Summer update and the latest UK CCC report to Parliament.

Where are we now?

Philip Oliver to Farnham U3a Climate Change Group

Agenda

- A quick look back
- Since we last met
- How is the UK doing?

A Quick Look Back

Farnham u3a Climate Change Group

The Essential Truth About Climate Change in Ten Words

The basic facts of climate change, established over decades of research, can be summarized in five key points:

IT'S REAL

Global warming is happening.

IT'S US

Human activity is the main cause.

EXPERTS AGREE

There's scientific consensus on human-caused global warming.

IT'S BAD

The impacts are serious and affect people.

THERE'S HOPE

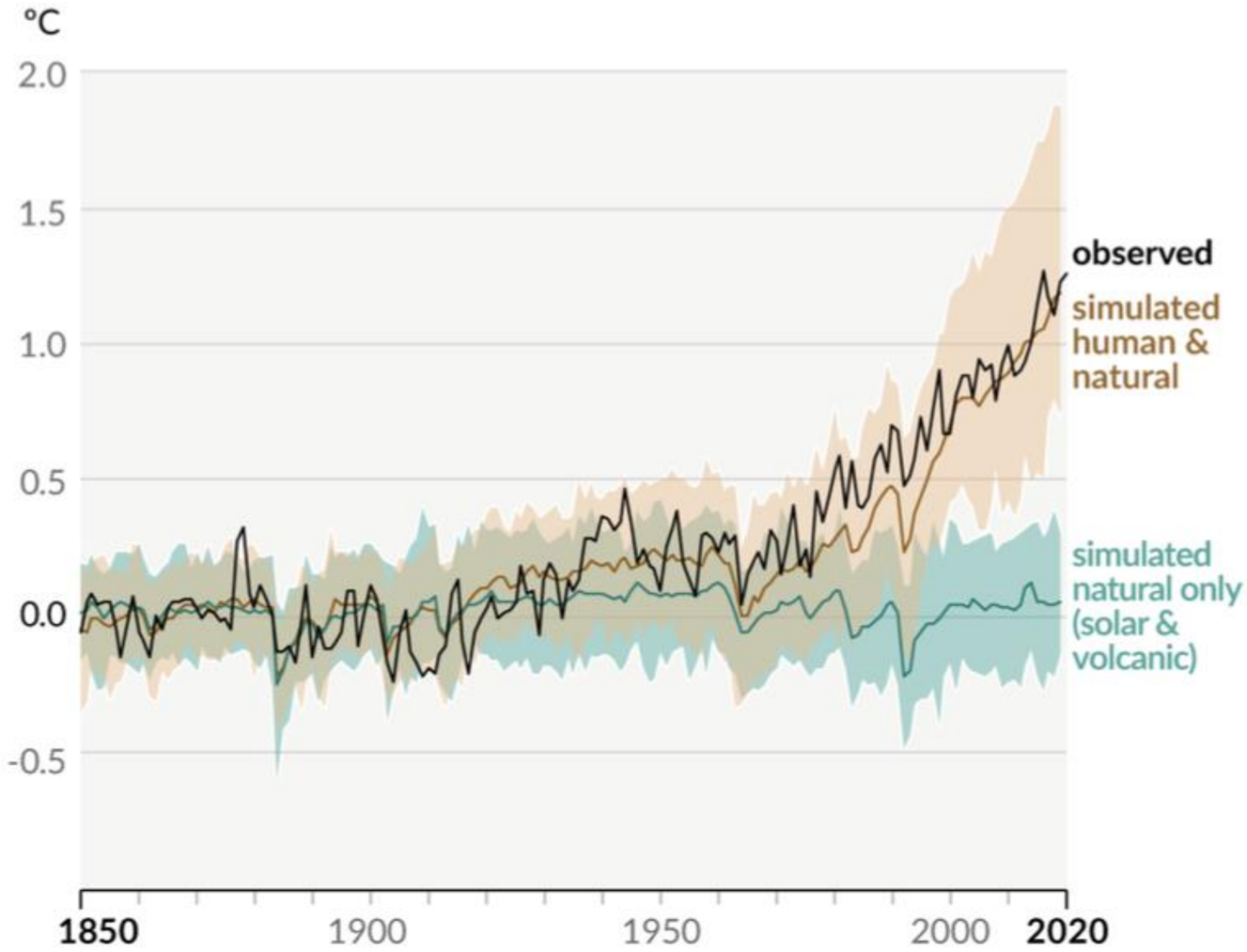
We have the technology needed to avoid the worst climate impacts.

How bad is it?

The world is getting hotter

Change in global surface temperature (annual average) 1850-2020

Source: UK CCC Sixth Assessment report 2021



What's the basis of the WW approach?

This is about Governments

What is the UK Approach?

The UK Climate Change Committee (CCC) established in 2008 as an independent, statutory body. It includes a single Sub-Committee on Adaptation.

1. Advise UK Governments on targets
2. To report to Parliament on progress made in two areas
    1. in reducing greenhouse gas emissions (Mitigation).
    2. adapting to the impacts of climate change (Adaptation).
3. Advising before any significant climate steps the Government chooses to make.

How bad is it? The world is getting hotter

What is wet becomes wetter, what is dry, drier, and what is uncommon more common.

The rarer the event, the higher the likelihood that it will become more frequent.

