

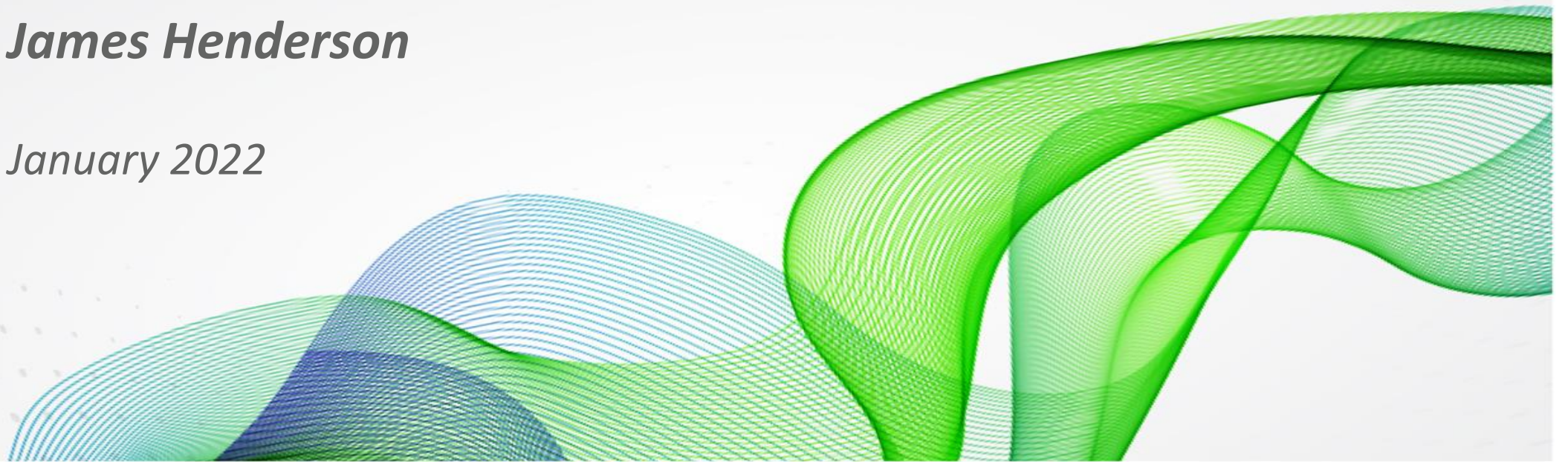


THE OXFORD  
INSTITUTE  
FOR ENERGY  
STUDIES

# Reflections on COP26 and COP27 and the implications for environmental geopolitics

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# COP26 Objectives and Ambitions

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## Formal UNFCCC Goals

- Review and update NDCs
- Climate Finance
  - \$100 billion target for 2020
  - Post-2025 finance target
  - Mitigation, Adaptation, Loss & Damage
- Paris Rulebook
  - Article 6 on international cooperation on carbon markets
  - Transparency of emissions reporting
  - Common timeframes for NDCs
  - Global stocktake
- Local communities and indigenous peoples

## UK Presidency Goals

- Net Zero targets from Leaders' Summit
- Multi-lateral agreements outside the formal process
- Coal – phasing out coal production and consumption
- Cars – shifting to net zero vehicles
- Cash – mobilizing new climate finance
- Trees – reduce tropical deforestation
- Methane reduction
- CCUS and nature-based solutions



