FORESIGHT TRANSITIONS | climateworks FOUNDATION | Imperial College London | ATKINS Member of the SNC-Lavalin Group

UNDERSTANDING THE ROLE OF GREENHOUSE GAS REMOVAL

Even after deep decarbonisation, there will still be residual emissions across the economy. Greenhouse gas removal (GGR) is considered an important tool for tackling these 'hard-to-abate' emissions.

What is greenhouse gas removal?

Greenhouse gas removal (GGR) refers to activities that involve the extraction from the atmosphere and long-term storage of greenhouse gases. Most often, this refers to the removal of CO2.

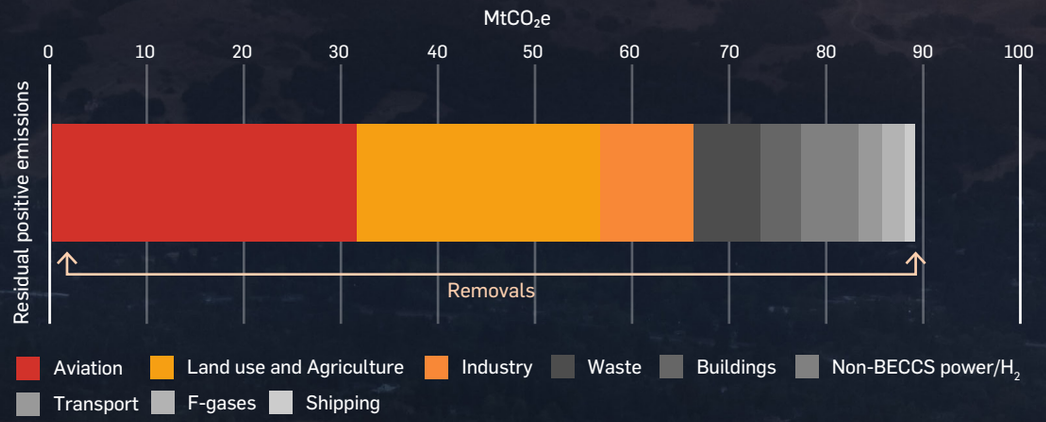
A range of GGR technologies are available, including nature-based, engineered, and hybrid options. The technologies differ according to potential, cost, side effects and co-benefits, storage type, maturity, saturation, and permanence.

Putting people and communities into greenhouse gas removal: Commercial and Socio-legal Evidence is the latest report from Foresight Transitions. The report examines the potential implications of GGR deployment from the bottom-up, considering how local communities will be impacted and how technologies could be governed to reflect their concerns.

Investment of 1-2% of UK GDP needed to reach net-zero

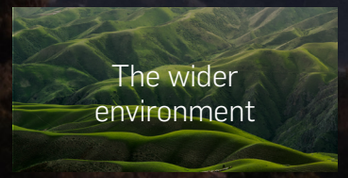
GREENHOUSE GAS REMOVALS REQUIRED TO BALANCE POSITIVE EMISSIONS

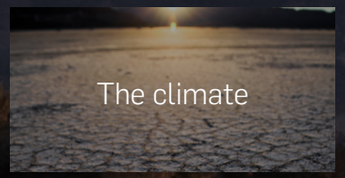
Certain sectors will find it more difficult than others to decarbonise, and will need removals to reach net-zero.



GGR NEEDS GOOD GOVERNANCE

Scaling up GGR will have implications for **people and communities**, and for **the wider environment**, as well as for **the climate**. It will be essential to ensure GGR is properly governed, so that technologies can be scaled to required levels in a manner that is sustainable and equitable.





All data taken from: Committee on Climate Change (2019). Net Zero: The UK's contribution to stopping global warming

HOW MANY TIMES SCALING UP

GGR technologies will need to scale up significantly in order to meet Paris Agreement targets. In 2050, a GGR sector multiple times the size of the current oil and gas sector may be required.

TREE PLANTING: x1.5

13% current UK woodland cover

x1.5

19% by 2050

PEATLAND RESTORATION: OVER DOUBLE

25% UK peatland area restored today

55% needed by 2050

BECCS:
Research scales to
51-83 MtCO2/year
in 2050

DACCS:
Research scales (very small)
1-25 MtCO2/year
in 2050

SHARE OF TOTAL REMOVALS