Even at 1.5°C of heating there will be some events—heatwaves, droughts and such—that are more severe than any that have been observed before

Source: IPCC Climate Change 2021: The Physical Science Basis , The Economist

Since we last met

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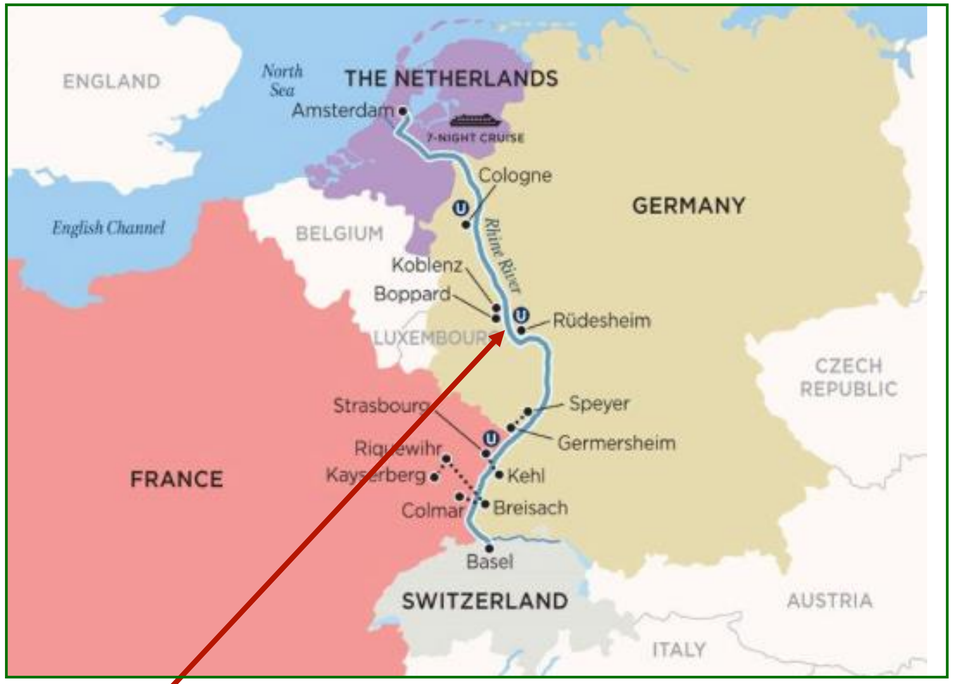
Feeling the heat



At Kaub the 1200km long Rhine is now only 50cm deep limiting the loads that the barges can carry to the point where many are now uneconomic. The Rhine is normally 2m deep at the end of August.

Further falls are expected - this will affect German GDP

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Feeling the heat - 2

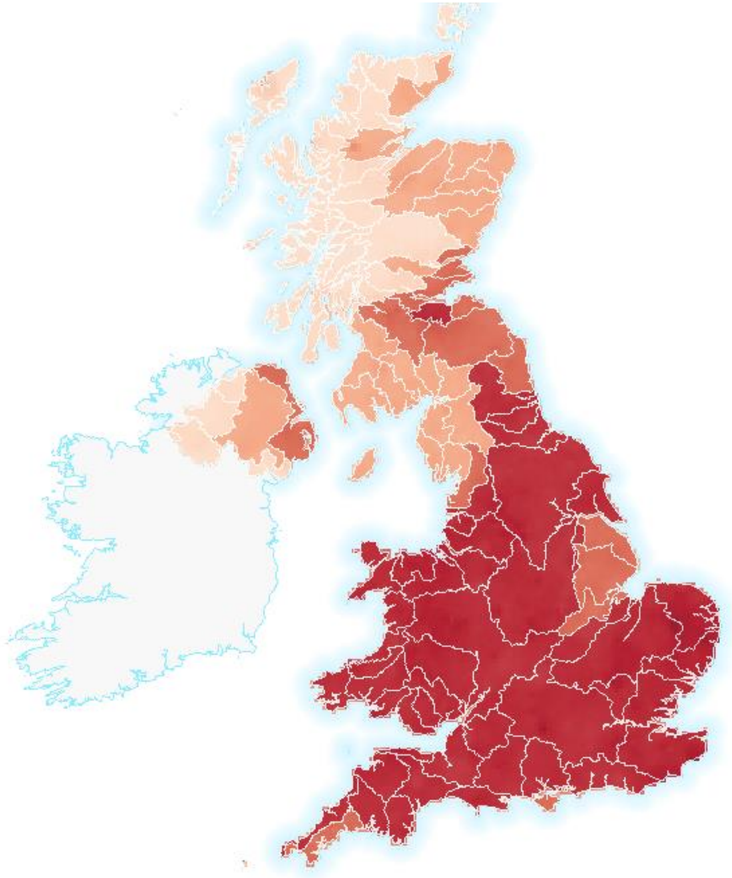
In France less than 1 cm of rain fell in August - the lowest of any month in 60 years

Nuclear reactors have been turned down because cooling water, drawn from rivers is too hot.

Wildfires have been widespread

In Italy the waters in the Po valley are so low that salt water is encroaching on the estuary threatening Italy's breadbasket

