



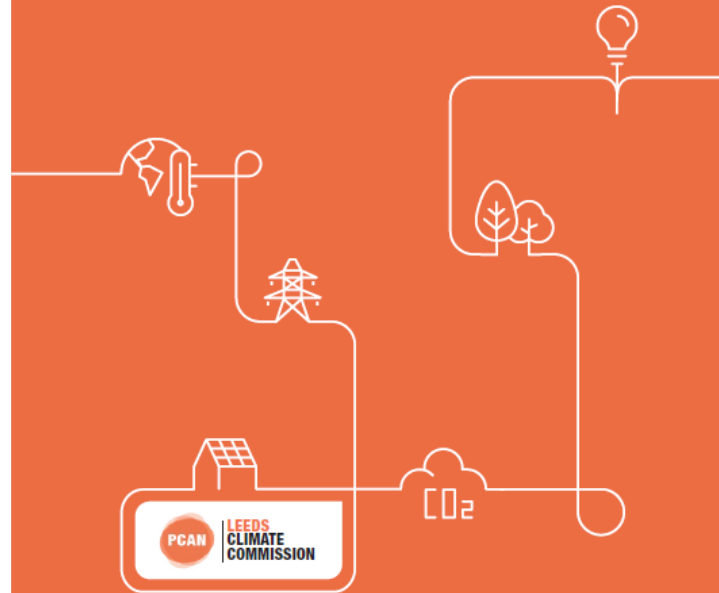
**PLACE-BASED
CLIMATE ACTION
NETWORK**



**LEEDS
CLIMATE
COMMISSION**

A NET-ZERO CARBON ROADMAP FOR LEEDS

Andy Gouldson, Andrew Sudmant, Amelia Duncan & Robert Fraser Williamson



Authors:
Andy Gouldson,
Andrew Sudmant,
Amelia Duncan
Robert Williamson

Andy Gouldson
Chair – Leeds Climate Commission
a.gouldson@leeds.ac.uk - @andy_gouldson

Program

18:30 Introduction

18:35 Presentation of Leeds Net Zero Carbon Roadmap, Andy Gouldson

18:50 Responses from panellists:

- Adil Hussain and Siobhan Leese, Citizen's Jury Members
- Polly Cook, Chief Officer for Sustainable Energy and Air Quality at Leeds City Council
- Liz Edginton, Environmental Advisor at Business in the Community
- Simon Bowens, Regional Campaign Coordinator at Friends of the Earth

19:20 Q & A session

19:50 Closing remarks

20:00 Webinar end



How to engage

- Presentations first then Q&A and discussion
- Post questions in the Q&A box at any time
- Up-vote your favourites
- Attendees will remain muted unless enabled to speak by the host
- Webinar (audio and slides) will be shared after the event
- Technical problems – please use the chat function

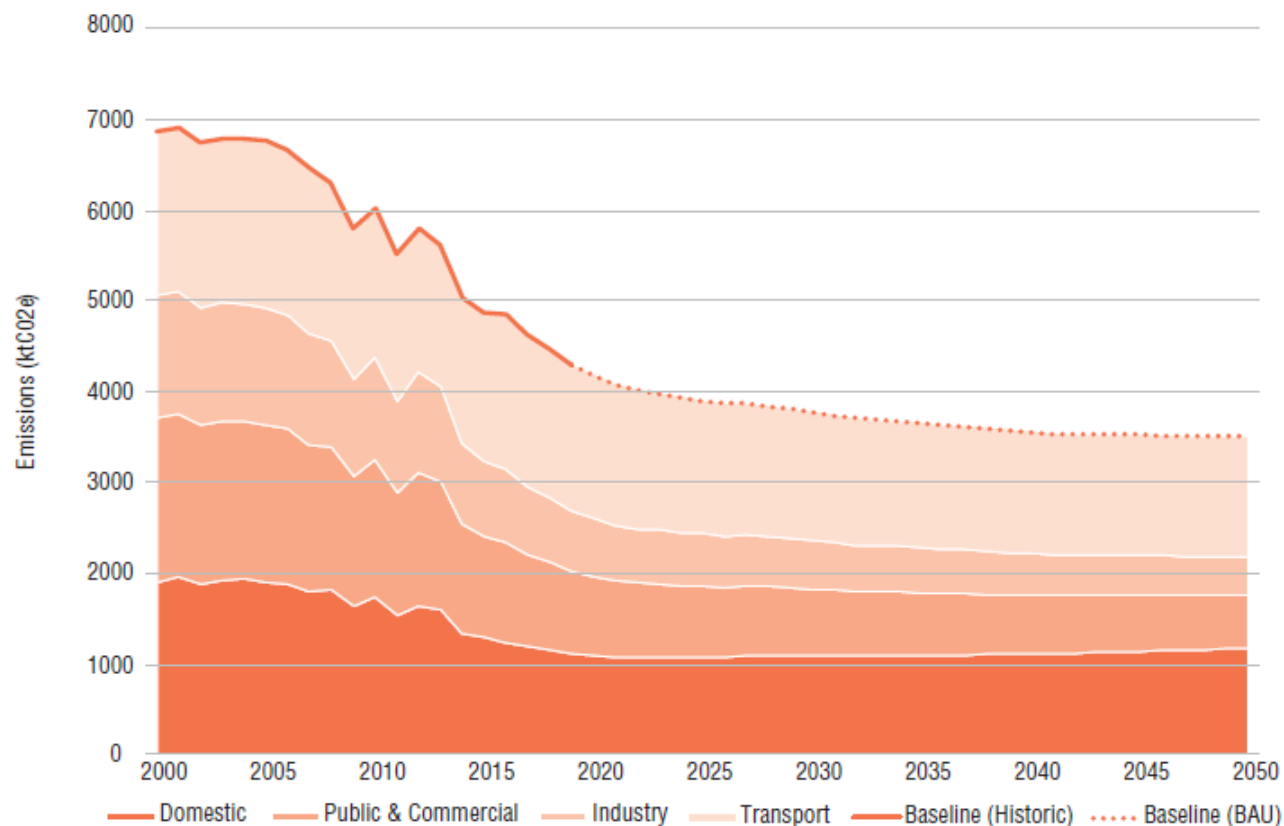
Please note: this webinar is being recorded

