

## Code Red for Humanity

Today, 9 August 2021 at 09.00 the IPCC (International Panel for Climate Change) issued part one of their latest report. “Humanity’s damaging impact on the climate is a statement of fact.” “ With the present levels of emissions, key temperature limits of 1.5 degrees could be broken in just over a decade and a rise in sea levels approaching 2 m by the end of the century cannot be ruled out.” “There is unequivocal evidence that human influence has warmed the atmosphere, oceans and land.”

There is however a new hope that deep cuts in greenhouse gas emissions could stabilise rising temperatures.

This is the sobering assessment of the IPCC.

<https://www.ipcc.ch/reports/>

Produced by the combined thinking from 195 governments, officials and scientists, the report, just 42 pages long, highlights the stark reality of the effects of Global Warming. We have seen in recent weeks the devastating effects of extremes of weather; droughts and excessive high temperatures leading to forest fires in Greece and California, flooding in Central Europe, flash flooding in China, London and Glasgow. Advanced computer modelling over the past few years has swept away any doubt that these extreme weather related events are the result of ever growing global temperatures and that they are man-made, caused by the continued rise in carbon emissions.

The report will be used by Governments and industries everywhere to understand the threats ahead.

What is the IPCC?

IPCC stands for Intergovernmental Panel on Climate Change. It’s the United Nations’ climate-science-focused organization and every seven years they produce their report which is essentially an update on “the state of the climate, “ where they summarise the most up-to-date, peer reviewed research on the science of climate change, its effects and the ways necessary to adapt to and mitigate it.

The timing of the report is significant as it will be influential in discussions at Cop 26, 1st—12th November. The conference will try and find agreement as to how to keep global temperature increase below 1.5 degrees if we are not already too late.

What is Cop 26?

COP stands for Conference of the Parties, and will be attended by countries that signed the United Nations Framework Convention on Climate Change (UNFCCC) - a treaty agreed in 1994. The 2021 meeting will be the 26th meeting, which is why it's called COP26.

Alok Sharma (U.K. Government Minister) who is leading the forthcoming Cop 26 climate summit has recently said “the world is dangerously close to running out of time to stop a climate change catastrophe.”

What are the key headline findings from the report? (Taken from <https://www.gov.uk/government/publications/ipcc-fifth-assessment-report-working-group-3-report-on-mitigation-of-climate-change/key-points-and-questions-ipcc-working-group-3-report-on-mitigating-climate-change#what-are-the-key-headline-findings-from-the-report>)

“Greenhouse gas emissions are still rising, and the rate of increase has itself been increasing – most of this increase is being driven by increasing global prosperity.

On a business-as-usual pathway, global mean temperatures will increase by 3 to 5 degrees over pre-industrial levels by the end of the century.

Staying under the 2 degree limit is possible but increasingly difficult – it will require a wide range of changes, including changes in technology, institutions and behaviours.

Efforts to reduce emissions needs to take place across all sectors (e.g. energy, transport, agriculture) and all regions – reductions in demand for energy (through, for example, energy efficiency measures) can play a big part.

Many countries already have policies in place to reduce emissions, but much more needs to be done – investment in clean technology needs to be massively scaled-up and mitigation policies need to be integrated into broader political considerations, such as growth, jobs and the environment.

Dealing with climate change needs international action – this is a ‘commons’ problem and requires international cooperation to solve it.”

How high are GHG emissions today and what are the sources?

The report shows clearly what GHG emissions are today. It reports that:

Annual emissions, at around 50 billion tonnes of carbon dioxide equivalent, have never been higher.

Fossil fuel combustion is the largest source of emissions (approximately 2/3rds), and the largest driver of growth, with other significant contributions from industry and agriculture.

Population growth has an impact on emissions but the biggest driver of increasing emissions is the rise in global prosperity – as people across the world, particularly in Asia, move out of poverty their consumption of energy increases and with it their fossil fuel use also increases.

In the future, without a rapid move to low-carbon technologies, global emissions are projected to increase further – this increase will be driven particularly by further increases in prosperity (rather than population) in developing countries.

How quickly do we have to reduce GHG emissions?