Feeling the heat - 3



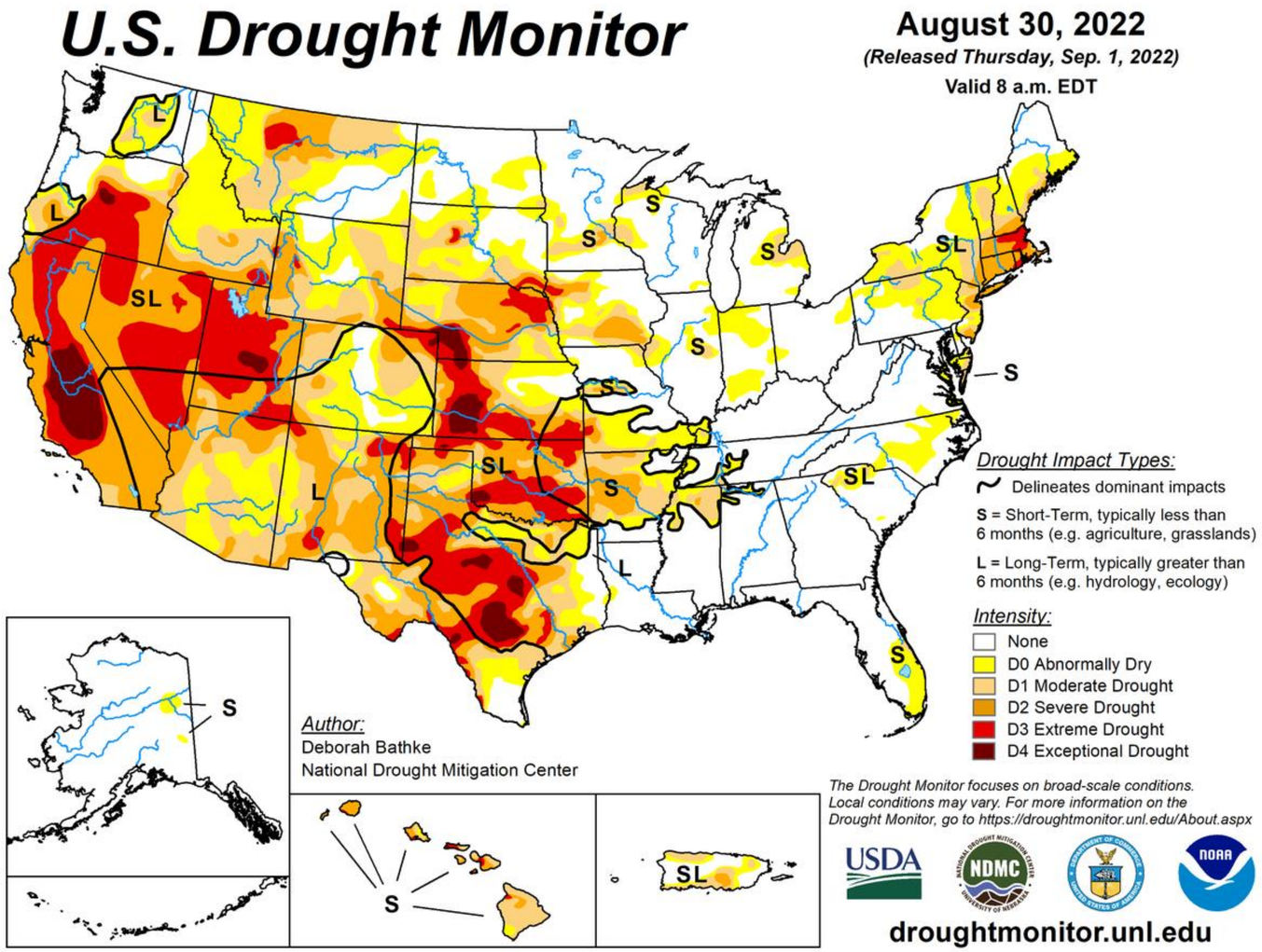
In the UK in the 6 months to the end of August 2022

Standardised Precipitation Index

- Extremely dry (SPI below -2.0)
- Severely dry (SPI from -2.0 to -1.5)
- Moderately dry (SPI from -1.5 to -1.0)
- Mildly dry (SPI From -1.0 to 0.0)
- Mildly wet (SPI from 0.0 to 1.0)
- Moderately wet (SPI from 1.0 to 1.5)
- Severely wet (SPI from 1.5 to 2.0)
- Extremely wet (SPI above 2.0)

Source: UK centre for Ecology and Hydrology

Feeling the heat - 4



- Abnormal dryness and drought are currently affecting over 175 million people across the United States—nearly 60% of the population.
- Forest Fires are still raging in Oregon and Washington State. (12/9/22).
- This week (12/9/22) Californians, many in 40°C+ heat, have been asked to cut electricity consumption to avoid blackouts.

