

COP26: Outcomes for Climate Change

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at **Halesworth u3a Science Group** February 2022

Based on information by **Ian Hawker**

of **Trust u3a** national group **Countdown to COP**

The Paris Agreement of 2015

The UN Climate Change Conference agreement set long term goals to guide all nations:

- substantially reduce global greenhouse gas emissions to limit the global temperature increase in this century to 2°C while pursuing efforts to limit the increase even further to 1.5°;
- review countries' commitments (NDCs) every five years;
- provide financing to developing countries to mitigate climate change, strengthen resilience and enhance abilities to adapt to climate impacts.

The Agreement is a legally binding international treaty. 192 Parties (191 countries plus the E U) have joined the Paris Agreement.

COP 26 AIMS

Glasgow on 31 Oct – 12 Nov 2021

Ian Hawker Nov 21



UN CLIMATE
CHANGE
CONFERENCE
UK 2021

IN PARTNERSHIP WITH ITALY

Brings together heads of state & climate experts to agree coordinated action to tackle climate change.

The UK did pre-conference work with all parties - Aloc Sharma

Confirm Nationally Determined Contributions (NDC) of GHG Emissions

Agree measures to accelerate the move to Net Zero-carbon emissions globally by 2050

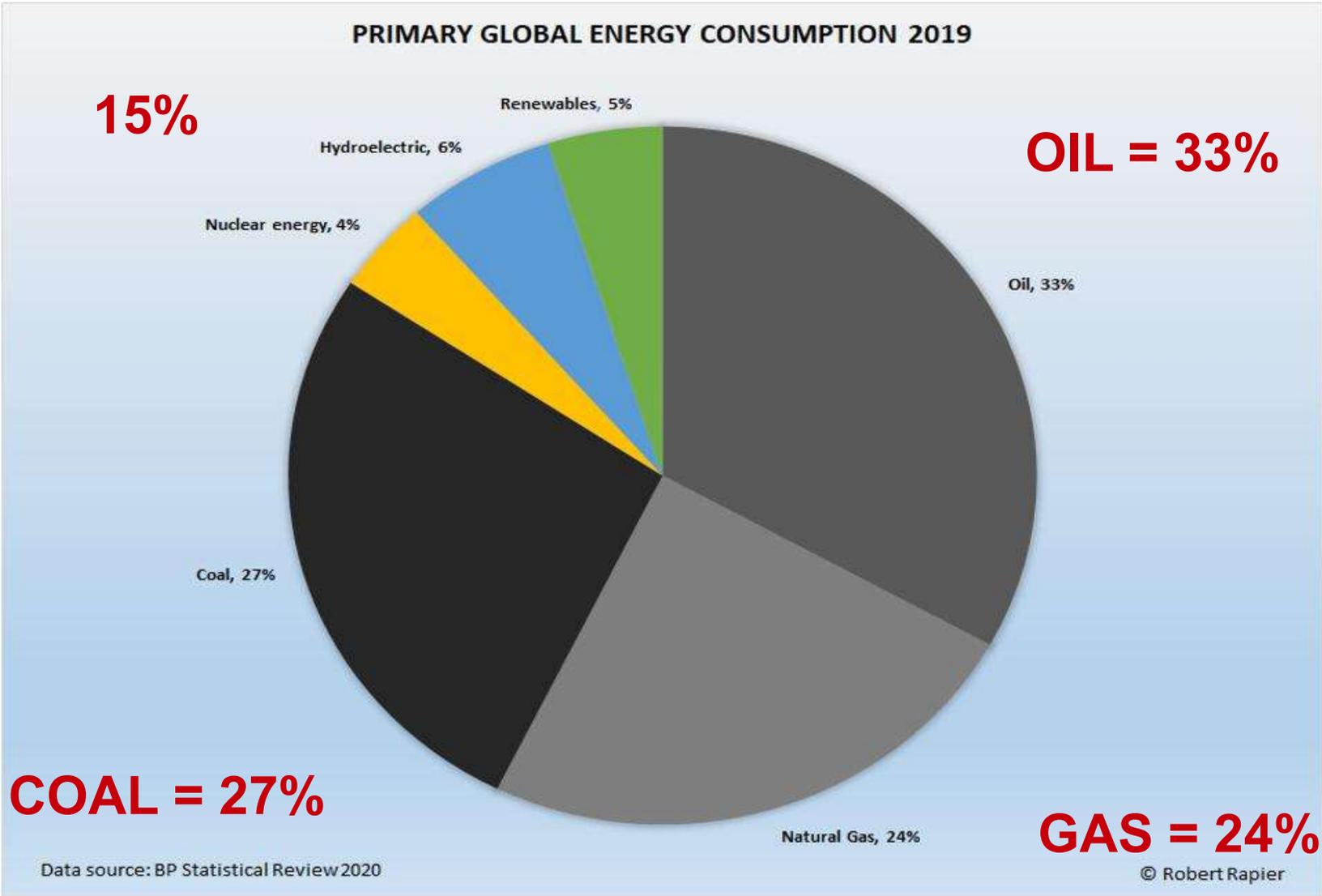
Help countries prepare for the impacts of climate change (Adaptation and Resilience)

