



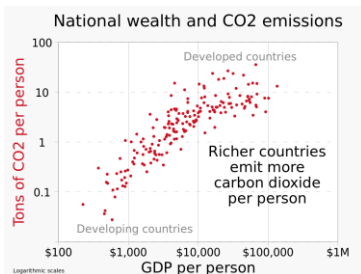
# Climate Change

## What are the problems?

- Earth's climate has changed many times in the distant past due to natural events like volcanic activity, but those changes happened slowly over thousands of years. Today's climate change is taking place over a much, much shorter time period and it is being caused by human activity
- Since the industrial Revolution we have been burning coal, oil and gas (fossil fuels) to create energy, which releases carbon dioxide (CO<sub>2</sub>) and methane into the atmosphere. Although these "greenhouse gases" only make up a small part of the atmosphere they have a big effect on the planet's temperature – think of a drop of ink in a glass of water. They trap some of the heat from the sun which would normally "bounce" back into space
- Most of the extra heat is being absorbed by the oceans – at a rate equivalent to 1 atomic bomb per second. That heat drives sea level rise, makes typhoons and hurricanes much stronger and endangers marine life. But more worryingly it is now affecting the circulation of the oceans themselves, including the Gulf Stream. If that collapses it would severely disrupt the rains that billions of people depend on for food in India, South America and West Africa; increase storms and lower temperatures in Europe; and push up the sea level off eastern North America. It would also further endanger the Amazon rainforest and Antarctic ice sheets
- Climate change alters established weather patterns, leading to longer and more frequent droughts and heatwaves, and more intense rainfall and flooding. This poses a threat to our food and water supplies, even here in the UK

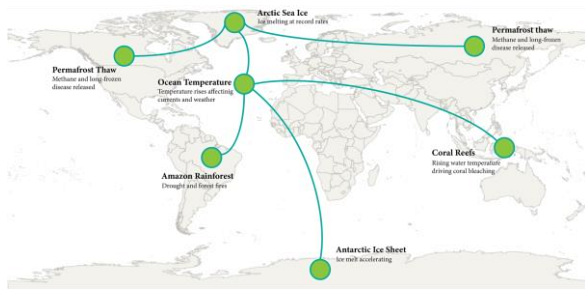
## Climate Justice

Climate change does not affect everywhere equally. It's likely that the global south will suffer more of its harsher effects than the north, while the north is far more responsible for causing the warming. This raises questions of climate justice, such as loss and damage reparations and immigration policies. People who are already disadvantaged due to inequality are also likely to suffer more. And there is the issue of what moral debt we owe to future generations.



## Tipping Points

Climate scientists have identified thresholds which, if passed, could trigger devastating and irreversible changes to the climate system. If we pass any of these “tipping points” the chances of unstoppable global



heating are greatly increased, even if we stopped all carbon dioxide emissions overnight. The more humans warm the planet, the more likely it is we will reach one or more tipping points; and although no-one can predict exactly when or at what temperature this will happen, the science suggests we are already very close to triggering at least 6 of them. What’s more, as many of these thresholds are interlinked, if we trigger one it increases the likelihood of triggering others in a cascade effect. These interactions are called “feedback loops”.

## How will climate change affect us in Weymouth?

- We are already suffering minor food shortages due, in part, to extreme weather in Europe. Further shocks here or abroad could result in much higher prices and even the possibility of there not being enough food for everyone
- We are likely to see more frequent and stronger storms and dangerously long and hot heatwaves, damaging property and endangering lives
- Flood events caused by storm surges from the sea and high-intensity rainstorms will happen more often
- Projections show areas of Melcombe Regis, Westham and Weymouth town centre could be underwater by 2050

## What can we do about it?

Some of the most effective measures to combat climate change must be done at national and international level. But there is still an awful lot we can do as individuals, businesses and communities, in conjunction with our local councils. From cycling more often to setting up car sharing schemes, from insulating our homes to establishing a local renewable energy grid, from reducing food waste to creating community growing projects, local changes are an essential part of the battle.

Have a look around the climate hub or speak to a volunteer to find your niche.