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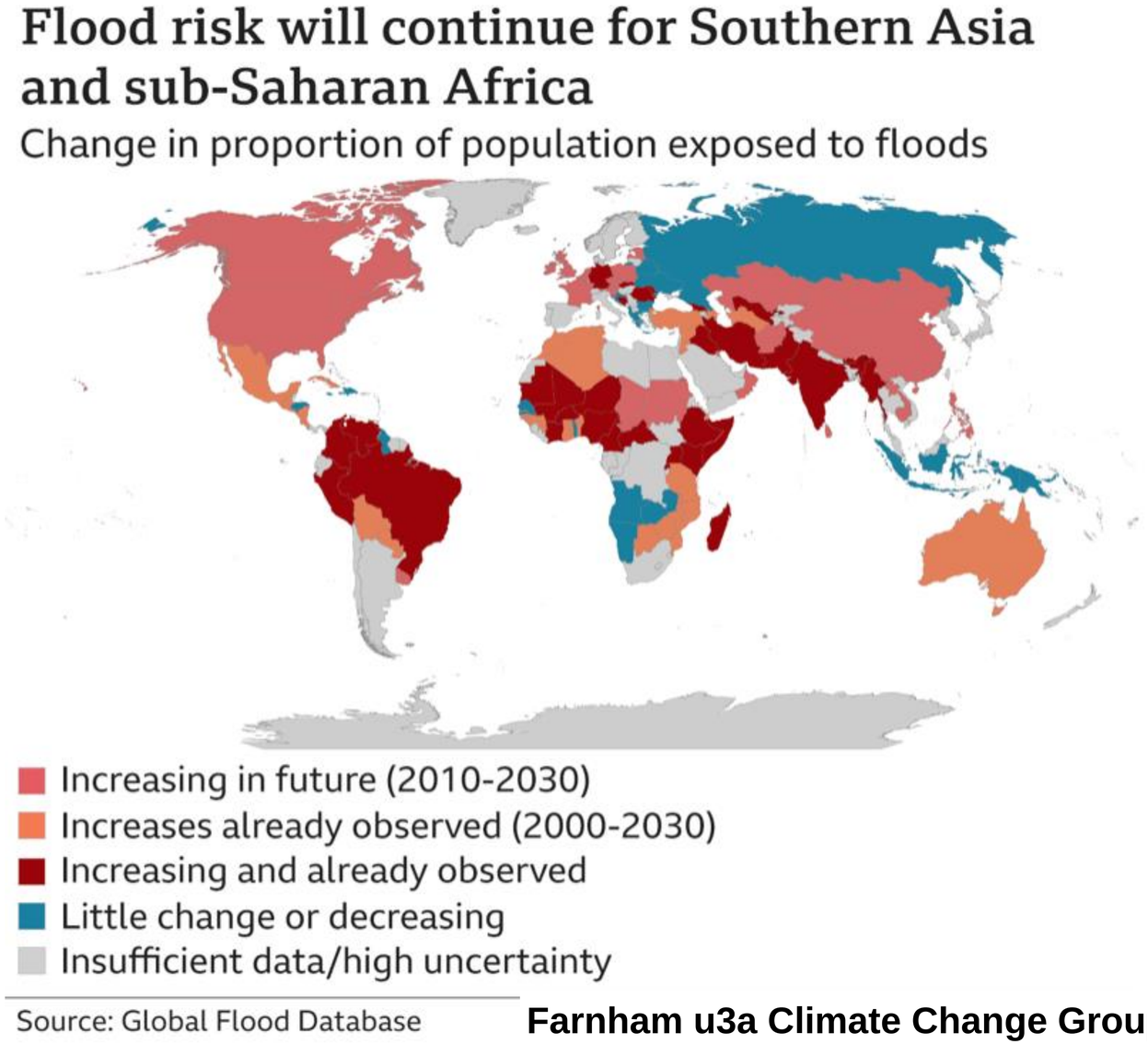
…and then there’s flooding

In Pakistan over 1200 have died and one third of the country’s provinces have declared catastrophes. 10% of the country is under water

China's drought-hit areas get rain, bringing flood risks

Tens of thousands of people have been evacuated to safer areas as heavy rains brought flood risks to a region of southwest China that for most of the summer was devastated by heat and drought



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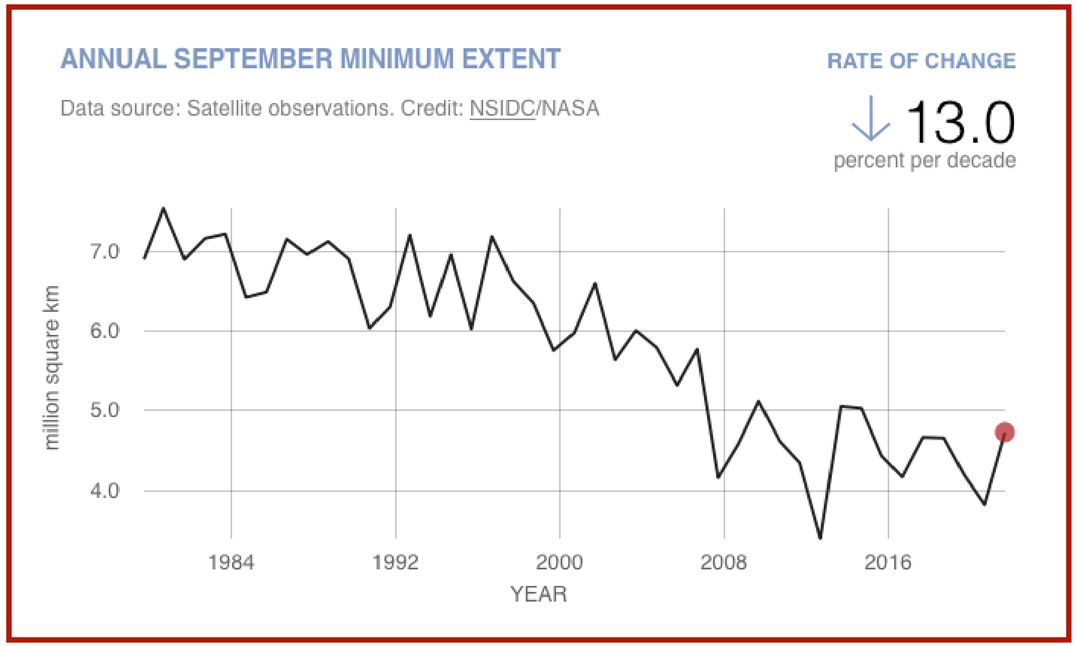
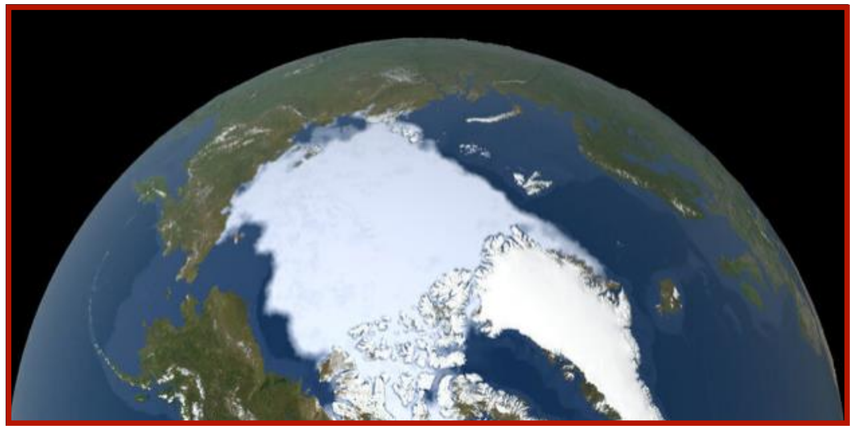
…and then there's thawing

In the arctic, events are happening faster still (x4!)