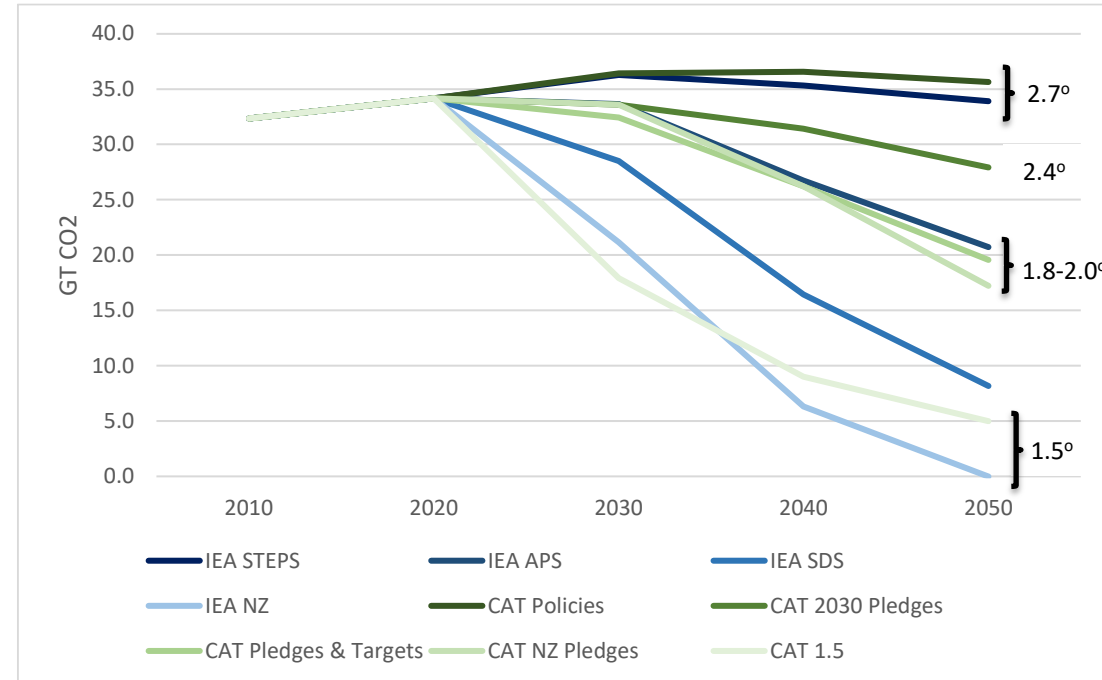
# COP26 - A Curate's Egg; Good in Parts

Issue	Reasons for optimism	Reasons for caution
Glasgow Climate Agreement	Agreed, and NDCs to be reviewed in 2022	Coal and subsidy text watered down, some backtracking on NDC updates
Transparency and common timeframes	Reporting rules agreed and timeframes for new pledges set	Implementation needed by all, which has not happened to date
Article 6	Rules agreed to avoid double-counting	Voluntary market growing fast and rules need to be applied
Net Zero pledges	1.5° now the target, increase in number of commitments, India's new pledge	Questions over reality of promises and implementation
Power past Coal (Coal)	Multi-lateral agreement on reducing coal in power sector; \$8.5bn for South Africa	Key players missing from agreement – China, India, US, Australia
Finance (Cash)	Apology and new promise to meet \$100bn target, doubling of adaptation budget	Loss of trust re future pledges, nothing on loss & damage, funds inadequate
Zero-emission vehicles (Cars)	Declaration on working towards goal of 100% zero-emission vehicles by 2035	Only 30 countries signed – no Germany, US or China; no BMW, Toyota, VW, Hyundai, Renault
Deforestation (Trees)	Multi-lateral agreement focussed on halting and reversing forest loss by 2030	Lack of confidence given past disappointments
Methane	111 countries sign pledge to reduce methane emissions by 30% by 2030	No specific national targets, key players (Russia, China, India) missing
Carbon removal	Focus on CCUS and direct air capture	Accusations of greenwashing
International relations	US-China agreement, India pledges, heavy involvement of John Kerry	No attendance from Putin, Xi and other key leaders
Other conclusions	Nuclear back on the agenda; technology neutrality discussed; activists had a key voice	NDCs and pledges still fall very short – are promises credible?



