

“China Promises Cleaner Energy”

After many years of refusal, China, the world's biggest emitter of greenhouse gases sets targets for cleaner energy.

Commitment boosts investment and research into alternative fuels.

MOVE FORWARD 2 SPACES

European Union (EU) 2030 Climate and Energy Framework

In 2014 all EU Member States committed to:

- 40% reduction in greenhouse gas
- 32% energy from renewable resources
- 32.5% improvement in energy efficiency.

Commitment boosts investment and research into alternative fuels.

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“Fracking provides cheap, plentiful natural gas”

Fracking is the drilling of shale rocks to release natural gas and oil. It widely used in the USA, but no fracking is taking place in the UK yet.....

Fracking has been linked to earth tremors and is still a fossil fuel which produces GHGs

Fracking diverts attention and research from alternative fuels.

MOVE BACKWARDS 2 SPACES

“Biofuels are driving food prices higher”

Land vital for food crops in developing countries is being turned over to grow biofuels, causing food shortages and price rises.

30 million people are thought to be starving as a direct result of biofuels.

Food fuels compete with food for land
MOVE BACKWARDS 2 SPACES

Fibre fuels, Algal fuels and Waste Gas fuels do not.

MOVE FORWARDS 2 SPACES

Scientists agree: “Global warming is man-made”

Hundreds of Scientists now agree that the climate is warming and that it is 95% likely to be caused by human behaviour.

This boosts investment and research into alternative fuels.

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“Australia Burns”

The devastating bush fires of 2019-2020 horrified the world. Subsequent scientific assessment suggests that global warming boosted bushfire risk by at least 30%.

Public suffering and awareness boosts investment and research into alternative fuels.

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NASA Evidence – “Climate change is real”

NASA (the US Space Agency) monitors global warming and reports that 9 of the 10 warmest years on record have occurred since the year 2000.

NASA links global warming to the rising levels of GHG.

This boosts investment and research into alternative fuels.

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US President Trump on Climate Change “I don’t believe it”

President Trump continues to deny climate change and support the use of fossil fuels. He has announced his intention to withdraw from the Paris Agreement.

Denial over global warming has a negative effect on investment and research into alternative fuels.

MOVE BACKWARDS 2 SPACES

“Two Degrees and Climate Politics”

In the 1975, Yale professor William Nordhaus suggested that global warming of more than 2°C above pre-industrial levels could be dangerous.

Finally, 40 years later, in 2015, at the United Nations Climate Conference in Paris, 195 nations agreed to limit human-caused global warming to no more than 2°C

Commitments to cleaner energy boost investment and research into alternative fuels.

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“Brazil Promises Reforestation and Cleaner Energy”

Brazil is one of the top 10 GHG emitters, mainly because of tropical rainforest destruction for agriculture, which would otherwise “soak” up the CO₂.

In June 2015 Brazil promised to increase its share of renewable energy and restore some forests — an area as big as England — by 2030.

Commitments to reforestation and cleaner energy boost research into alternative fuels.

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“Energy Security” (constant supply of energy at an affordable Price)

Many factors affect our energy security including:

- Diminishing reserves - Oil is estimated to run out in 40 years.
- Political unrest - Most UK oil is imported from politically unstable regions, like the Middle East, where war and unrest can affect supply.
- Accidents and natural disasters

Alternative fuels allow countries to be more self-sufficient and gives them greater energy security.

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“Black Carbon is Choking Cities in India and China”

Black carbon, or soot, is produced by burning fossil fuels and farm waste. It contributes to global warming and causes sooty smogs in big cities particularly in India and China, where they are linked to heart and lung disease, cancer and birth defects.

Public suffering and awareness boosts investment and research into alternative fuels.

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“India is Getting Hotter”

Every year India experiences severe heat waves in summer, but in 2015, casualties were abnormally high with more than 2,300 deaths.

According to a U.N. study, India is getting hotter and this is linked to an increase in GHG.

Public suffering and awareness boosts investment and research into alternative fuels.

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“Climate Change Boosts Flash Floods in the UK”, says Met Office Study

Flash flooding has devastated many UK communities in recent years and a recent Met Office study suggests global warming is at least partially to blame.

Public suffering and awareness boosts investment and research into alternative fuels.

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“NASA Study Finds GHG Increase Risk of U.S. Megadroughts”

Droughts are a regular event in North America, where they cause forest fires and crop failure, but a recent NASA study suggests they are getting more frequent and lasting longer as a result of greenhouse gases.

Public suffering and awareness boosts investment and research into alternative fuels.

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“Petrol Prices Fall”

Current low petrol prices may seem like good news for the motorist, and indeed in the short-term we all benefit. However in the long-term we are wasting a precious resource by burning it as well as producing greenhouse gases.

Cheap oil diverts attention and research from alternative fuels and can only be a temporary fix.

MOVE BACKWARDS 2 SPACES

“The Greta Thunberg Effect”

Born January 2003, this young Swedish environmental activist captured the attention of the world when she addressed 2018 United Nations Climate Change Conference. Since then she has spoken at many other conferences and organised school strikes.

Public awareness boosts investment and research into alternative fuels.

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“The Paris Agreement 2015”

This is an agreement within the United Nations, initiated at the Climate Summit in Paris 2015, dealing with climate change. The long-term temperature goal is to keep temperature increase well below 2°C by setting specific emissions targets. By February 2020 all UN countries had signed.

Commitments to cleaner energy boost investment and research into alternative fuels.

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“Government Commits to Science”

We all pay tax and some of this is used by the government to fund scientific research. In recent years the science budget has been protected allowing research to continue.

**THROW THE DIE TO SEE HOW MANY
NEW SCIENTISTS YOU CAN EMPLOY TO
FURTHER YOUR RESEARCH**

**MOVE FORWARD THIS NUMBER OF
SPACES**

“Two Heads Are Better than One”

There are many examples to show that scientific collaboration gets results more quickly. e.g. “The Human Genome Project” involved scientists from 6 countries and took only 13 years to identify all the genes needed to make a human.

**CHOOSE A COLLABORATOR, THEN
THROW THE DIE TO SEE HOW FAR
YOUR RESEARCH PROGRESSES
YOU AND YOUR COLLABORATOR MOVE
FORWARD THIS NUMBER OF SPACES**