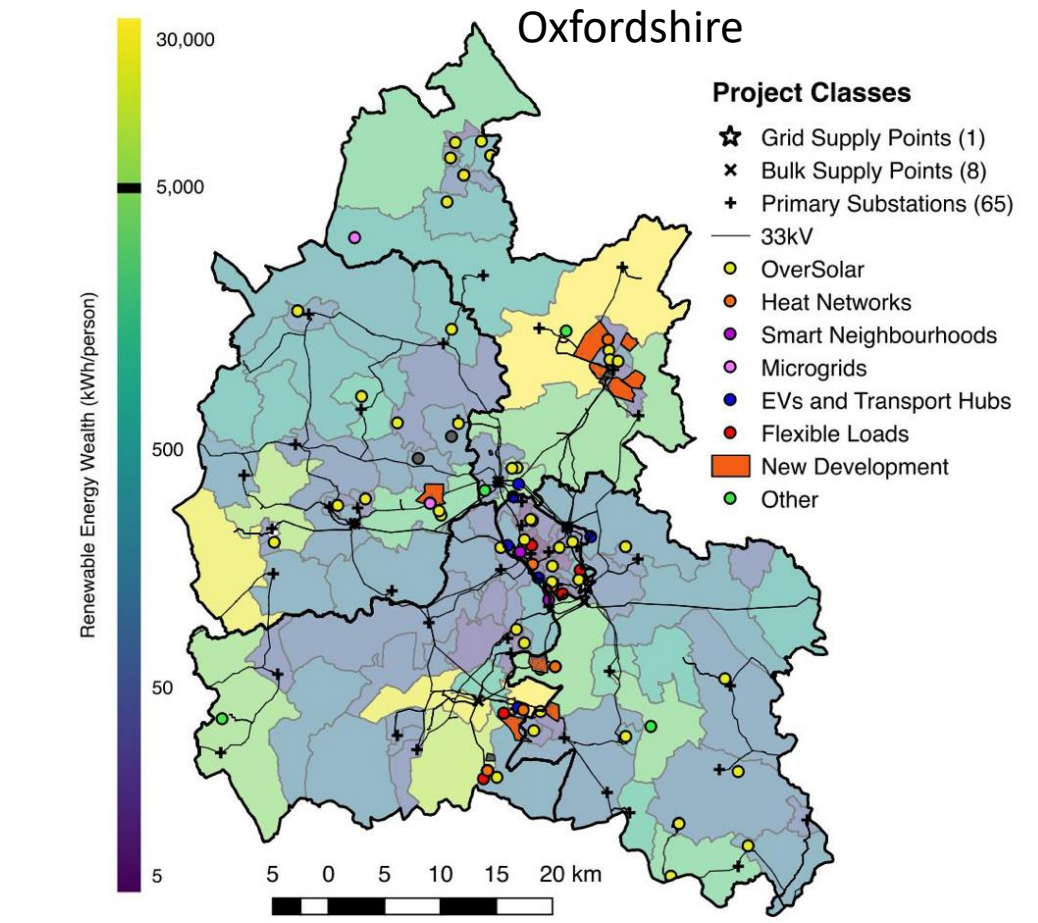
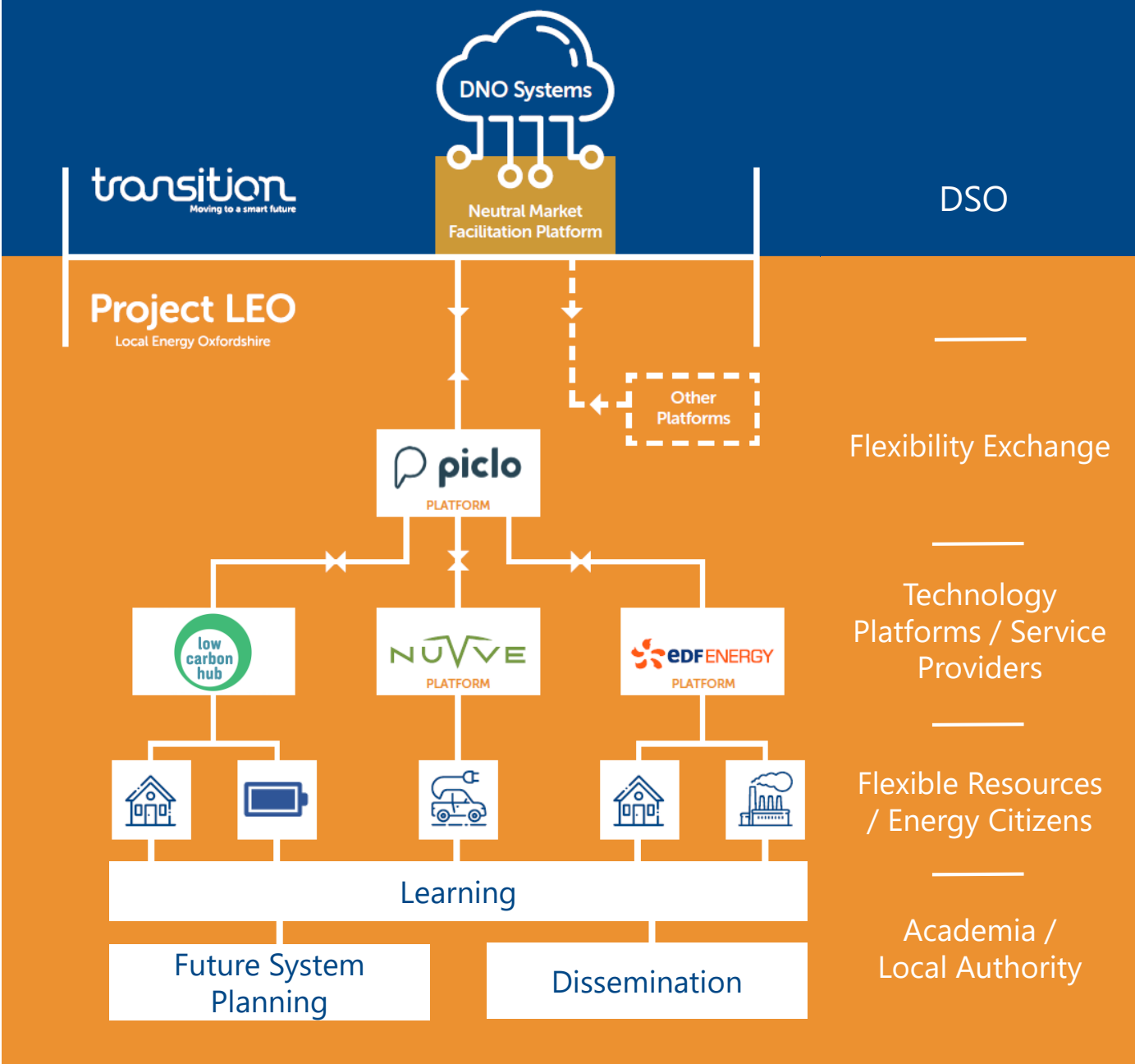