# Temperature impact of various energy scenarios

Comparison of IEA and CAT Scenarios (GT CO<sub>2</sub> Emissions)



- The IEA and Carbon Action Tracker have provided emission outcomes and resulting temperature targets for various policy scenarios
- The only ones that achieve 1.5° target involve net zero emissions by 2050
- The likely outcome at present is in the range 1.8-2.4° depending on how much credibility is given to future pledges



# Key issues and challenges ahead of COP27

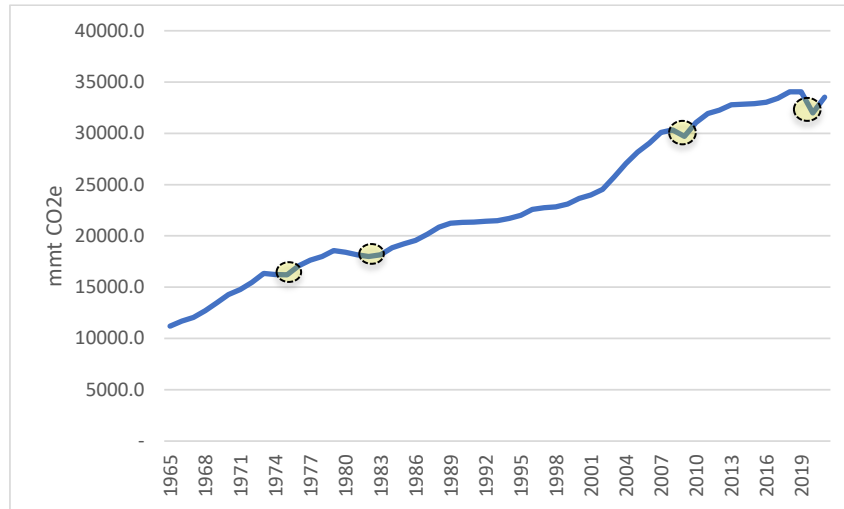
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- Reaction to IPCC AR6 reports in Feb (Impacts and Vulnerability), March (Mitigation) and September (Synthesis)
  - Developing country reaction likely to be strong
- Will \$100 billion funding target be met and how will other financing negotiations proceed?
  - Mitigation and adaptation pledges plus loss & damage negotiations
- Ensuring an adequate review of the country NDCs
  - Will countries ratchet up again?
- US-China negotiations – will China commit to further targets ahead of 20<sup>th</sup> party congress in November?
- What progress will be made with other multi-lateral pledges?
  - Important countries to sign methane and coal agreements
  - Further progress with zero emission vehicles needs government commitments on infrastructure
  - Deforestation – what impact of Brazilian elections?
- EU taxonomy – implications for nuclear and gas