Grow the Green Industry

Mobilise Finance by Bankers, Investors, and Asset Managers

Measures have to be agreed by all 197 countries

GLOBAL ENERGY CONSUMPTION 2019



Needs To Reduce Emissions by 45% by 2030 & Net Zero by 2050 for 1.5C rise

WHAT WAS AGREED AT COP 26

US & CHINA COOPERATION

US and China agreed to work together this decade to limit global temperature rise to 1.5C including methane emissions, transition to clean energy and decarbonisation

No detail is yet available

COAL

More than 40 countries, including 23 new ones, have pledged to phase out coal including heavy coal users like Poland, Ukraine and Vietnam

Major countries to phase out coal in the 2030s - poorer countries in the 2040s

Excludes Australia, China, US & India

The COP agreement changes the wording on the Joint Declaration from countries to "phase out coal power and subsidies" to "phase down coal power and subsidies" implying a downward trend - but by how much and when?

WHAT WAS AGREED AT COP 26

DEFORESTATION

More than 130 world leaders promised to end and reverse deforestation by 2030, allocating \$19.2 billion

Deforestation refers to land permanently removed from forestry for agricultural purposes excluding traditional logging (UN definition)

Beef production is the top driver of deforestation in the world's tropical forests x2 the production of soy, palm oil, and wood products combined

But agreements on forestry have a poor record of implementation

Under UN rules man made plantations are included as forestry

Will much of the \$19.2 billion be used to tear down indigenous forests to build plantations?

WHAT WAS AGREED AT COP 26

METHANE

Atmospheric methane has caused 30% global warming since 2007 due to fracking & other industrial processes

The US and the EU announced a global partnership to cut emissions of the greenhouse gas methane by 30% by 2030 (not China, Russia & India)

Satellite surveillance will help monitor emissions

OIL & GAS EXPLORATION

A new alliance BOGA (beyond oil & gas) led by Denmark & Costa Rica commits 12 smaller countries to set a date to end oil & gas use and halt new licences for exploration

Did not include Russia, Saudi Arabia, US and UK

WHAT WAS AGREED AT COP 26

FARMING

Agriculture and food featured less prominently at the summit, despite an analysis released by the UN Food and Agriculture Organization at COP26 showing that emissions from food systems have increased by 17% over the past three decades

Forty-five countries pledged urgent action on making farming more sustainable, invest in green agricultural practices and protect nature

SHIPPING

The Clydebank Declaration commits 22 countries to create at least six zero-emission maritime routes by 2025 with access to low carbon fuels

CARS

A total of 34 countries, cities, car manufacturers and financial institutions committed to stopping the sale of non-electric vehicles by 2040

Not US, Germany & China

Not VW, Toyota, Renault, Nissan, BMW

WHAT WAS AGREED AT COP 26

INVESTMENT FINANCE

The UK government announced that financial firms controlling about 40% of global assets - \$130trn (£95trn) - to submit 2050 net-zero goals (not enforced)

CARBON TRADING RULES

Clarity and Standardization of international carbon trading practices
The voluntary market for offsets worth up to \$100 billion was a mess

FINANCIAL HELP FOR POORER COUNTRIES

The \$100Bn per year promised to poorer countries to adapt to climate change and make the transition to clean energy to be met by 2023

LOSS & DAMAGE NOT AGREED

Poorer countries had been calling for funding loss and damage - that richer countries should compensate poorer ones for today's climate change