Maximising prosperity of local energy systems

[www.project-leo.co.uk](http://www.project-leo.co.uk)





Develop new local flexibility and energy markets which maximise asset utilisation and enable innovative business models for investment in a low-carbon energy future.

# Delivering public services for a zero carbon economy

**Mairi Brookes**

**Head of Transformation**

**Oxford Direct Services**





# Public service delivery in Oxford

- Oxford Direct Services was established in 2012 and spun-out in 2018 as a wholly-owned company of Oxford City Council
- A commercially-minded approach rooted in public service values
- Delivering and developing services with a focus on outcomes for local economic, environmental and social sustainability



# Electrifying ODS and beyond



- Delivery partner and test bed for the Energy Superhub Oxford Project
- Testing vehicles across our services: from street cleaning to operatives' vans to waste collection tippers
- Scoping and installing the necessary fleet charging infrastructure
- Learning feeds business development and new services to accelerate adoption across the city and county



# A delivery partner for social, environmental and economic impact



- Already delivering a large range of services to the public and private sector e.g.: fleet management and maintenance; waste collection; car park management; highways and construction.
- Actively developing new business services for e-mobility and house building and retrofit, and housing maintenance.
- Collaborative and outcomes-focused: putting commercial services development in the context of local or organizational policy objectives





# Jennings

a home for your business



People



Values



Community



Environment





# Jennings Initiatives



- Hemp & Lime Construction
- SuDS Drainage System

- PV Solar Panels
- Biomass Boiler
- LED Lighting
- Hotbin Composting

- Biodiversity
- Wildlife on the Park
- Landscape Management





BLENHEIM PALACE

*Sustaining Blenheim*

**Jacqueline Gibson**  
Sustainability Advisor

*A timeless pleasure, a precious time, every time.*





# Our ten-year goals

Our aim is to be the lifeblood of the local economy, to enhance the lives of the people of Oxfordshire, to share this magnificent place and to conserve and protect it for future generations.

By **2027** we will:

Become a net generator of **green energy**

Train over **100 NEW** apprentices in roles across the Estate

**TRIPLE** our economic contribution to the local area

Reacquire or borrow **key works** from the Palace's lost collections

Achieve annual paying visitor numbers in excess of **750,000**

**DOUBLE** our charitable contributions to the community

Secure endowment of **£45 million** to conserve our World Heritage Site

Become one of the UK's **TOP 100** employers

Complete **£40 million** of vital restoration work

Build high quality, affordable homes for **300** families



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# Cllr Tom Hayes

Zero Carbon Cabinet Member  
Oxford City Councillor for St Clements Ward



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# Alison Grunewald

Business Relationship Manager, Low Carbon Hub

## Improving premises



**115 energy audit reports**



**40% implemented  
35% planned**



**800 recommendations to  
save energy and cut  
carbon**



**145 businesses supported**



Ark-T Centre  
Creativity Changes Lives



OVADA

## Strengthening Social Enterprise



**SHED  
OXFORD**  
THE ABBEY  
SUTTON COURTENAY



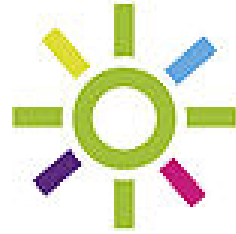
## More than just savings

“We don't freeze on winter mornings”