Twitter:

@PCANcities @LeedsClimateCom
#PCANcities

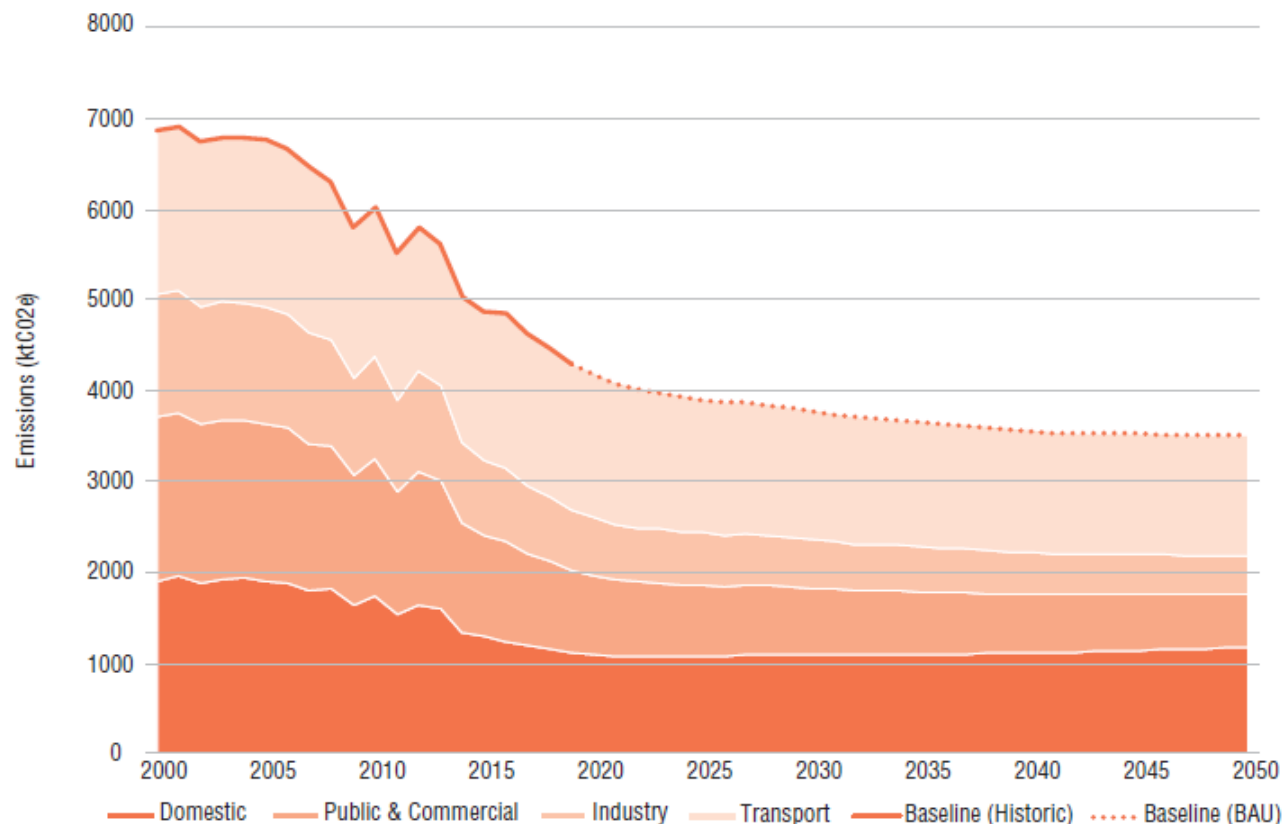
Youtube: <https://bit.ly/2MBw9Qw>

Our Carbon Footprint



Between 2000 and 2019, emissions fell by 40%.
Between 2000 and 2050, they are predicted to fall by 50%.