FOSSIL FUEL SUBSIDIES

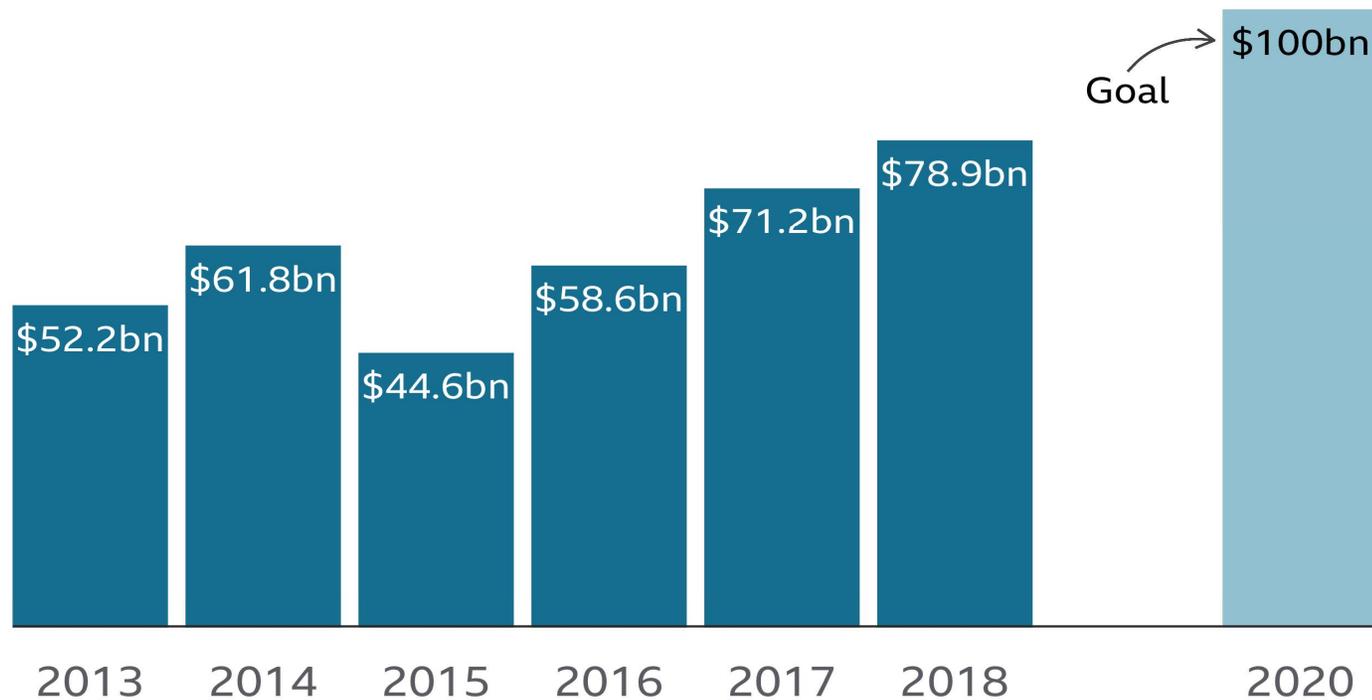
All countries signed off a pact calling for an end to fossil fuel subsidies. By when?
G-20 nations spent \$600 billion subsidizing fossil fuels last year

HELP FOR POORER COUNTRIES?

Wealthy countries pledged \$100bn a year to help poorer nations adapt to climate change

Climate finance

Amount provided and mobilised by developed countries



Source: OECD (figures are in US dollars)