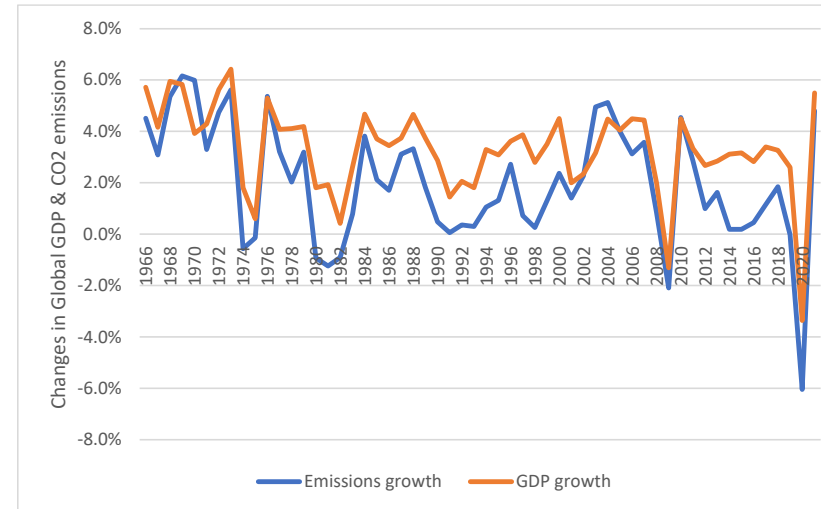


# CO<sub>2</sub> emissions and economic growth

## CO<sub>2</sub> Emissions from Energy Consumption



## CO<sub>2</sub> Emissions Growth vs GDP Growth

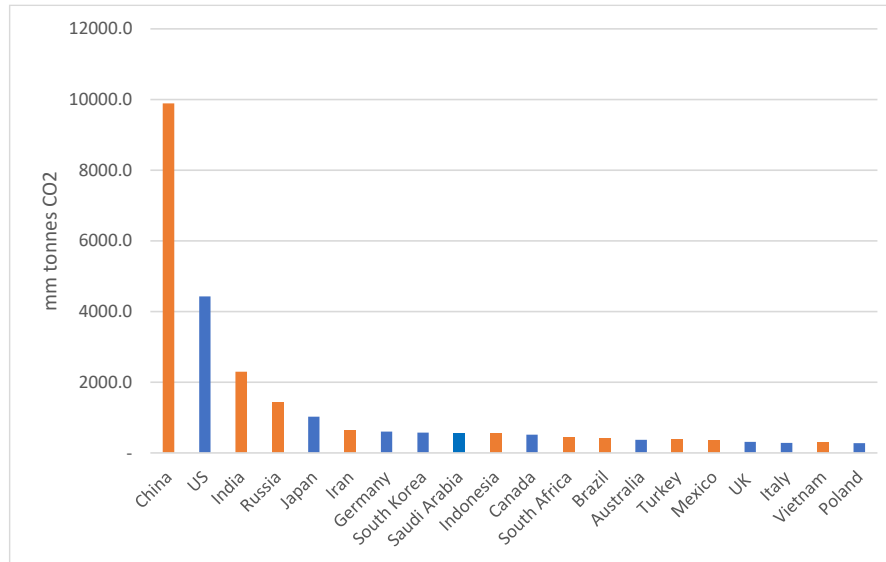


- Overall context is that CO<sub>2</sub> emissions continue to grow and 2021 saw the fastest growth since 2004, at 4.8%
- The only evidence of emissions decline is when the global economy is in recession
- The correlation between the change in emissions and movements in global GDP is strong –  $r^2$  of 0.79 since 1965 and 0.89 since 2010
- Clearly this link varies by country and government policy, but it implies a struggle to control emissions in developing countries where economic growth is a priority

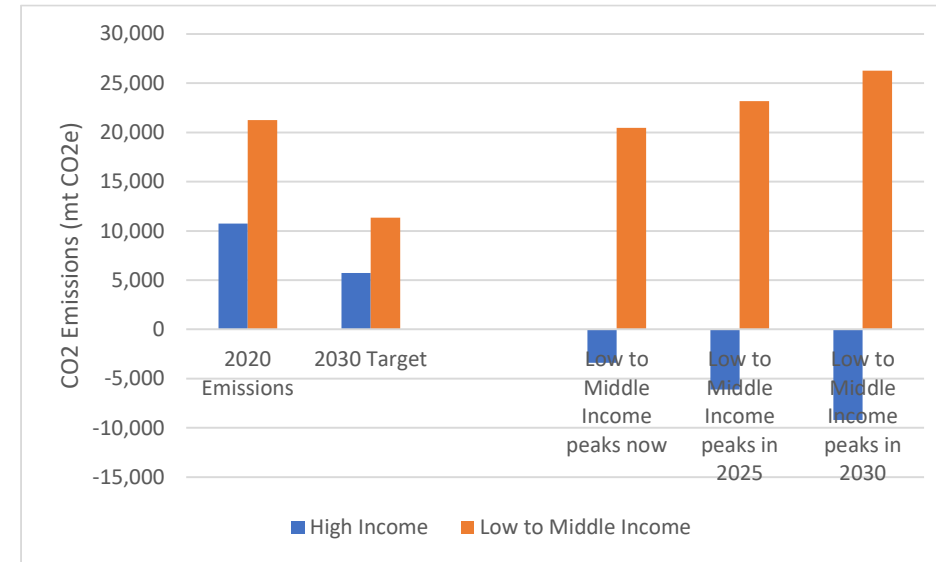


# Implications of a 45% cut in emissions by 2030 (1)

## Top 20 CO<sub>2</sub> Emitters



## Implications for High Income and Low to Middle Income Countries



- Two thirds of emissions come from low to middle income countries, and exactly half the top 20 emitters are from this group
- The UN has stated that the world needs to cut its emissions by 45% by 2030 if we are to stay on track for 1.5° temperature target
- Even if low to middle income countries peak emissions now, this implies negative emissions from high income countries by 2030