Our Carbon Footprint

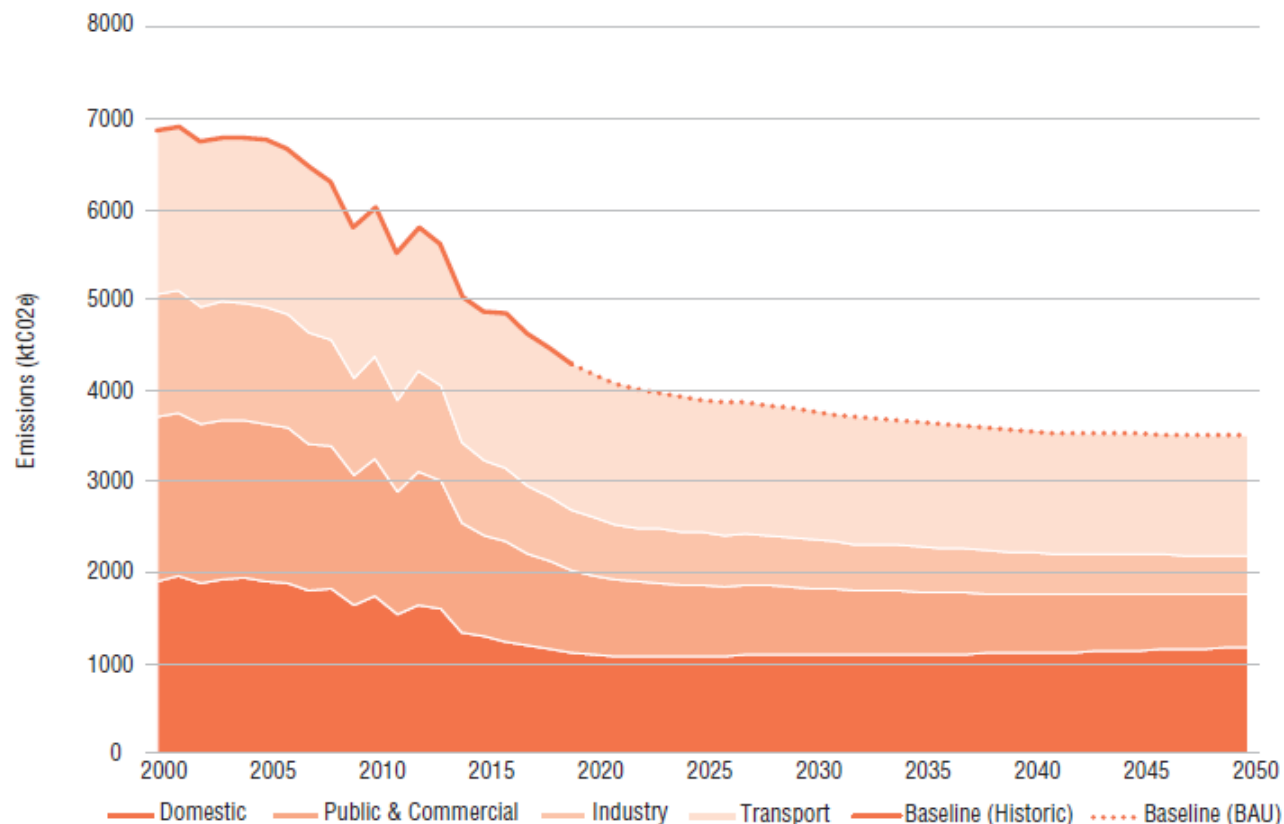


Leeds total share of the global carbon budget in 2020 – c.31m tonnes.

Leeds 2020 emissions – c.4m tonnes.

