

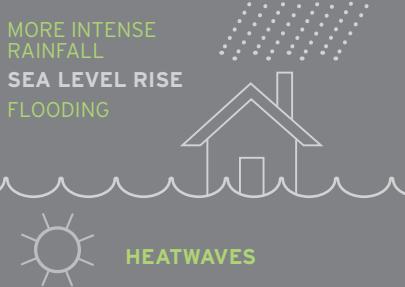
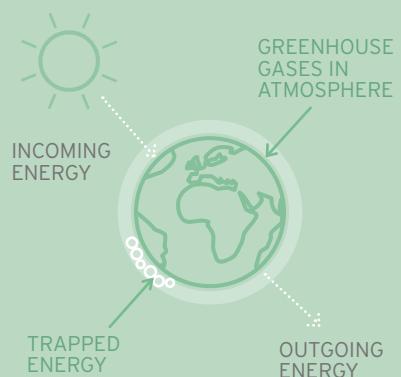
## WHY ARE PEOPLE TALKING ABOUT CLIMATE CHANGE?

Scientists have observed that the Earth's climate is changing. These changes are happening quickly and can be seen all around the world. The most well recognised change is the increase in the global temperature. This is called global warming. The terms global warming and climate change are often used interchangeably. Over the last century the global temperature has increased by almost 1°C.

## WHAT IS CAUSING THIS RAPID CHANGE IN CLIMATE?

The air we breath is made up of many gases such as nitrogen and oxygen. These two gases do not affect the climate but a small set of other gases do. These gases are known as greenhouse gases. The way they do this is complex. Like a greenhouse, they allow energy from the sun to heat up the Earth and trap some of that energy in the climate system. Since the industrial revolution, human activities, such as burning fossil fuels and land-use change, for example, turning peatland into agricultural land and deforestation, have caused the level of greenhouse gases such as carbon dioxide ( $\text{CO}_2$ ), methane ( $\text{CH}_4$ ) and nitrous oxide ( $\text{N}_2\text{O}$ ) to increase in the atmosphere. The levels of these gases in the atmosphere are higher than they have been for at least 800,000 years. This means more energy is being trapped causing rapid changes in global temperature and climate.

°C  
GLOBAL TEMPERATURE HAS INCREASED BY ALMOST 1°C



## HOW DOES THIS AFFECT US GLOBALLY?

As well as increasing the global temperature, changes are seen in rainfall patterns, loss of sea-ice and glaciers, sea-level rise, and changes in ecosystems including the length of the growing season and animal movements. All of these changes affect us through changes in extremes such as heatwaves and intense rainfall. Sea-level rise will increase the likelihood of coastal flooding and erosion. Continued emissions of greenhouse gases may cause major global changes including flooding of major cities and coastal regions and reducing the capacity to produce food.

## WHAT IS IRELAND DOING ABOUT CLIMATE CHANGE?

Ireland has detailed records of its greenhouse gas emissions since 1990. They show that these emissions peaked in 2001 and have decreased by over 15% since then. In 2015 Ireland emitted just under 60 million tonnes of greenhouse gases. That is around 12 tonnes of greenhouse gas emissions for each person in Ireland, the fourth highest per person emissions in the European Union (EU). The reduction in emissions since 2006 were largely as a result of the economic downturn. Increased electricity generation from renewables and improved energy efficiency have also worked to reduce emissions. In recent years, with increased economic activity, emissions have increased. EPA projections suggest that this trend will continue up to 2020 unless additional actions are taken.

Under agreed EU targets, Ireland is required to reduce its greenhouse gas emissions by 20% by 2020 relative to 2005 levels over the period 2013 to 2020. Projections and trends suggest that Ireland will EXCEED its annual emissions limits and will miss its 2020 targets. Overall it is a huge challenge to transition to a low-carbon economy and society by 2050. The Government's current National Mitigation Plan starts to set out a pathway to how this transition is achieved. Urgent action is required to bring Ireland on to a low-carbon pathway, so that we can play our part in avoiding dangerous climate change.

IRELAND'S GREENHOUSE GAS EMISSIONS



## WHAT DOES CLIMATE CHANGE MEAN FOR IRELAND?

In Ireland it is already possible to observe the impact of climate change in our environment.

Irish weather is being influenced by changes in the global water cycle and changes in atmospheric conditions. Our coastlines are already experiencing the impacts of rising sea levels.

These changes can be observed as an increase in temperature by around 0.8°C over the last 100 years. The number of warm days in a year has increased while the number of frost days has decreased. Annual rainfall in Ireland has increased by 6 cm compared to rainfall 40 years ago. Ireland is currently experiencing increases in sea level of around 3.5 mm per year

### PROJECTED IMPACTS OF CLIMATE CHANGE ON IRELAND INCLUDE:

- increasing average temperature
- more extreme weather conditions including rainfall events
- an increased likelihood of river and coastal flooding
- water shortages, particularly in the east of the country
- changes in the types and distribution of plants and animals
- the possible extinction of some vulnerable species

Ireland will need to adapt to the impacts of climate change. The Government plans to publish a National Adaptation Framework by the end of 2017. This will set out how Ireland will adapt to climate change. Government departments, agencies and local authorities will then work together to make sectoral and local plans for adaptation.

Climate change impacts are projected to increase in the coming decades and during the rest of this century. Uncertainties remain in relation to the scale and extent of these impacts, particularly during the second half of the century. The greatest uncertainty lies in how effective global actions will be in reducing greenhouse gas emissions.

### EXTREME WEATHER



### INCREASE IN TEMPERATURE



### SPECIES LOSS



### CHANGES TO PLANT & ANIMAL DISTRIBUTIONS

### WATER SHORTAGES

### FLOODING

## WHAT ACTION IS BEING TAKEN TO TACKLE CLIMATE CHANGE?

Ireland along with 196 other countries around the world have joined together under the Paris Agreement. It sets out a global action plan to put the world on track to avoid dangerous climate change by limiting global warming to well below 2°C.

Ireland has committed itself to cutting emissions from electricity generation, the built environment and transport by 80% by 2050, and in parallel is working towards achieving carbon neutrality in the agriculture and land use sector by 2050. Carbon neutrality means balancing emissions and removals of carbon dioxide from the atmosphere.

Ireland's Climate Change Advisory Council has said that Ireland must act urgently to implement new policies and measures to reduce emissions of greenhouse gases.

Ireland has committed itself to international efforts to combat climate change and will need to meet its EU targets to play its part in ensuring the Paris Agreement is a success.



IRELAND IS COMMITTED TO CUTTING CO<sub>2</sub> EMISSIONS BY 80% & WORKING TOWARDS CARBON NEUTRALITY BY 2050