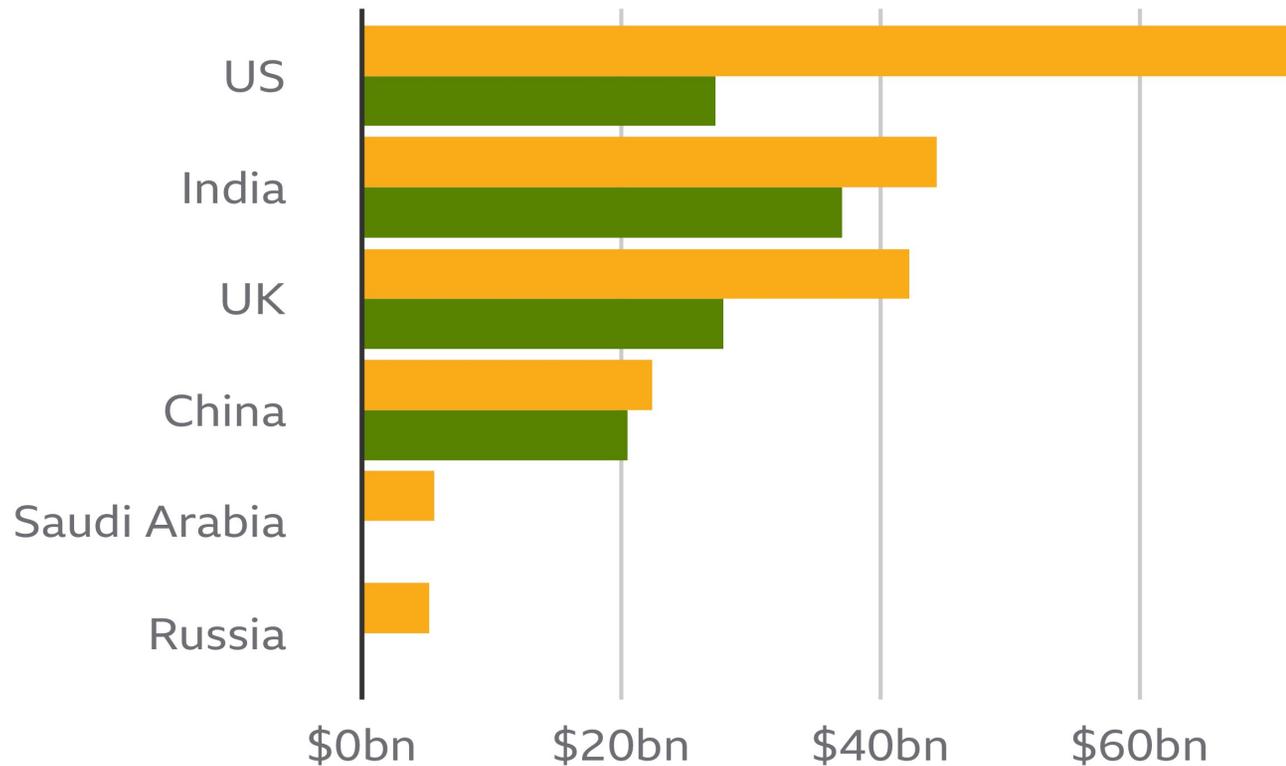
BBC

Estimated cost of adapting to climate change in the developing world \$300b/year by 2030 and \$500bn by 2050

FOSSIL FUEL SUBSIDIES

Energy industry subsidies through new or amended policies

Government financial support for **fossil fuels** and **clean energy** since January 2020, selected countries



Source: Energy policy tracker



WHAT WAS AGREED AT COP 26

TECHNICAL ISSUES

The COP resolved several outstanding technical issues including how countries monitor and report their emissions

Emissions can be verified independently by satellite observations

GLASGOW CLIMATE PACT

Ratchet up emission cutting plans (NDCs) in **COP27** and **each year thereafter**

Persuade developed countries to deliver higher levels of climate finance for Mitigation, Adaptation & Loss & Damage

Provide greater scrutiny & comparison of individual country emissions

INNOVATION

Launched the EU Catalyst Programme worth \$1 billion to finance climate innovation alongside Bill Gates and the European Investment Bank

SO WHERE ARE WE?