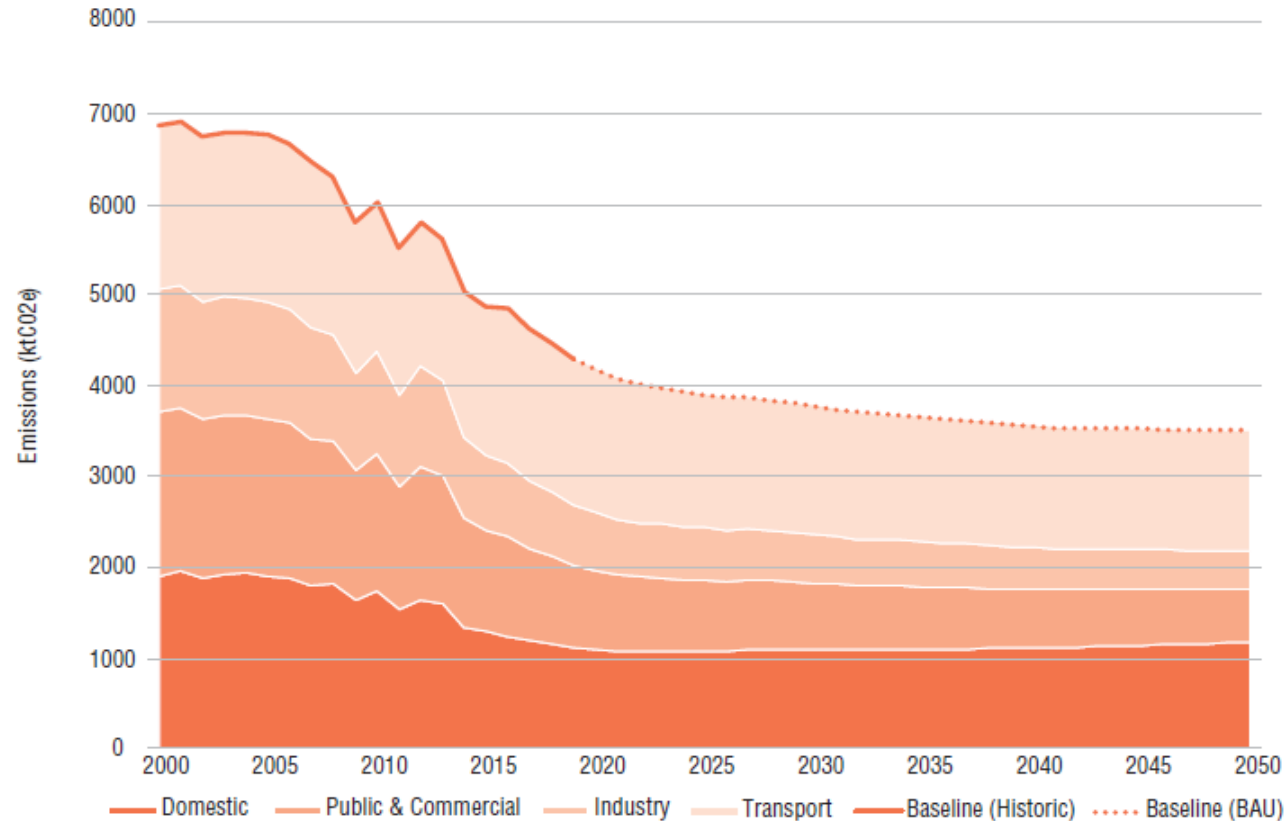
Point at which Leeds will have used up its carbon budget – 2029.

Our Carbon Footprint



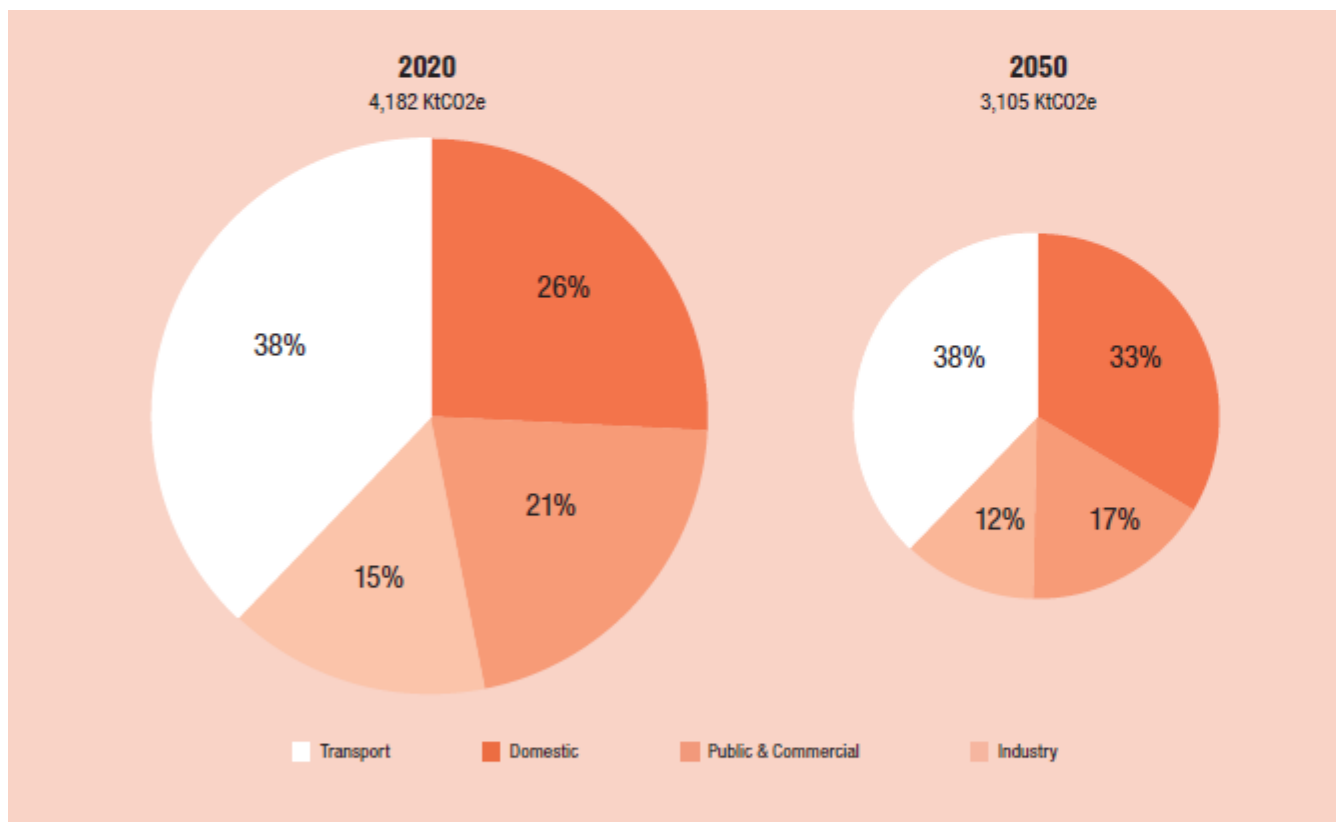
During lockdown, emissions were c.43% lower than normal.
Through 2020, they were c.13% lower than normal.

