US President Donald Trump has announced that he is withdrawing his country from the Paris climate change agreement. The Paris Agreement was signed by 197 countries in October 2015. Each nation promised to take tough action to stop the threat of climate change. The main goal is to make sure a global temperature rise is well below 2°C above pre-industrial levels (before the 19th century, when industry became widespread).

Mr Trump said he withdrew the US from the deal because it was his duty to protect “America and its citizens”. He described it as “disadvantageous to the US” and said it punished the country. The withdrawal process takes four years.

The decision was criticised straight away by dozens of world leaders. French president Emmanuel Macron tweeted “Make Our Planet Great Again” – a dig at Mr Trump’s election slogan, “Make America Great Again”. Mr Macron joined the leaders of Italy and Germany in issuing a joint statement criticising Mr Trump’s decision. The Canadian Prime Minister, Justin Trudeau, called it “deeply disappointing”. Former US president Barack Obama released a statement saying the US was now rejecting the future.
SO WHAT IS CLIMATE CHANGE?

Climate change is a large and long-term change in the Earth’s weather patterns and average temperatures. Since the last ice age about 11,000 years ago, our planet’s climate – the average temperature of its surface – has been stable at about 14°C. But recently the average temperature has been increasing. According to US space agency NASA, the planet’s average surface temperature has risen about 1.1°C since the late 19th century, due mostly to increased carbon dioxide and other human-made emissions into the atmosphere. Although 1.1°C may not sound a lot, it is a very high rise compared to other temperature changes in the history of the planet, and is already having a negative impact.

WHAT CAUSES CLIMATE CHANGE?

The sudden and rapid increase in the Earth’s average temperature has been caused by the greenhouse effect. This is the process whereby greenhouse gases such as carbon dioxide and methane enter our atmosphere, absorb then re-emit heat being radiated from the Earth. This traps the warmth and causes the average temperature of the Earth’s surface to rise. Climate change is also referred to as global warming.

WHAT ARE GREENHOUSE GASES?

Greenhouse gases are gases that contribute to the greenhouse effect by absorbing infrared radiation (heat). The main greenhouse gases in the Earth’s atmosphere are water vapour, carbon dioxide, methane, nitrous oxide and ozone. Carbon dioxide in particular is emitted by the burning of coal, gas and oil and the chopping down of forests (deforestation).
WHY IS THIS HAPPENING NOW?

The planet has gone through cycles of warming up and cooling down before, but the current warming trend is especially worrying because most of it is extremely likely (greater than 95% probability) to be the result of human activity since the mid-20th century. The burning of fossil fuels such as coal, gas and oil is the primary cause of greenhouse gases entering our atmosphere and causing global warming.

There has been a big increase in the burning of fossil fuels and therefore the amount of greenhouse gas emitted since the Industrial Revolution, which took place in the 19th century. This was the period when machines began to do the jobs that were previously done by humans, and it is when coal began to be used in huge quantities to power those machines. In the 20th century, industry expanded, and as the global population enlarged, the burning of fossil fuels increased.

Within the past 200 years or so, human activity such as building machinery, power plants, air and car travel has increased the amount of carbon dioxide in the atmosphere by 40%.

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**AMOUNT OF CARBON DIOXIDE IN THE EARTH’S ATMOSPHERE THROUGHOUT HISTORY**

FOR CENTURIES, ATMOSPHERIC CARBON DIOXIDE HAD NEVER BEEN ABOVE THIS LINE.

CURRENT LEVEL 2017

1950 LEVEL
The USA is the second biggest polluter in the world. It contains around 5% of the world’s population, but contributes about 15% of the carbon dioxide emissions that are heating the planet.

China is the biggest polluter, with 30% of the total carbon dioxide emissions.

Historically, though, the US is the planet’s number 1 polluter, according to records from 1970-2014.

In Alaska, western Canada, and eastern Russia, average temperatures have increased as much as 3 to 4°C in the past 50 years.

16 of the 17 warmest years on record have been since 2001.

Air travel contributes 13-15% of the UK’s total greenhouse gas emissions.

Global average sea levels have risen 178mm over the past 100 years – 3.4MM per year.

WHAT CHANGES HAVE WE ALREADY SEEN?

There are already visible differences to the planet that are affecting day-to-day lives.

### SEASON CHANGES

In many countries including the UK, the seasons are shifting. Spring has been starting earlier and autumn later. This affects many species of wildlife, with birds changing their migration patterns and certain summer insects appearing later in the year and well into what used to be autumn.

### SEA LEVELS

According to the Met Office, the UK’s national weather service, sea levels have risen on average by about 10cm around the UK. US space agency NASA says they have risen by 20cm globally since 1900 due to warming and ice melting. The rate at which the sea levels have risen in the last two decades is nearly double that of the last century. Five tiny Pacific islands have already disappeared due to rising seas, and six other Pacific islands had large parts of land washed into the sea, destroying some villages and forcing people to move. In the future, countries such as the Netherlands and US states including Miami could be completely flooded.

A village in Indonesia, where sea levels have risen

Continued on the next page
WHAT CHANGES HAVE WE ALREADY SEEN?  

■ WARMING OCEANS

Oceans, which cover more than 70% of the surface of our planet, are absorbing much of the planet’s increased heat. The top 700 metres of oceans worldwide have warmed since 1969. In addition, both the amount and thickness of Arctic sea ice has declined fast over the last several decades.

