

# BRISTOL CLIMATE CHANGE

## The Results Explained

### Representing Bristol's UKCP results for a range of global average temperature increases over the 21st century

The UK Climate Projections (UKCP) is a tool that provides information about future climate for the UK. It delivers cutting-edge climate science with the most up-to-date assessment of how the climate may change in the future.

#### Main advances in UKCP:



State-of-the-art global climate models



Innovative regional climate models



Up-to-date observational data



Significant user engagement



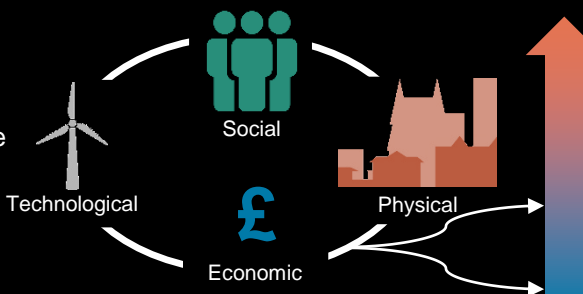
Locally relevant climate information to enhance resilience

### Why are there a range of UKCP results?

Our future climate is determined by ongoing and future greenhouse gas emissions. To capture this uncertainty about the future, the results for Bristol are from the UKCP probabilistic projections, which provide the most comprehensive assessment of uncertainty in UKCP.

#### What are RCPs?

Representative Concentration Pathways (RCPs) are used to describe possible futures based on assumptions about human activity and greenhouse gas emissions.



#### RCP8.5

Global greenhouse gas emissions grow unmitigated.

#### RCP4.5 and RCP6.0

Are two medium emission pathways, with varying levels of mitigation.

#### RCP2.6

Global emissions are strongly reduced.

#### How do these relate to changes in global temperature?

*RCP	**Change in Global Average Temperature (°C) by 2081-2100
RCP8.5	4.3 (3.2 – 5.4)
RCP6.0	2.8 (2.0 – 3.7)
RCP4.5	2.4 (1.7 – 3.2)
RCP2.6	1.6 (0.9 – 2.3)

\*\*This data is from the Intergovernmental Panel on Climate Change 5<sup>th</sup> Assessment Report (IPCC AR5), specifically WG1 Chapter 12 Table 12.3.

\*The RCP pathways represent a broad range of climate outcomes and are neither forecasts nor policy recommendations, however they offer approximate parallels for initial comparison.

We are already witnessing the impacts of a global average temperature rise of 1°C compared to pre-industrial levels.

The Paris Agreement aims to curtail greenhouse gas emissions so that the future global average temperature increase is capped at below 2°C, ideally at the lower limit of 1.5°C. Recent research by the UN suggests that rapid reductions in emissions, beyond those currently pledged as part of the Paris agreement, may be required to limit warming to well below 2°C. The Committee on Climate Change (CCC) has advised that the UK should plan for a 2°C rise as a minimum, whilst preparing for a 4°C rise.”



This factsheet is part of a set of prototype products, aimed at building a foundation of shared understanding and promoting robust use of the available UKCP climate change information.

The 'Bristol Climate Change' series includes:

**1 The Science**

**2 The Results Explained**

**3 UKCP Results**

**Find out more about ...**

**UK Climate Projections (UKCP)**

- <https://www.metoffice.gov.uk/research/approach/collaboration/ukcp>

**Factsheets headline findings for the wider UK**

- <https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-infographic-headline-findings-land.pdf>
- <https://www.metoffice.gov.uk/research/approach/collaboration/ukcp/factsheets>

**How to download and use the UKCP data using the Climate Projections User Interface (UI)**

- <https://ukclimateprojections-ui.metoffice.gov.uk/ui/home>
- <https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-guidance---how-to-use-the-land-projections.pdf>

**The historical data for Bristol, used to produce the climate stripes**

- <http://www.bristolweather.org/Historical.htm>

**Representative Concentration Pathways (RCPs)**

- <https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-guidance---representative-concentration-pathways.pdf>
- [https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5\\_Chapter12\\_FINAL.pdf](https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_Chapter12_FINAL.pdf)

This work was supported by the UK Research & Innovation (UKRI) Strategic Priorities Fund UK Climate Resilience programme. The programme is co-delivered by Met Office and NERC on behalf UKRI partners AHRC, EPSRC, ESRC.