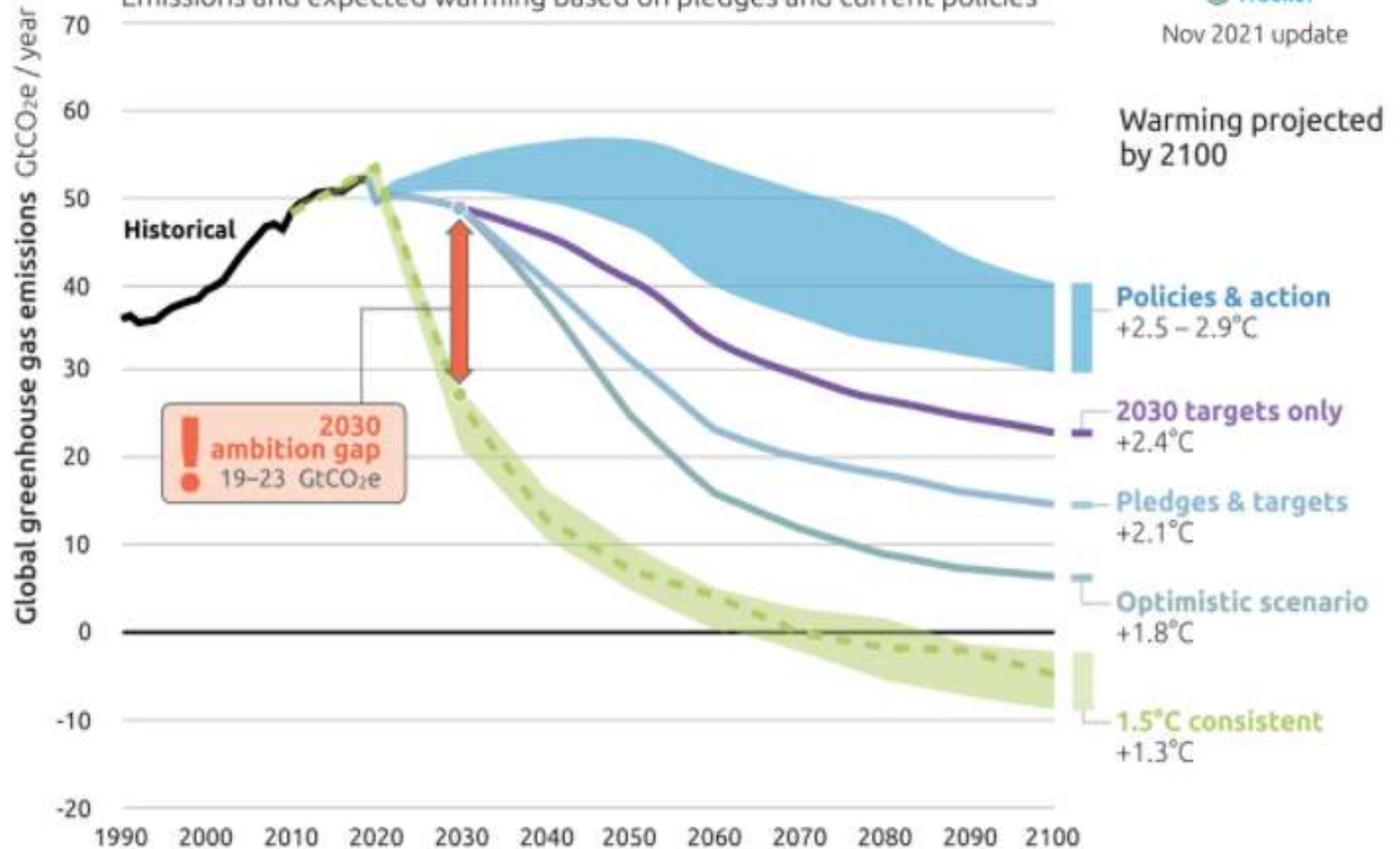
A 2.4C temperature rise is likely based on submitted NDCs