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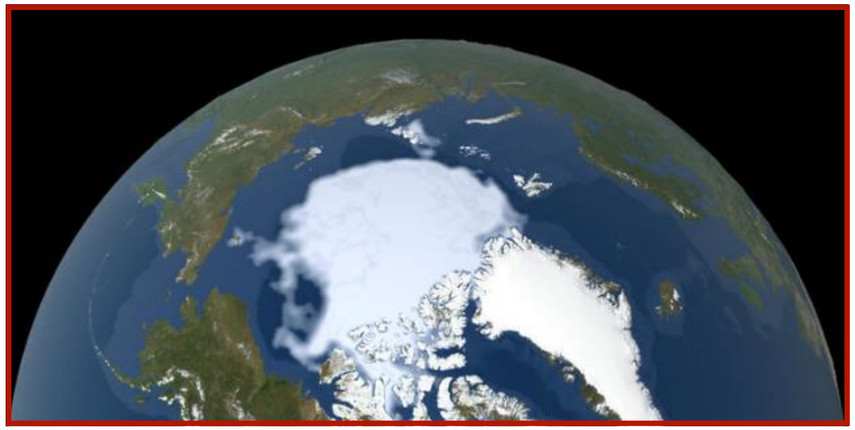

2021

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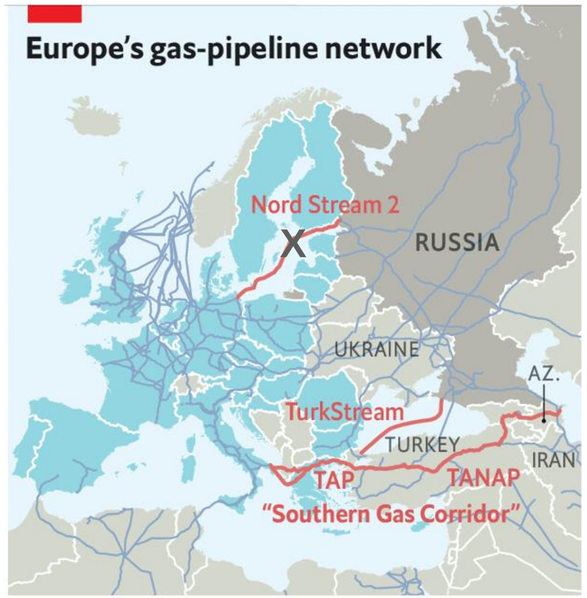
and the war in Ukraine is changing Europe’s ener



The Economist

Setting aside the horrors of the war itself the resulting gas and oil shocks will provide added impetus for the smarter nations to

1. **Reduce demand by upgrading insulation and investing to improve both productivity and many industrial processes - Germany alone will invest £47bn over 3 years in insulating the worst 25% of buildings**
2. **Improve resilience by**
    1. **Ramping up local (domestic) renewables,**
    2. **Increasing diversity of supply**
    3. **Increasing storage of all types of energy**
    4. **Improving interconnections between (friendly) nations**

Meanwhile…across the Atlantic..

In the US, the world's second most polluting nation, the Biden administration has passed the US Inflation Reduction Act, including *$369 billion* to fight the climate crisis, the single largest investment in climate and energy in the US to date.

Highlights are increases in offshore wind, nuclear energy, hydrogen production, carbon capture, utilisation and storage (CCUS) and resilience.

Meanwhile….. across the Channel

The European Council underlined that

- Transition to climate neutrality will bring significant opportunities with potential for,
- Economic growth,
- New business models and markets,
- New jobs
- Technological development.

“The European Green Deal provides the blueprint and roadmap for the EU to make its climate ambitions a reality. It recognises the need for **all EU actions and policies** to play a role in achieving climate neutrality, and it sets out a roadmap for legislative and non-legislative initiatives which will help the EU to attain this goal

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Source:The European Council 12 December 2019

Meanwhile….. across the Channel

This is how they talk about it…

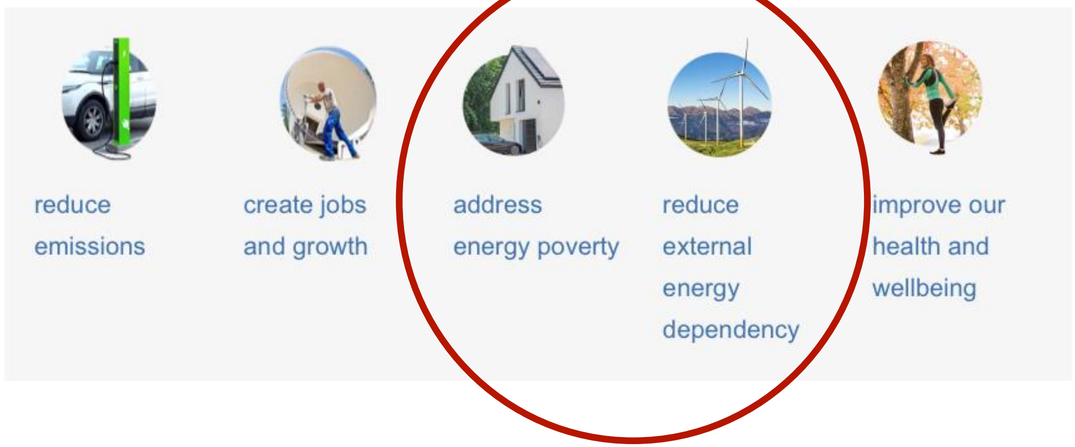
“The European Green Deal will improve the well-being and health of citizens and future generations by providing these benefits:

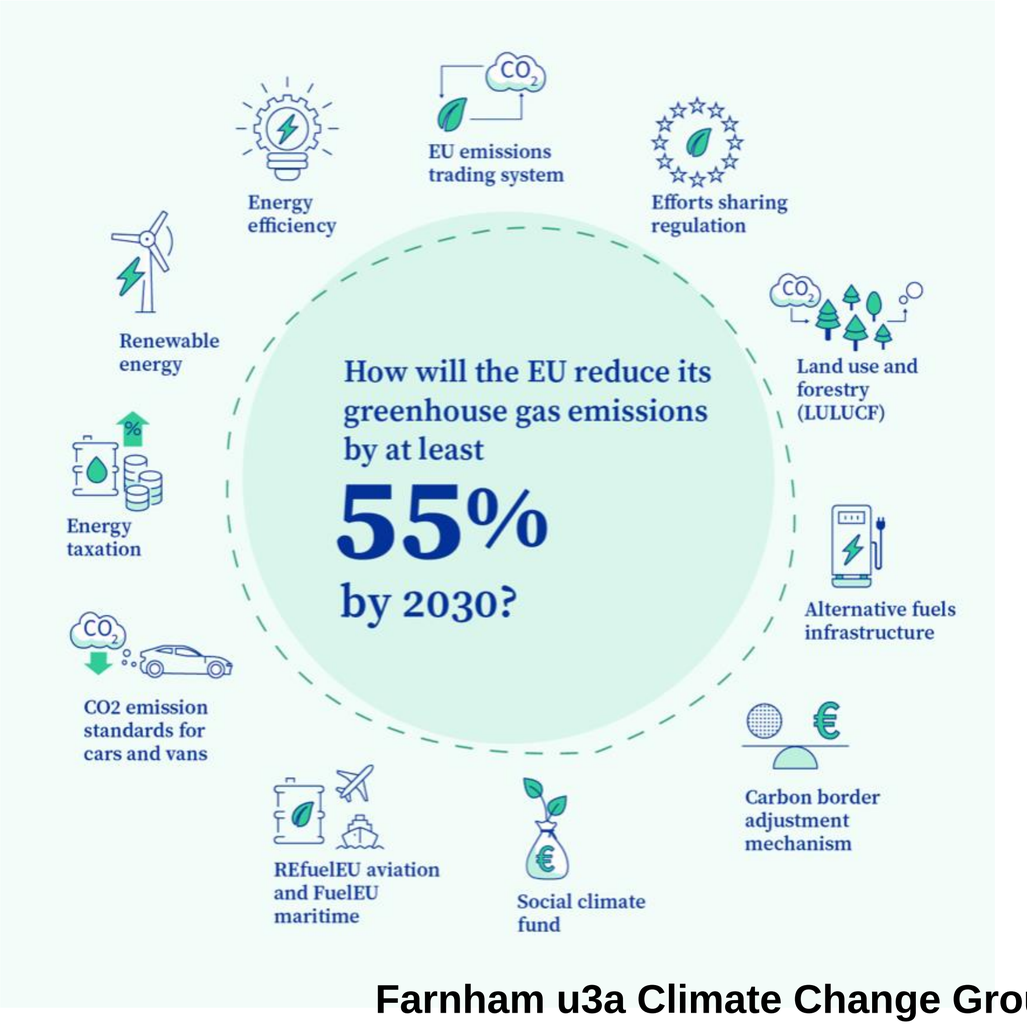
”

Meanwhile….. across the Channel

“The European Green Deal is also our lifeline out of the COVID-19 pandemic. **One third of the 1.8 trillion euro** investments from the NextGenerationEU Recovery Plan, and the EU’s seven-year budget will finance the European Green Deal.”