■ EXTREME WEATHER

Extreme weather is happening more and more. Since 1950, the number of occasions of record high temperatures in the US, UK and elsewhere has been increasing, while the number of occasions of record low temperatures has been decreasing. There are more extreme storms with more rainfall, too, and there are more severe droughts.

■ MELTING GLACIERS

Glaciers, which are large, thick ice masses made up of compressed snow over hundreds or thousands of years, are melting fast. They occupy about 10% of the world’s surface. According to data from NASA satellites, 46 gigatons of ice from Alaskan glaciers was lost on average each year from 2003 to 2010. A gigaton is equivalent to 1 billion tons.
WHAT CAN COUNTRIES DO?

President Trump has decided that the US will not play a part in the global effort to combat climate change. America is a superpower responsible for a huge portion of total global emissions, but, for now at least, it will not be leading the fight against climate change. So what can the rest of the world do, and will it be enough to make a real change?

STICK TO THE PARIS AGREEMENT

Nearly 200 countries are still part of the Paris Agreement. Most of them have confirmed their commitment to the agreement’s goals and have promised to set tough national targets in order to achieve the global target of keeping a global temperature increase below 2°C.

ENCOURAGE US STATES TO PARTICIPATE

Although Mr Trump is the president of America, the country is made up of 50 states, and each has a lot of power. After the announcement that the US was quitting the Paris deal, more than 1,200 US mayors, companies, university presidents and state governors pledged to uphold the Paris Agreement. Already, 13 states have signed up to the US Climate Alliance, a new organisation formed by governors (a governor is the political leader of a state). They are some of the biggest states with the largest populations: New York, California, Washington, Connecticut, Delaware, Hawaii, Massachusetts, Minnesota, Oregon, Rhode Island, Vermont and Virginia have all joined – and others may follow. Countries around the world could support this initiative and encourage other states to join in, which would be a way of getting the US to cut emissions.

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WHAT CAN COUNTRIES DO? Continued from previous page

**ENCOURAGE GREEN ENERGY**
Most governments around the world accept that more must be done to prevent climate change. This includes using more renewable (resources that don’t run out) energy sources, such as water, sun and wind, and fewer fossil fuels such as oil, gas and coal.

**HELP DEVELOPING COUNTRIES**
Developing countries, where poverty is more widespread and there is less money to spend on green projects, are among the world's biggest polluters.
Even though America is pulling out of the Paris Agreement, the countries still involved could do more to help countries such as India to convert to green energy sources and rely less on coal. This could be achieved by loaning money to develop renewable energy.
President Obama pledged $3 billion (£2.3 billion) to an international fund meant to help developing countries worst hit by climate change. Only $1 billion of that had been transferred to the fund by the time President Trump took office in January, and the rest may never be paid now that the US has quit the Paris Agreement. Perhaps the rest of the world now needs to step up.

**LOOK TO CHINA TO LEAD THE WAY**
The Chinese are the world's biggest polluters, but they are also taking the lead in green policies. Firstly, they are re-foresting parts of the country: forest cover has grown from 8.6% of the country in 1949 to more than 20% today. China has installed more wind power machinery than any other country, and adds more each year than everyone else. It is also one of the top countries in the world for installed solar power capacity. With China spending so much on making their country greener, can they lead the world on this instead of America?
THE BIG DEBATE
CAN THE GLOBAL COMMUNITY TACKLE CLIMATE CHANGE WITHOUT THE US?
Friday 16th June 2017

YES, THE REST OF THE WORLD CAN TACKLE CLIMATE CHANGE WITHOUT THE US

1. THE US IS JUST ONE COUNTRY – It may be a superpower but America is just one country, and there are more than 190 others signed up to the Paris Agreement. If everybody does their bit, climate change can still be tackled.

2. STATES ARE STEPPING UP – The president and national government may have pulled out of the Paris Agreement, but at least individual states are working hard to keep it alive – and that makes a huge difference.

3. THERE IS SIMPLY NO OTHER CHOICE – Climate change is too serious an issue for the rest of the world to give up on. It’s unfortunate that President Trump has pulled his country out of the deal, but the rest of us have no choice but to take big steps to reduce pollution and global warming.

NO, THE REST OF THE WORLD CAN'T TACKLE CLIMATE CHANGE WITHOUT THE US

1. THE US IS A BIG POLLUTER – America is one of the world’s biggest polluters. Without the US in the Paris Agreement, it’s going to be very hard, or even impossible, to keep global temperatures down.

2. THE US LEADS THE WORLD – As a superpower, the US is an important country that many others look up to. Without their leadership, countries will feel less committed to taking action to lower global temperatures.

3. NO OTHER COUNTRY HAS AS MUCH INFLUENCE – China, Russia and the European Union are important, but America probably has more influence globally than all other countries. President Obama promised $3 billion to help developing countries combat climate change, for instance. Without such a strong influence, we can’t expect to tackle climate change as effectively.
What more could the UK do to combat climate change?

What more could other rich countries, such as Germany, France and Australia, do?

What do you think about President Trump’s decision to quit the Paris Agreement?

How important is climate change to the future of the planet?

Should powerful countries such as China and Russia step up to lead the world response to climate change?

Should we be helping poorer countries to go green?

Have you witnessed the effects of climate change?

Will the Paris Agreement succeed without the USA?