Our Carbon Footprint

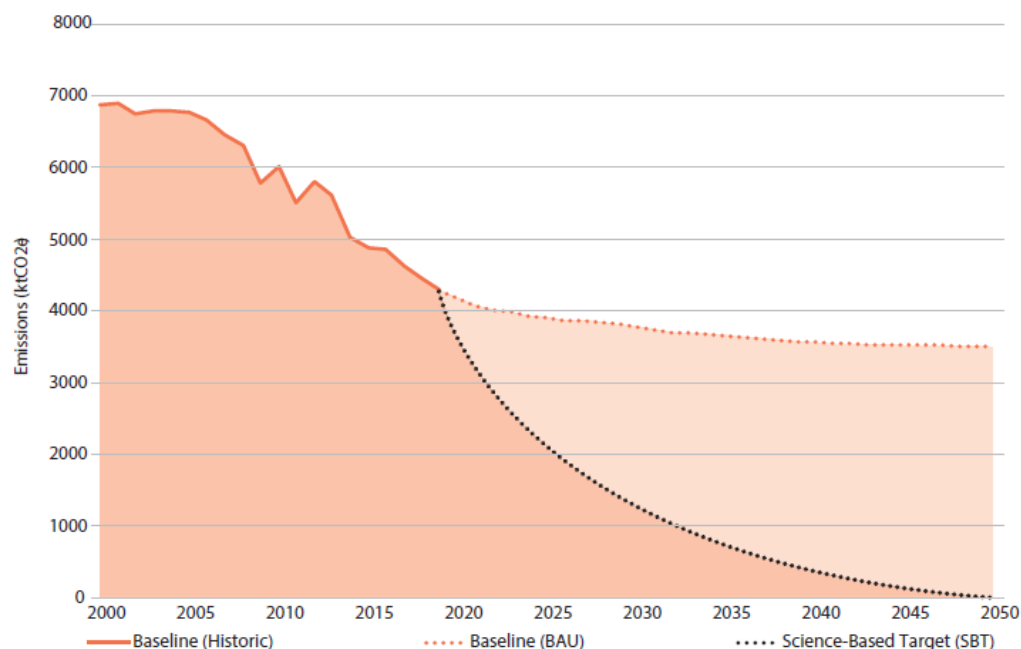


These reductions only delay the point at which Leeds will have used its carbon budget by 2 months.

Our Carbon Footprint



Science-Based Carbon Reduction Targets for Leeds



70%

by 2025

97%

by 2040

85%

by 2030

99%

by 2045

95%

by 2035

100%

by 2050

Achieved - c.45% reduction in the last 20 years
Required – c25% reduction in the next 4-5 years.

We need to accelerate significantly!



The scope of the report

Scopes 1 and 2

Fuel and electricity use in houses, other buildings, transport within the city and industry, all available options to reduce this use and some small scale renewables.