“Heartfelt thanks ... the building is transformed by the changes”

*“The windows are fantastic... such a great improvement to our site”*





**seacourt**  
Planet Positive Printing®



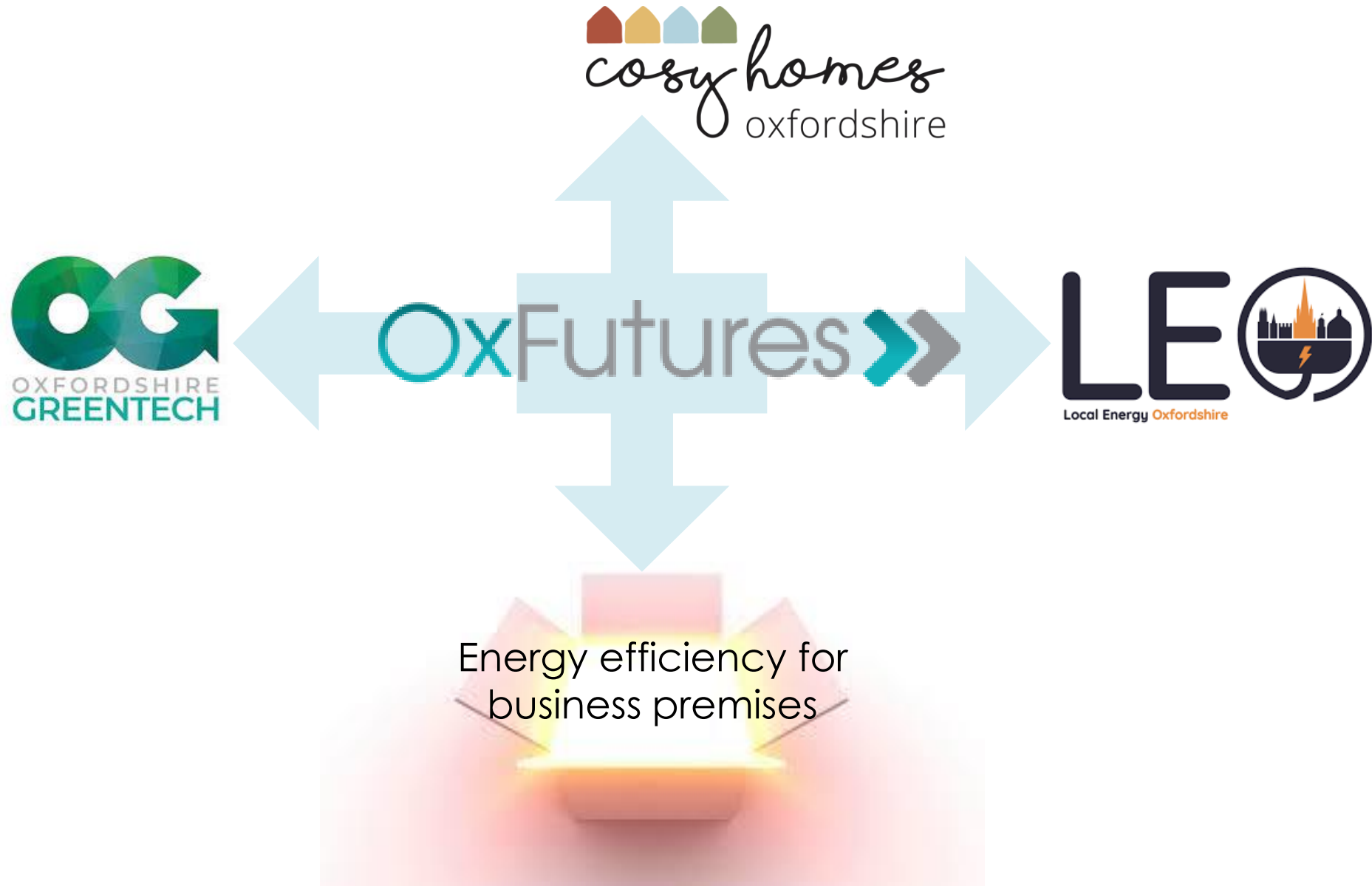
## Growing innovation



**Oxfordshire  
Community  
Land Trust**



# Growing networks and initiatives



# Dr Barbara Hammond

CEO Low Carbon Hub

**What will you do now?**



# Thank you!

Thank you to all project partners, supporters, participants in the OxFutures project, exhibitors here today.





# What will you do now?

- Sign up for OxFutures – [www.oxfutures.org](http://www.oxfutures.org)
- Join Oxfordshire Greentech – [www.oxfordshiregreentech.co.uk](http://www.oxfordshiregreentech.co.uk)
- Talk to us about innovation funding if you have an idea for a new low carbon product or service

Alison Grunewald, Business Relationship Manager,  
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