2100 WARMING PROJECTIONS

Emissions and expected warming based on pledges and current policies



Nov 2021 update



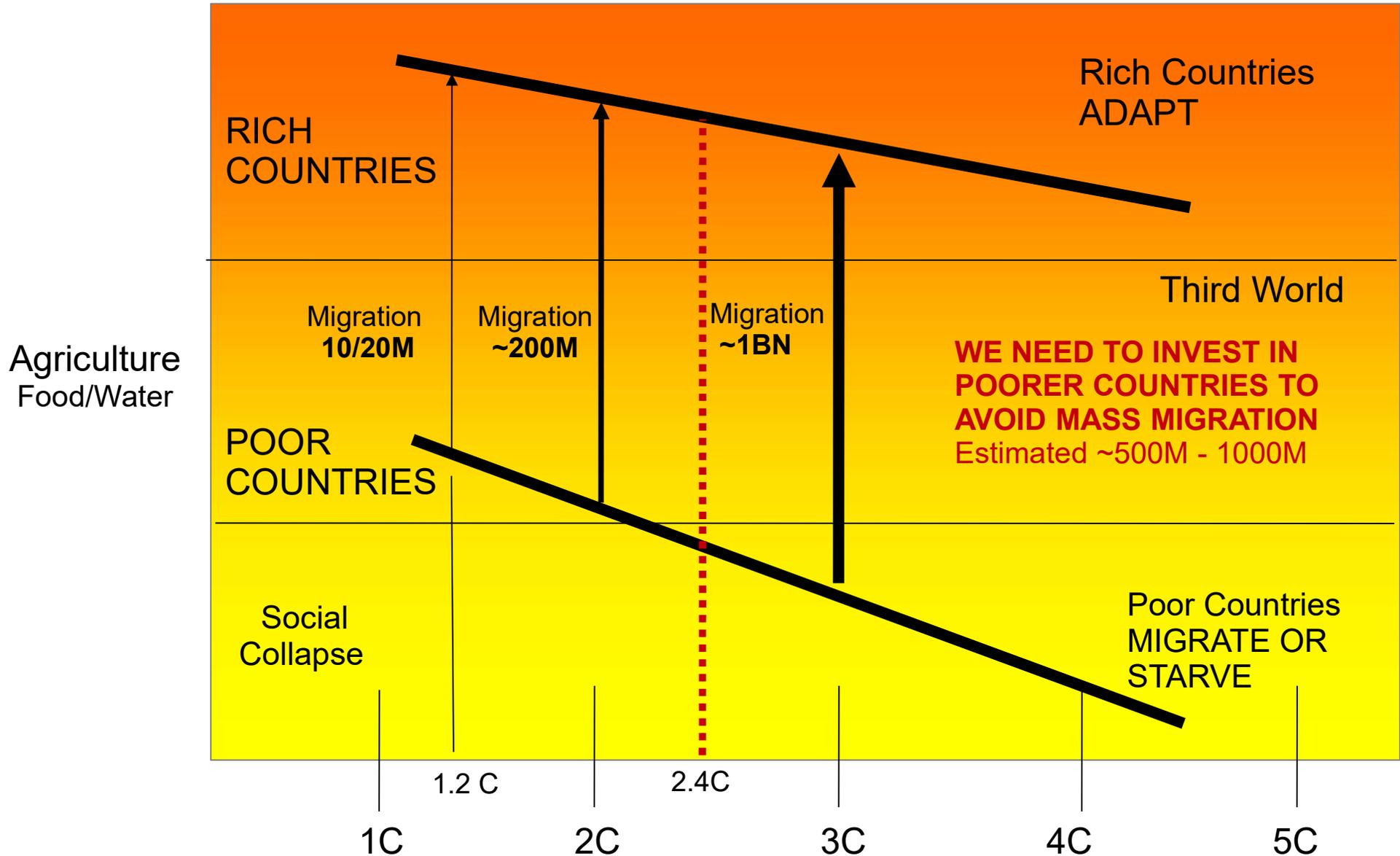
Current policies result in about 2.7°C warming.

New NDCs submitted to COP 26 limit warming to 2.4°C.

Further long term net-zero targets would limit warming to about 2.1°C

MASS MIGRATION FROM POOR COUNTRIES

Estimated 500M Climate Migrants by 2100



SUMMARY at November 2021

Compared with previous COPs good progress was made in reducing projected temperature rise from 2.7C to 2.4C based on submitted NDC

COP 26 built a common purpose for Mitigation, Adaptation & Finance of climate change solutions

Countries made compromises for sake of global agreement

But island nations remain under major threat

Assistance to developing countries needs to grow well beyond current \$100 billion

Loss and damage to poor countries for historical emissions not agreed

The chance of limiting warming to 1.5C is very low

Major progress needed to limit warming to 2C – COP27 in Egypt

Current estimated temperature rise of 2.4C by 2100 has severe long term impact

Developments to January 2022

Brussels proposes green label for nuclear and natural gas

Proposal published by the EU would recognise development of nuclear power and natural gas as “green” activity. Nuclear projects would be labelled “green” if they receive construction permits before 2045 and have plans, funding and a site to safely dispose of radioactive waste. This is the first attempt by a major global regulator to decide what counts as sustainable economic activity.

UK Electric Car Sales

19% of new cars sold in Dec 21 were EV with sales highest in London, Wales and south east of England, affected by the availability of on-street charge points.

England farmers paid to rewild land

The post-Brexit farm subsidy scheme for England will include payments for rewilding. to conserve species, provide habitats for wildlife and restore health to rivers and streams. Europe has lost 600 million breeding pairs since 1980.

UK Government Climate Change Risk Assessment

The government has released its third five-yearly climate change risk assessment. This report is a legal requirement and looked at 61 potential risks highlighted by the CCC across all business sectors. It agreed stronger government action is needed in the next five years on 34 of the 61 risks especially threats to water, energy, transportation and agriculture. The UK government is committed to developing a third National Adaptation Programme (NAP3) for England by 2023.