Scope 3

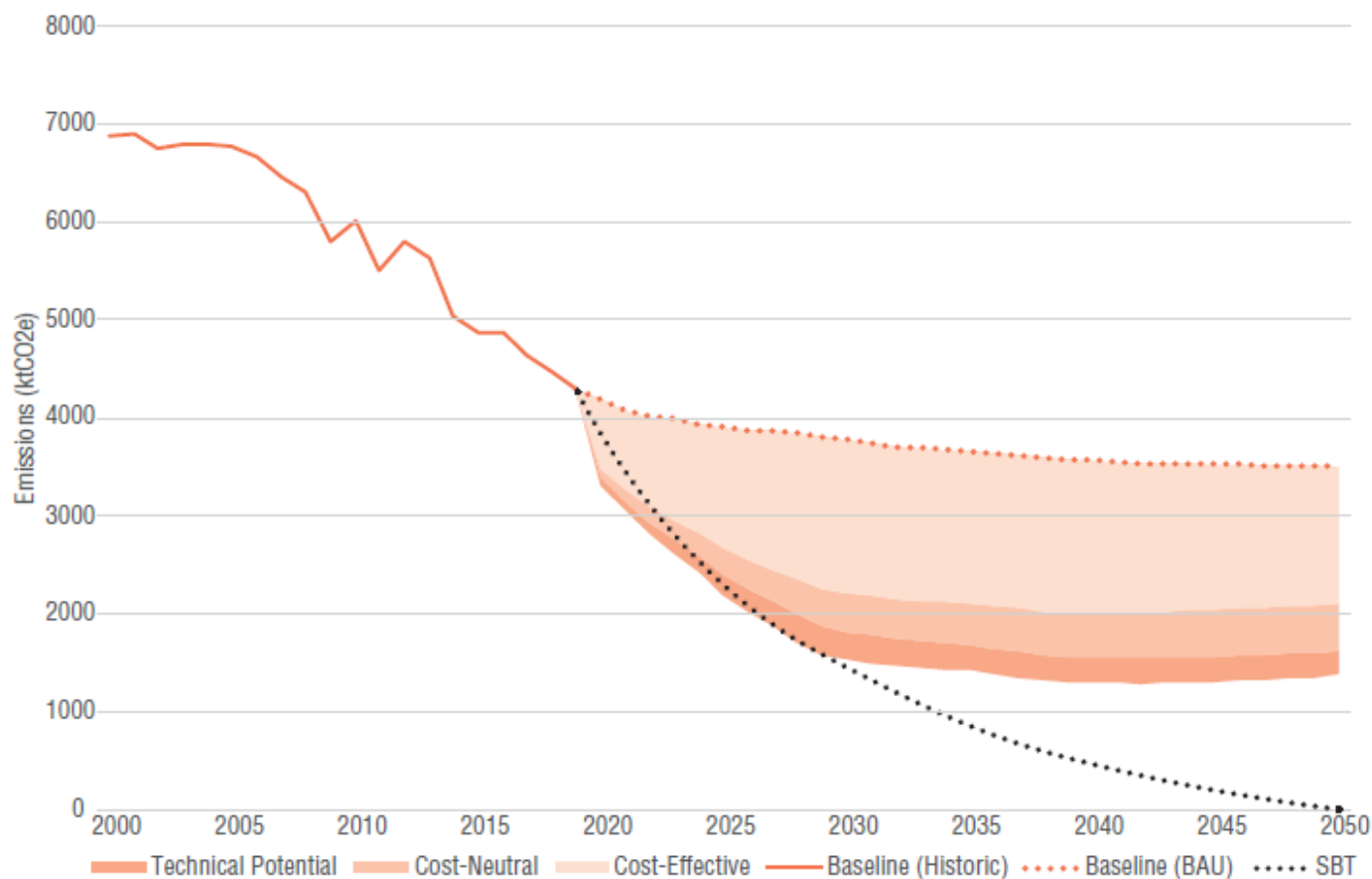
Net carbon embedded in the products imported into/exported from the city, and the impacts of longer distance travel by organisations and residents in the city, including through aviation.

Flights taken by Leeds residents add c21% to the scope 1 and 2 baseline.

Scope 1 and 2 emissions are c40% of Scope 3 emissions.

Leeds needs to be a leader in addressing Scope 3 emissions.

Carbon Reduction Options for Leeds



Cost-effective 41%

Cost-neutral 11%

Technically viable 8%

Remaining 40%

Top 10 Carbon Reduction Options

Rank	Measure	Emissions Reduction Potential (ktCO ₂ e)
1	Insulating Domestic Buildings	3,520
2	Petrol Car to Bicycle Journeys	3,076
3	Upgraded Heating controls in Domestic Buildings	3,016
4	Petrol Car to Walk Journeys	2,991
5	Electrical upgrades in Domestic Buildings	2,460
6	Installing heat pumps in Domestic Buildings	2,457
7	Petrol Car to EV Journeys	2,202
8	Petrol Car to Electric Bus Journeys	2,124
9	Diesel Car to Walk Journeys	2,040
10	Fabric improvements in Public Buildings	2,021



The Economics

Cost-effective

- Investments of £600m a year through the 2020s
- Cuts in Leeds's 2030 energy bill of £651m a year
- Creation of 14,823 years of extra employment
- Close the gap to net zero by 41%.