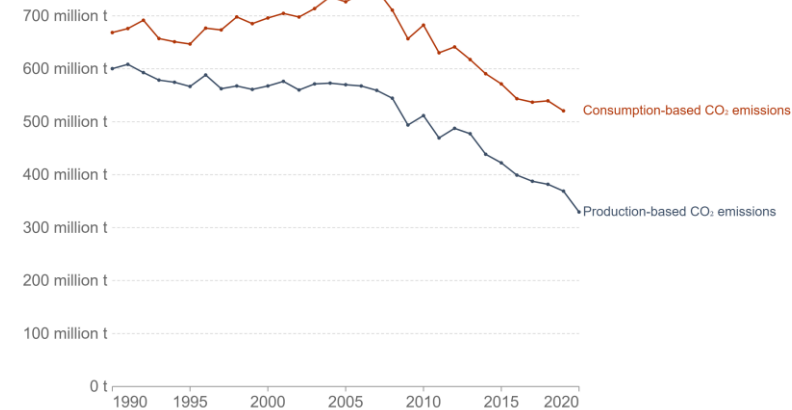
# Net importers of carbon need to finance emissions reduction in producing countries

## Comparison of carbon production and consumption by region

Income or regional group	Share of population (%)	Share of production-based CO <sub>2</sub> emissions (%)	Share of consumption-based CO <sub>2</sub> emissions (%)
High income	16%	39%	46%
Upper-middle income	35%	48%	41%
Lower-middle income	40%	13%	13%
Low income	9%	0.40%	0.40%
North America	5%	17%	19%
Europe	10%	16%	18%
Latin America & the Caribbean	9%	6%	6%
Asia	60%	56%	52%
Africa	16%	4%	3%
Oceania	0.50%	1.30%	1.30%

### Production vs. consumption-based CO<sub>2</sub> emissions, United Kingdom

Annual consumption-based emissions are domestic emissions adjusted for trade. If a country imports goods the CO<sub>2</sub> emissions needed to produce such goods are added to its domestic emissions; if it exports goods then this is subtracted.



Source: Global Carbon Project OurWorldInData.org/co2-and-other-greenhouse-gas-emissions/ • CC BY  
Note: This measures CO<sub>2</sub> emissions from fossil fuels and cement production only – land use change is not included.

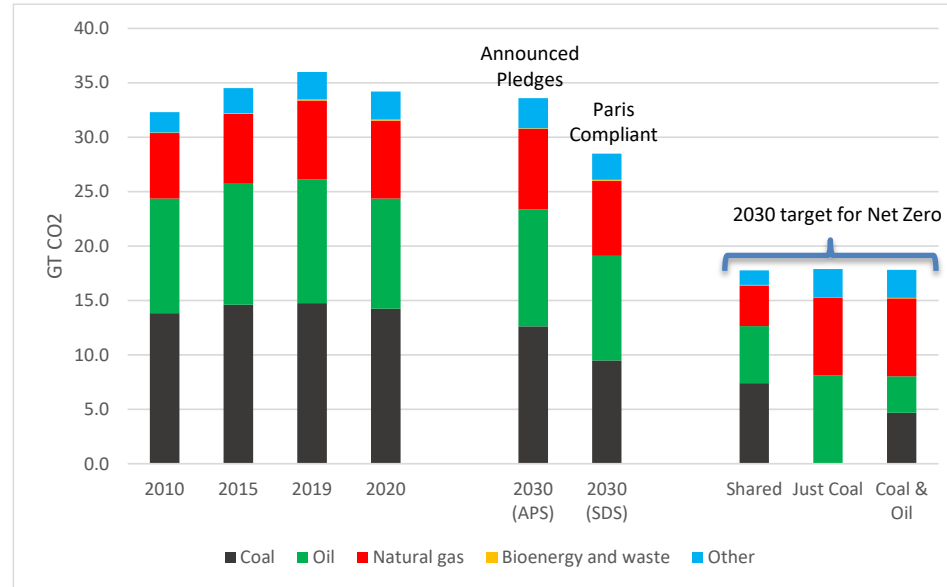
- Developed countries cannot just address domestic carbon emissions
- High income countries also contribute to emissions via carbon emitted from imported goods
- Governments will need to address this issue and ensure that funds from carbon taxation are re-cycled towards supporting low income consumers and low income countries that need to finance the energy transition
- India has been very clear on the financial support it needs to move away from coal





