# Neath Port Talbot Council for Voluntary Service

Your local county voluntary council

# 12. Climate change

## 12.1 Introducing climate change

Having an understanding of climate change will make it easier for you to consider the possible impacts, manage your climate risks and make better decisions about planning for the future.

*Climate* refers to the average weather experienced over a long period of time. The Earth's climate has changed many times in response to natural causes – the term climate change usually refers to global warming that has occurred since the middle of the 19th century.

Natural and human factors both affect global climate. Natural causes include interactions between the ocean and the atmosphere, changes in the Earth's orbit and volcanic eruptions. Humans influence global climate through activities – especially industry and agriculture – that release greenhouse gases – such as carbon dioxide and methane – into the atmosphere.

These gases absorb energy that is radiated from the earth's surface, warming the atmosphere and increasing temperatures globally.

In 2007, the Intergovernmental Panel on Climate Change (IPCC), the world's most authoritative body on climate change, concluded that most of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in human-made greenhouse gas emissions.

### What are greenhouse gas emissions and carbon emissions?

Some of the gases that make up the earth's atmosphere are known as *greenhouse gases*. They trap heat and keep the earth warm, much like the glass of a greenhouse does. Without any greenhouse gases the earth would be too cold to live on. But as human activity emits extra greenhouse gases into the atmosphere, for example through car engines and home heating, the amount of greenhouse gases in the atmosphere is increasing. So, more heat is trapped and the world's overall temperature increases.

The majority of greenhouse gas emissions are made up of the gas carbon dioxide ($CO_2$), so we often talk about *carbon dioxide* or $CO_2$ as a short-hand for meaning greenhouse gas emissions. We also often just refer to *carbon emissions*.

When we talk about reducing carbon emissions that result from the activity of a person or organisation, we talk about *reducing our carbon footprint*.

## How is the UK's climate changing and why is it an issue?

Average global temperatures have increased by 0.7°C since 1900 (http://ncar.ucar.edu/learn-more-about/climate). The Central England Temperature, which has been measured since 1659, shows an increase of about 1C since 1980, after a period of relative stability for much of the 20th century. As global temperatures continue to rise, we are likely to experience more extreme weather such as heat waves and storms. Sea levels will also rise. These changes will cause disruption to natural habitats and human communities, such as frequent localised flooding and drought. Communities may struggle to cope with the changes and need to be supported to adapt to a changing climate.

## Climate change mitigation and adaptation

*Mitigation* refers to actions that reduce our contribution to the causes of climate change. This means reducing our emissions of greenhouse gases, such as carbon dioxide ($CO_2$), through energy efficiency and using alternative forms of transport and energy.

It is only by reducing our greenhouse gas emissions that we can minimise human-made climate change. Many of the measures to help reduce emissions may also have other benefits such as saving money and encouraging a more sustainable society.

*Adaptation* is an essential part of addressing the impacts and opportunities created by our changing climate. Despite our efforts to limit the human-made causes of climate change, some climate change will be inevitable. So, effective measures to enhance our capacity to adapt (building adaptive capacity) and to adjust to the consequences of climatic change (delivering adaptation actions) are vital.

The response to mitigation and adaptation are closely related and can often benefit from being considered together.

## Welsh Government

The Welsh Government is committed to tackling climate change. Their Climate Change Strategy and the Delivery Plans outlines its commitment and describe where it will work with partners to reduce greenhouse gas emissions and enable effective adaptation.

http://wales.gov.uk/topics/environmentcountryside/climatechange/tacklingchange/strategy/walesstrategy/?lang=en

## Climate Change Commission

The Commission is an important forum for driving forward our programme of action to tackle the causes and effects of climate change.

One of the challenges in responding to climate change is the need to build a broad consensus. This helps inform and deliver action through the public sector, businesses and voluntary sector organisations and individuals and communities in Wales. The Commission brings together leaders and representatives from Welsh society, business, academia, agriculture, the voluntary sector, environmental groups, political parties and local government.

http://wales.gov.uk/topics/environmentcountryside/climatechange/tacklingchange/strategy/commission/?lang=en

## Sources of further information

You can find out more about climate change adaptation from the **UK Climate Impacts Programme (UKCIP)** at www.ukcip.org.uk/essentials.

In this booklet, you can find out more about how Wales will be affected by the impacts of climate change and what we will need to do to adapt to them.

http://wales.gov.uk/topics/environmentcountryside/climatechange/tacklingchange/strategy/impactsforWales/publications/impacts/?lang=en

**STERN REVIEW: The Economics of Climate Change**

www.hm-treasury.gov.uk/d/Executive_Summary.pdf

## What next?

The rest of the Information Sheets in section 12 will enable you to find out why climate change is important to you and what you can do about it.

**Disclaimer**
The information provided in this sheet is intended for guidance only. It is not a substitute for professional advice and we cannot accept any responsibility for loss occasioned as a result of any person acting or refraining from acting upon it.

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