Including €72.2 billion over 7 years for improving insulation



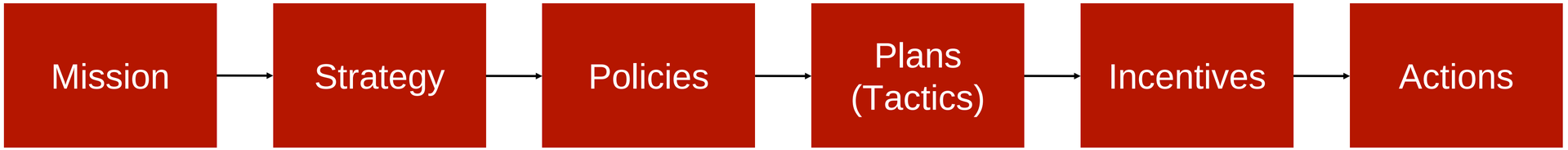


A moment for some thoughts and realities

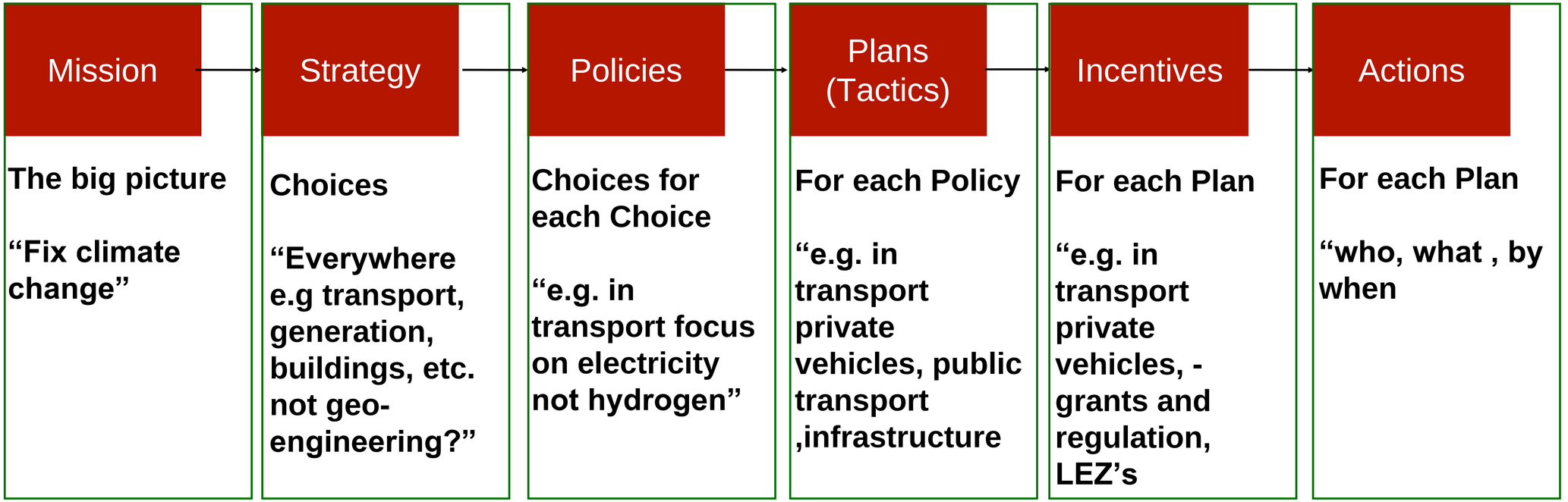
A major shift - a third industrial revolution - would normally happen at its own pace.

But we don’t have time to wait, we have a real and literal deadline

To make an industrial, social and economic shift on this scale to a prescribed timescale takes a coordinated world-wide and countrywide approach



A moment for some thoughts and realities…..

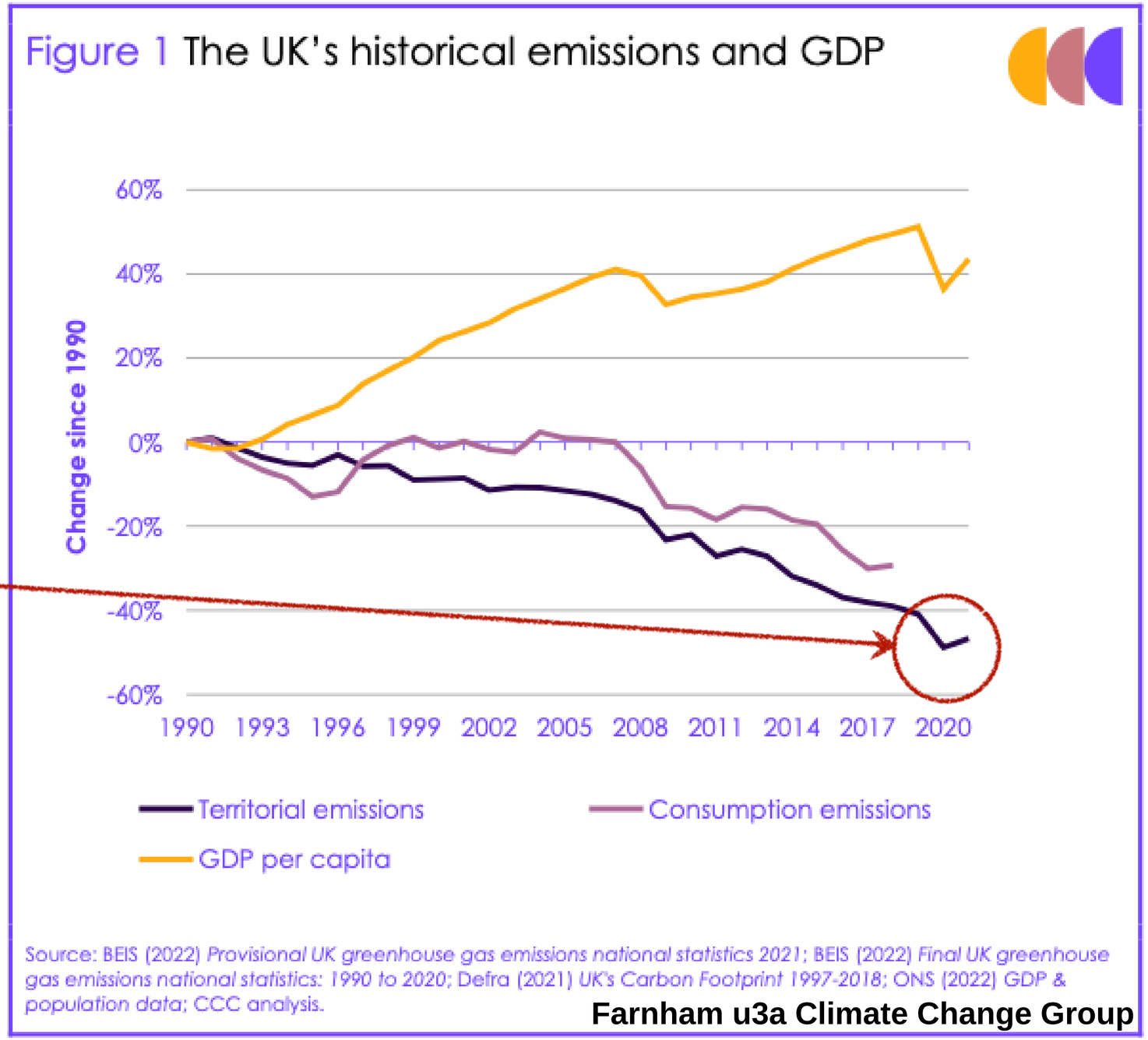


Where are we now ?
UK - the end of the Boris era

Where are we now?