## Implications of a 45% cut in emissions by 2030 (2)

### *Options for reducing emissions by 45% (from 2010) by 2030*

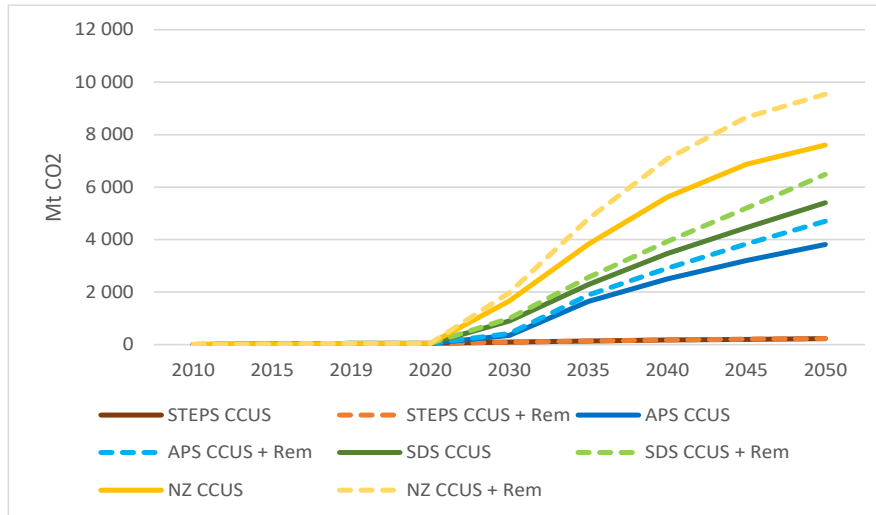


- An alternative approach is to look at the implications for hydrocarbons
- Current NDCs suggest a 13% increase while announced pledges imply a 4% rise vs. 2010
- There are multiple options to achieve the required decrease, but all imply drastic cuts
- Options include complete removal of emissions from coal-burning or a 67% decline in emissions from coal & oil combined
- Does the South Africa finance deal provide a model for future developing country assistance from the developed world?