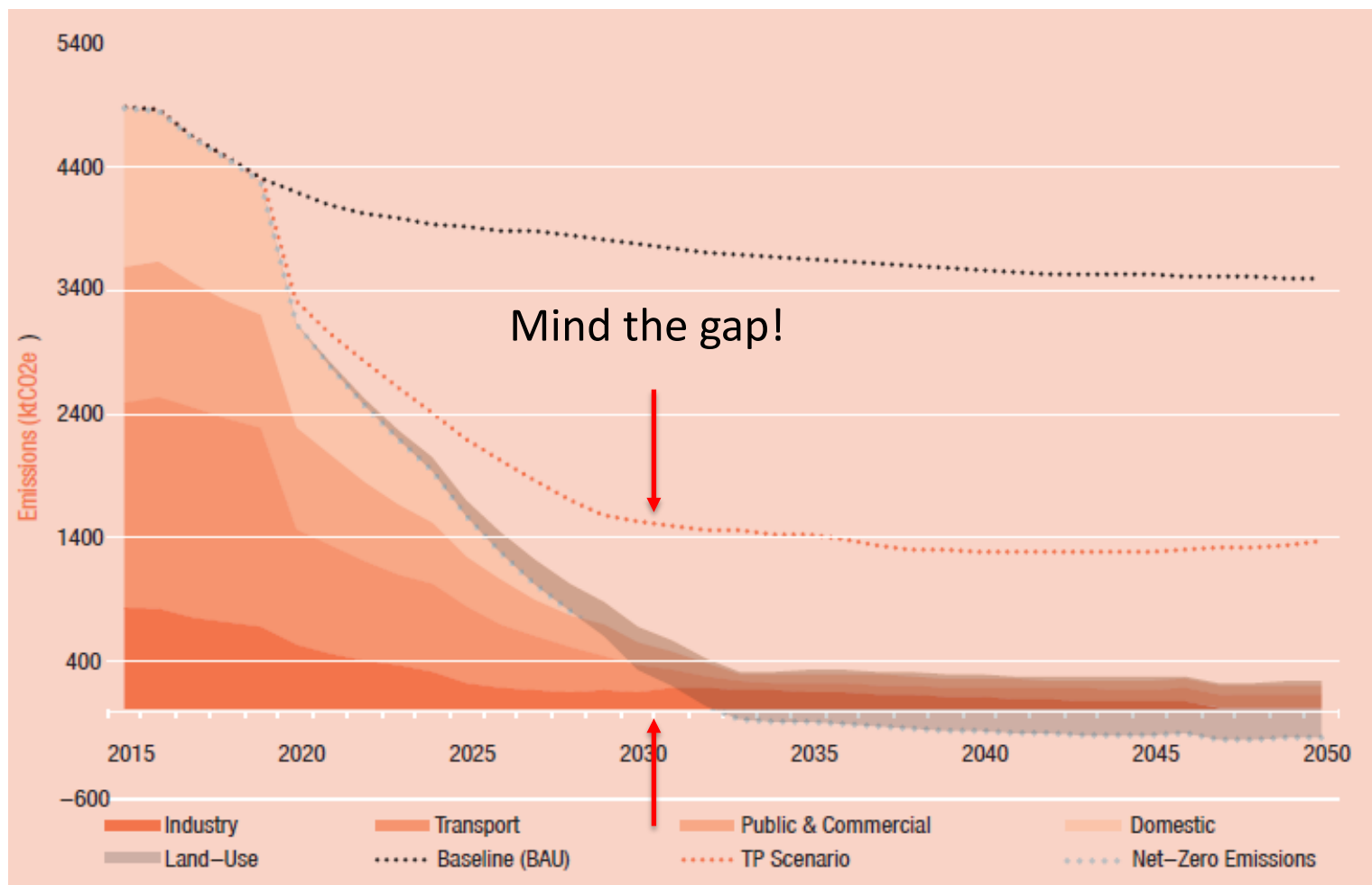
Cost-neutral

- Investments of £900m a year through the 2020s
- Cuts in Leeds's 2030 energy bill of £553m a year
- Creation of 22,229 years of extra employment in the city
- Close the gap to net zero by 52%.

Technically viable

- Investments of £1,110m a year through the 2020s
- Cuts in Leeds's 2030 energy bill of £555m a year
- Creation of 31,088 years of extra employment
- Close the gap to net zero by 60%.