UK Climate Change Committee findings

- **The Pandemic gain is over**



Where are we now?

UK Climate Change Committee findings

- **Surface transport :** Clear progress on cars not so much on vans, progress on HGV's, buses and charging infrastructure unsatisfactory.
- **Electricity supply :** Offshore wind good , further analysis required by UKCCC of the rest but it looks too slow.
- **Buildings :** Failure over the last 10 years to improve the energy efficiency of buildings. Heat pump installations very slow.
- **Manufacturing and Construction :** Not even any data.
- **Agriculture and land use :** Lack of progress in decarbonising the farming sector. Little progress on carbon sequestration , no policies on reduction of meat intake.

Where are we now?

UK Climate Change Committee

Summary of progress by sector and key indicators

On track
Slightly off track
Significantly off track

Too early to say
Data not reported
No benchmark or target

Table 1
Summary of progress against key indicators

Surface transport	Electricity supply	Buildings	Manufacturing and construction	Agriculture and land use
BEV car sales	Offshore wind, installed	Energy demand	Sector territorial emissions	Agriculture CH_4
EV cars sales	Onshore wind, installed	Energy efficiency retrofits	Sector consumption emissions	Agriculture N_2O
BEV van sales	Solar PV, installed	Non-res buildings energy intensity	Carbon intensity of energy	New woodland
EV van sales	Grid emissions intensity	Low-carbon heat supply	Material and product use	Woodland management
ICE car intensity	Unabated gas generation	Heat pump installations	Steel: energy efficiency	Peat restoration
ICE van intensity	Low-carbon flexible capacity	Heat pump costs	Paper: energy efficiency	Energy crops
Charge points	Nuclear	Electricity to gas price ratio	Low-carbon energy use	Farmer action
Car km	Flexible demand	Heat networks	Industrial hydrogen project pipeline	Crop yields
Van km	Onshore networks	Retrofit coordinators	Industrial CCS project pipeline	Livestock numbers
HGV km	Offshore networks	Willingness to replace boiler	Average embodied carbon of buildings	Meat consumption

Where are we now? — UK CCC Summary of risks

- **Credible plans exist for 39% of the required emissions reduction**
  Funding, enablers and timelines in place. Mostly from the zero-emission vehicles and renewable electricity supply.

- **There are some risks attached to 24% of the required emissions reduction**
  Changes are needed to mitigate delivery risks.
  Price disparity in car charging, zero-emission HGVs, flexible low- carbon electricity generation, decarbonising new homes.
  Policies needed for industrial CCS and hydrogen, especially for dispersed sites.

- **There are significant risks attached to 33% of the required emissions reduction**
  No clear clear timeline for next steps or further work to mitigate a significant delivery risk. No mechanisms for low-carbon heat in homes, industrial resource efficiency, peatland restoration, the necessary infrastructure, CO_2 storage sites and funding mechanisms for engineered removals.

- **Plans are either completely missing or currently clearly inadequate for 5% of the required emissions reduction.**
  Low- carbon farming practices, the UK's strategy for biomass, energy efficiency in non-fuel-poor homes, and industrial electrification.

UKCCC Summary

- The UK Government now has a solid Net Zero strategy in place, but important policy gaps remain.
- Tangible progress is lagging the policy ambition.
- Successful delivery of changes on the ground requires active management of delivery risks.
- Action to address the rising cost of living should be aligned with Net Zero.
- Slow progress on wider enablers.
- The UK must build on a successful COP26.

My Summary

- **The Boris era, driven by his now well known attributes, was characterised by lots of good words and some good action but a woeful lack of any planning driven by him.**

- **Opportunities to link the cost of living crisis and the war in Ukraine with climate change solutions have been completely missed**

- **The one shining light was Alok Sharma, who led a difficult CoP very well.**

- **That successful COP26 is now being squandered.**

My Summary - post Boris

- In the post “active” Boris and pre Truss hiatus many things crystallised as pear shaped. The death of the Monarch has added to the new PM’s woes.

- Opportunities to link the cost of living crisis and the war in Ukraine with climate change solutions have again been completely and wilfully ignored.

- The appointment of the minister for the 18th Century as BEIS minister and the scrapping of the green surcharges, comments about fields for grass not solar farms have all shown a direction of travel which is dispiriting….but

Who is Graham Stuart?

- He’s the new Minister for Climate Change, under J R-M.
- on climate change…“one of the greatest challenges we will face in this lifetime” must be met with “immediate global action”
- on fracking …“only proceed if the science shows that it is safe, sustainable and minimises disturbances to local communities”
- On energy efficiency … welcomed the Heat and Buildings Strategy “a step change in improving the energy efficiency of our buildings and how we heat them”, £4bn in funding for decarbonising heat and buildings from “to 2025”, ..as many homes be EPC C as possible by 2035… mobilising up to £65bn for upgrades…“create new opportunities for the energy efficiency sector”..
- On hydrogen ..[positions the Humber at] “forefront of the global transition towards new, low carbon technologies”, delivering well-paid, highly skilled jobs, boosting the economy and improving the environment, “firm belief that hydrogen is a key part of this”. Highlighted hydrogen’s role in decarbonising heavily polluting industries and carbon intensive transport.

Who is Graham Stuart?

- A Boris or a Sharma? ……Cop 27 will tell

Questions and Discussion