Developments to January 2022

UK Nuclear

The UK's nuclear output fell to its lowest level since 1982 (down by 9%) due to retirements and outages at the UK's ageing reactors. Two new reactors at Hinkley Point in Somerset are due to come online later this decade and the government hopes to secure a deal for Sizewell C. The Government is also investing in Small Modular Reactors to be operated on brown field sites.

UK Power

The government aims to have a fully decarbonised power system by 2035 – but electricity generation from fossil fuels was 9% higher than a year earlier. Gas increased its share from 34% to 37%.

In 2021 wind farms generation fell by 15% – despite rising capacity – due to the lowest average wind speeds in a decade.

Reduced sunshine hours and below-average rainfall caused 9% and 26% drops in solar and hydro generation

World Agriculture

A new study finds that adopting a more plant-based diet could cut agricultural emissions by 62% worldwide and free up an area of land greater than the European Union. This would capture around 100bn tonnes of carbon if left to revert to its natural state

Developments to January 2022

US Fossil Fuels

The Energy Information Administration (EIA) predicts US oil production to rise to 12.4m barrels a day in 2023. Natural gas production will also set new records, due to higher energy prices driving new investment in developing oil and gas fields. The Biden administration has promised a shift away from fossil fuels but has recently asked the domestic oil sector to increase output.

UK Lawsuits

The UK government is facing lawsuits from Friends of the Earth and Client Earth who say its plans to achieve net-zero emissions fall short of what is required.

China Coal Production

New data from China's National Bureau of Statistics shows that China's coal output hit record highs in December 21, as the government encouraged coal companies to ramp up production to ensure sufficient energy supplies for winter heating.

UK Wind Power

The Scottish government has approved 25GW of offshore wind project development rights which could more than double the UK's existing offshore wind capacity. Half the projects will use 'floating' wind turbines, tethered to the seabed, for the first time on a commercial scale. Successful candidates included BP, Shell & Scottish Power.

Developments to January 2022

Aviva Investments Target Company Bosses Failing On Climate Pledges

Aviva is the latest big investment firm to ramp up the pressure on corporations in a bid to clean up their acts. Aviva Investors, which manages £262bn of assets, set out its expectations in a letter to 1,500 firms in 30 countries. Black Rock, the world's largest fund, has also told the firms it invests in to step up on sustainability or face the consequences.

North Sea Gas

COP26 president Alok Sharma has told Sky News that extracting more gas from the North Sea is not a 'realistic' strategy for bringing down energy prices for UK consumers. Instead we need to bring forward plans for renewables and invest in nuclear.

Building Insulation

European Climate Foundation says the EU needs to urgently cut its gas consumption through better insulated homes and accelerating the take-up of renewable heating. 40% of the gas the EU imports is used for heating buildings.

Looking Ahead

Amazon faces irreversible collapse

- At present rates, the Amazon is as little as five years from the point where it would start to convert to dry savannah, releasing tonnes of carbon into the atmosphere. (Lucianna Gatti, National Institute for Space Research, Brazil)
- The Amazon is already 1.2° warmer than pre-industrial times and warming three times as fast as global average
- At that level of warming, 20-25% deforestation would lead to a catastrophic tipping point. At current rates of deforestation this could happen before the end of this decade
- Trees support the humid rainforest by siphoning water from the ground and transpiring into the atmosphere. This then falls as rain.
- As tree cover is lost to cattle ranching, soya plantations, mines, roads, urban sprawl and wildfires, the hydrological cycle is disrupted. The forest dries out, trees die in drought, leaf litter and dead wood decompose releasing CO₂ and leading to dry savannah

Looking Ahead

Supergrids

- The *One Sun One World One Grid* initiative launched in Glasgow is backed by 80 countries including Australia, UK, US, India.
- It would join up electricity grids of countries and even continents
- Variation of local weather in solar and wind energy generation is less of an issue if the energy is gathered and distributed over wider geographical areas
- India is keen to link to the Middle East to decarbonise India by importing renewable energy
- UK has started importing hydropower from Norway. It could also be used to export excess wind energy
- There are plans to link a mega wind and solar farm to be built in Morocco to UK via a 3,800 km subsea cable.