Leeds's 'Stretch' Carbon Reduction Options

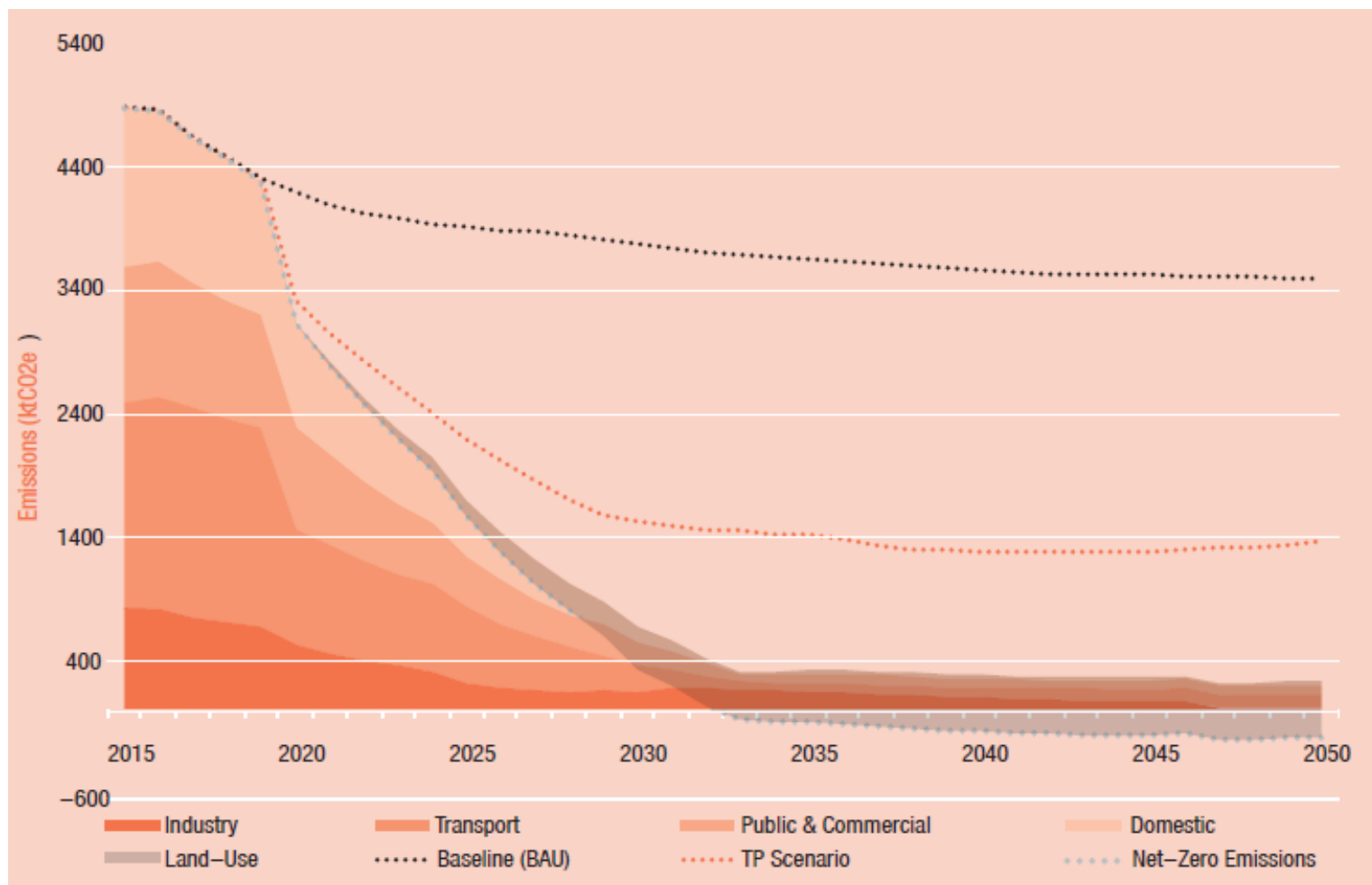


Carbon Savings from Leeds's 'Stretch' Options

		2025	2030	2035
Annual Emissions Reduction Potential (ktCO ₂ e)	Zero carbon heavy goods transport	68	319	313
	Electrification of industrial heating and cooling	40	38	22
	Electrification of domestic heating	26	133	189
	Electrification of domestic cooking	8	44	63
	Electrification of commercial and public heating	14	42	14
	Hydrogen-based heating (H ₂)	0	289	275
	2000 Ha Annual Reforestation (2020-29)*	133	343	422

Reforestation to offset residual emissions would require
89 million trees to be planted
on an area equivalent to 36% of the city.

Leeds's 'Stretch' Carbon Reduction Options





Leeds can get to net zero, and a lot of what it needs to do will generate jobs, tackle poverty, reduce congestion, improve air quality and enhance public health.

**It's not about why would you do this –
it's about why wouldn't you.**



What Needs to Happen Next?

- See this as an opportunity and mainstream it into the heart of the city's policies and plans and visions for the future
- Develop and start to deliver net zero delivery plans for:
 - housing,
 - transport
 - commercial buildings
 - the public sector.
- Focus on community engagement, build the social license and deliver a just transition
- Explore options for finance and investment and have a clear plan for employment and skills provision
- Expand the boundaries to consider Scope 3 or consumption-based emissions.

LEEDS CARBON ROADMAP PATHWAY TO NET-ZERO*



BACKGROUND



1.5°C

The level of global temperature rise at which we risk triggering dangerous climate change

2030

The point at which - at current rates - the world will have locked into more than 1.5°C of warming

GLOBAL TO LOCAL



31m

tonnes
Leeds' share of the global carbon budget (to keep to 1.5°C of warming)



Leeds is emitting

4m

tonnes
of carbon a year. At this rate, we will have used up our budget by

2029

BASELINES AND TARGETS

40%

The decline in Leeds' carbon emissions since 2000

This needs to be increased to

70% by 2025
85% by 2030
100% by 2050



Leeds has committed to work towards being
CARBON NEUTRAL
by
2030

That leaves a **big gap** but we can close it by the following options

COST-EFFECTIVE OPTIONS

Cost-effective options such as better housing and transport could close the 2030 gap by

41%



These would reduce Leeds' energy bill by

£651m

per year, and would create nearly
15,000
years of extra employment



MORE AMBITIOUS OPTIONS

More ambitious but expensive options could

close the 2030 gap by

60%

These would have **benefits for** health, equality, travel and the environment



Doing all the Leeds Climate Change Citizens' Jury's recommendations would close the 2030 gap by another

10%



REACHING OUR TARGET

Leeds can close the gap by

100% by 2030

through a range of **INNOVATIVE INTERVENTIONS**



These include

decarbonising heating and planting trees - changing some behaviours and consumption habits would take us further still



Net Zero by 2030



*Net-zero, like "carbon neutral", refers to achieving an overall balance between emissions produced and emissions taken out of the atmosphere, with any residual emissions removed through carbon sinks.



**PLACE-BASED
CLIMATE ACTION
NETWORK**



**LEEDS
CLIMATE
COMMISSION**

Contact details

Websites:

<https://pcancities.org.uk>

<https://www.leedsclimate.org.uk/>

Twitter:

@PCANcities

@LeedsClimateCom

Youtube:

<https://bit.ly/2MBw9Qw>