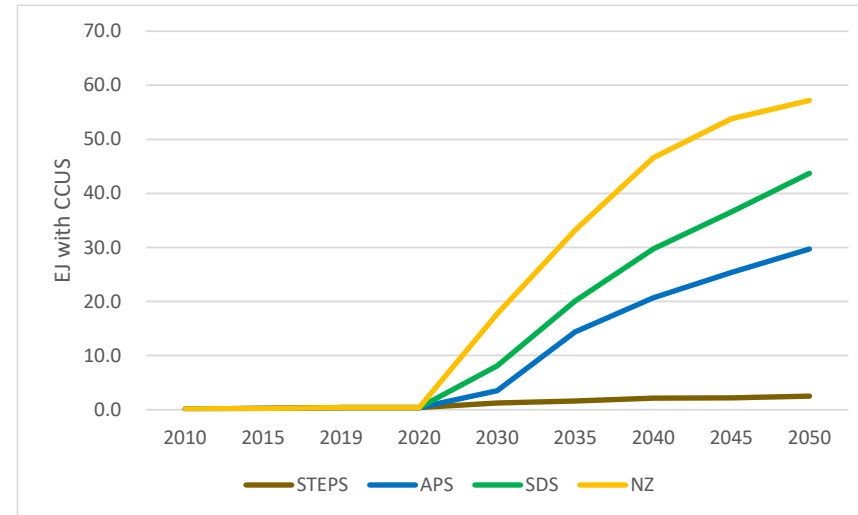


# CCUS and its importance for the future of gas in particular

*Carbon capture, utilisation, storage and removal*



*Energy supply using CCUS*

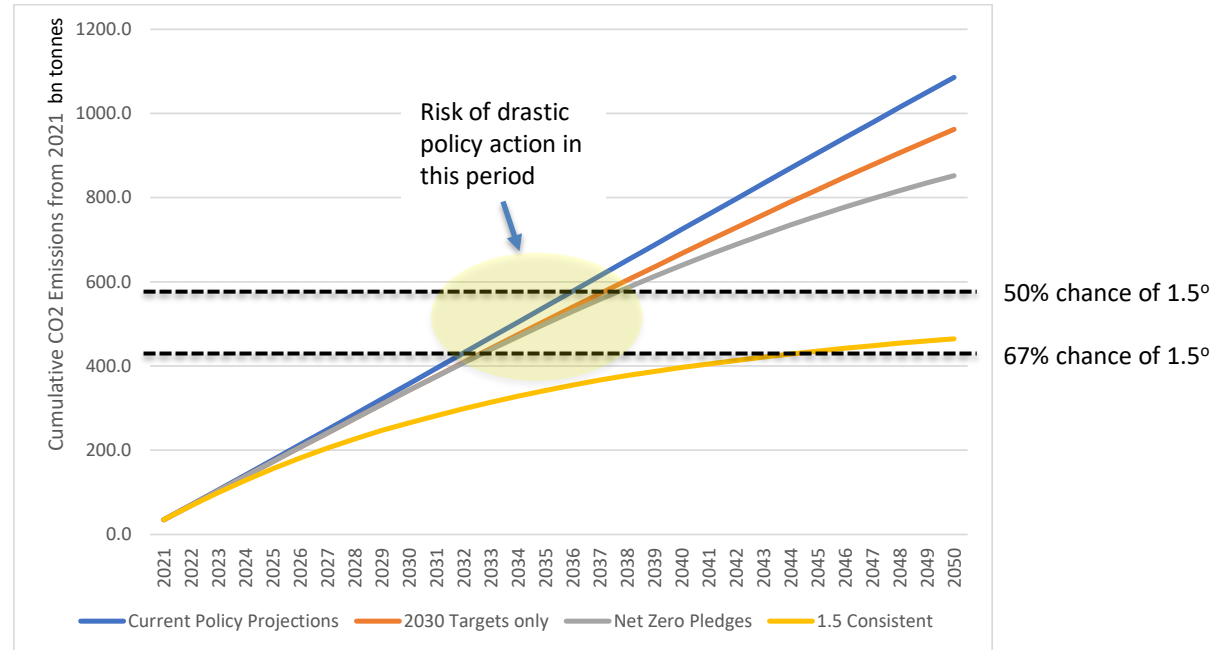


- CCUS is recognised as a critical technology to achieve net zero
- In the IEA NZ scenario, more than 70% of gas consumption will be with CCUS
- Over 10% of total primary energy supply will be using CCUS technology by 2050 if we are going to meet the 1.5° target
- In the IEA NZ scenario, all carbon emitted must be captured or removed
- This points to a technology neutral approach to the energy transition, given the likelihood that hydrocarbons will realistically remain part of the energy mix for some time



# How will countries react when it is clear that the carbon budget is going to run out?

## *Remaining IPCC carbon budget estimate versus emission trajectories*



- Remaining carbon budget is 420-580 billion tonnes for a 67% or 50% chance of keeping global temperature increase to 1.5° above 1870 level
- Under current policies this would be achieved by 2031-2035
- Announced policies and net zero targets would stretch this to 2032-2037
- There will be a significant risk that policy makers will need to take dramatic action in the early to mid-2030s to correct the likely emissions trajectory



# Political and Geopolitical conclusions

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- Environmental diplomacy is set to become a dominant theme of global geopolitics in the next decade
- The probability that dramatic policy action will be needed in the early 2030s is rising – how will governments and voters react when the short-term cost of transition becomes clear?
  - Will the US maintain a leadership role?
  - Will China see environmental leadership as a route to global influence?
- It would seem to be essential to tax the consumption, as well as the production, of carbon in the developed world
- A share of the funds raised in developed countries will need to be recycled to the developing world to support the decarbonisation of their economies as the potential for a developing world backlash over financing the energy transition is growing
- Will the development of new technology for the energy transition encourage greater cooperation or be a source of competition and friction?
  - NB mineral and material supply chains for energy transition