The report considers a range of different possible futures (‘emissions scenarios’) ranging from those where emissions grow rapidly throughout the century to those where rapid decarbonisation leads to a very quick decrease in GHG emissions. It shows that there are a number of different emissions scenarios which are ‘more likely than not’ to avoid exceeding the 2 degree target – all these scenarios require global emissions to peak no later than 2030 and decline rapidly thereafter:

In 2050 global emissions would need to be about half what they are today.

'Negative emissions' (i.e. removing CO<sub>2</sub> from the atmosphere through a variety of techniques) may be necessary in the 2nd half of the century to stay beneath the 2 degree target.

Current global efforts to reduce emissions (the 'Cancún pledges') are consistent with avoiding exceeding a temperature increase of 3 degrees, but more needs to be done if to stay beneath the 2 degree target.

#### Is it possible to reduce emissions to the levels required?

The report confirms that:

Deep cuts in GHG emissions to limit warming to 2°C relative to pre-industrial levels remain possible, yet will entail challenging changes.

In the last few years many renewable energy technologies have got cheaper and improved in performance. A growing number of renewable energy technologies are now mature enough to be delivered at scale.

Demand reductions achieved through energy efficiency and behavioural change will play a key role in realising the necessary emissions reductions. Demand reduction reduces the need for spending on new power stations and the associated infrastructure.

Decarbonisation of electricity, through renewables, nuclear and carbon capture and storage (CCS), will need to happen rapidly, with the majority of electricity provided by low-carbon sources by the middle of the century.

There is high agreement that nuclear power can play a big role in reducing emissions. Insulation of existing buildings, and application of new technology in construction, can play a large role in reducing emissions from buildings. A range of approaches can reduce emissions from industry. The IPCC is increasingly optimistic about the ability for the transport sector to play a role in mitigation.

Ambitious action to reduce emissions will have a range of additional benefits. It can help improve air quality and energy security as well as drive improvements in human health, ecosystems, resource availability and the resilience of the energy system.

#### What are the implications of the findings for the UK?

The report does not focus on individual countries. In the UK:

We have significantly increased UK deployment of renewable electricity and are taking steps to build new nuclear power stations and carbon-capture and storage power stations – this will increase the generation of low-carbon electricity in the UK.

We have achieved a lot on energy efficiency in the UK: Insulating millions of homes, improving business efficiency and shifting to more efficient vehicles. There is more to do, in particular through further efforts on insulation, and shifting to low-carbon transport.

We are supporting progress internationally: By pressing the EU to move to a 30% emissions reduction target by 2020 and 50% by 2030; agreeing, as part of the EU, with other countries to enter the second commitment period of the Kyoto Protocol; by working on changing the global political conditions; and by working on the 2015 agreement.

As a leading industrialised nation it is right that the UK take a lead, alongside other industrialised countries, in delivering emissions reductions. However, we recognise that climate change is a problem that requires a global solution and we shall continue to focus on achieving a global deal

#### What are the costs and benefits of mitigation?

Ambitious mitigation will slightly slow the rate of global economic growth. To put this into context, the report shows that experts expect the global economy to grow by between 300% and 900% by 2100. Set against these growth levels, it is estimated that global consumption would be around 5% less than it would have been had mitigation not taken place.

These estimates do not include the costs of failing to tackle climate change – the Working Group III report only considers the cost of action, not the cost of failure to act. A comparison between the costs of action and inaction will be presented in the synthesis report in October.

It is also important to note that these costs do not include the benefits of climate action – cleaner air, healthier lifestyles and diverse energy supplies all offer economic benefits. Evidence suggests that the benefits from improved air quality alone are equal to the costs of taking action – that is, measures to reduce emissions pay for themselves even before the climate benefit is taken into account. Mitigation would avoid millions of premature deaths from poor air quality over the course of the century.

#### What has changed since the last report?

Sadly, sufficient steps to tackle global greenhouse gas emissions have yet to be taken and as a result emissions have risen.

From its last major review of six years ago, the report does provide a strengthened body of evidence on how emissions can be reduced (so-called 'emissions pathways') in order to avoid exceeding the 2 degree limit.