

# The UK's Approach to Quantify Net Negative Emissions in BECCS Projects: BSI Flex 2006: v1.0:2025-07

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# Turning science into policy



## Bioenergy with carbon capture and storage (BECCS) – Quantification of greenhouse gas (GHG) emissions and removals – Specification

July 2025 Version 1



BSI Flex 2006 v1.0:2025-07

## Foreword

### Publishing information

This BSI Flex was sponsored by the Department for Energy Security and Net Zero (DESNZ). Its development was facilitated by BSI Standards Limited and it was released under licence from The British Standards Institution. It came into effect on 31 July 2025.

Acknowledgement is given to Mirjam Röder, Czaneil Gomez and Daniel Taylor, Aston University, as the technical authors, and the following organizations that were involved in the development of this BSI Flex as members of the Advisory Group:

- Bellona
- British Airways
- Carbon Capture and Storage Association
- Carbon Gap
- CCS+
- CO2RE
- Coalition for Negative Emissions
- DAC Coalition
- Department for Energy Security and Net Zero (DESNZ)
- ICVCM
- Isometric
- Puro earth
- Supercritical
- Sylvera

Acknowledgement is also given to co-opted members of the Advisory Group.

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### Relationship with other publications

This BSI Flex is part of the greenhouse gas removal programme, alongside BSI Flex 2007 v1.0:2025-07, *Direct air carbon capture and storage (DACCS) – Quantification of greenhouse gas (GHG) emissions and removals – Specification*.

### Information about this document

This is Version 1 of BSI Flex 2006, which has been released to enable stakeholders to engage with the initial content and feed back comments. All comments received will be reviewed to inform the future direction of this document. However, at present there are no plans to develop further versions. Interested parties are encouraged to check the BSI website for updates regarding any future plans.

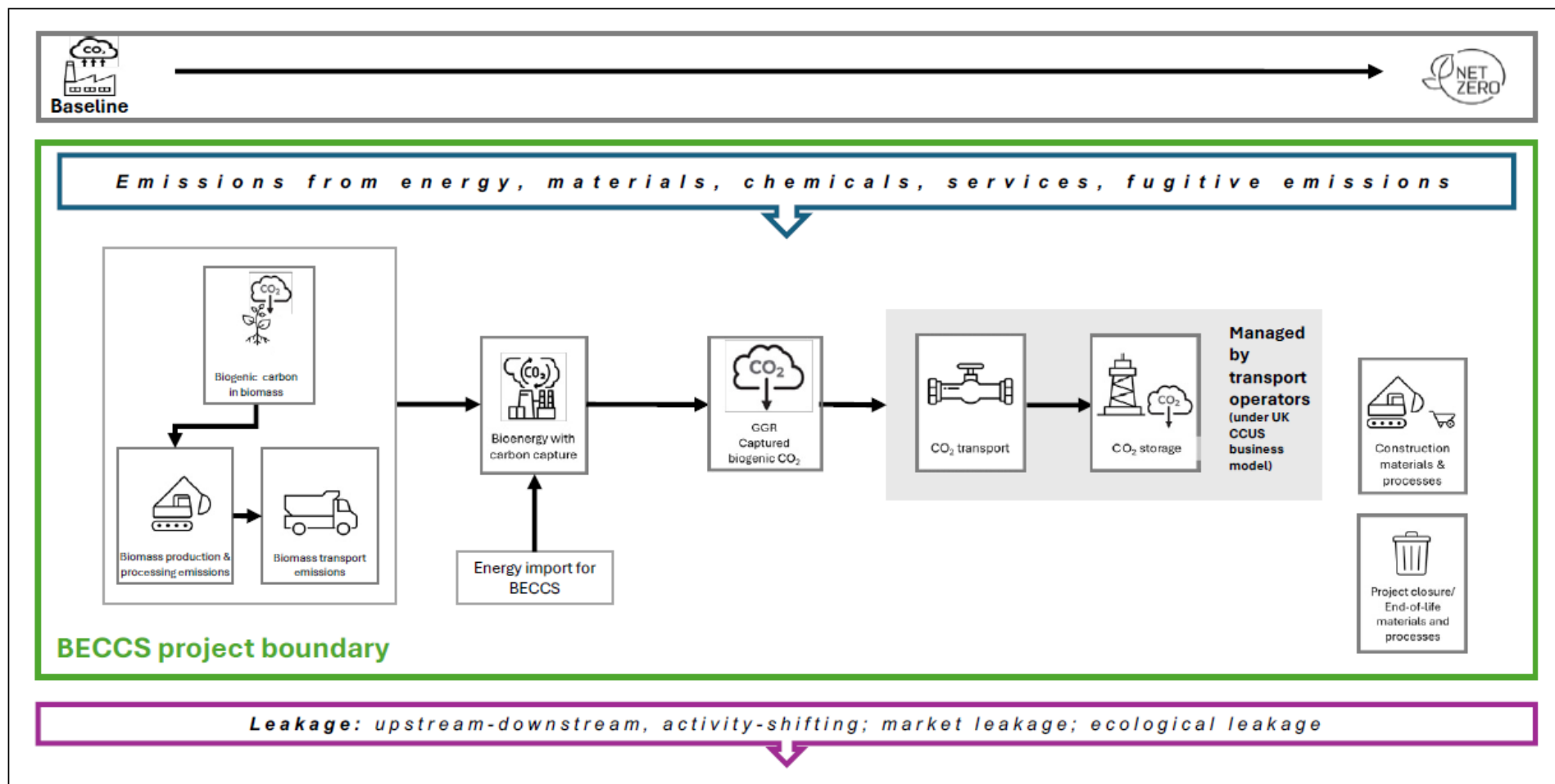
# Existing carbon removal frameworks and standards

MRV Criteria	ACR	Australian CC	Carbfix	CORSIA	DESNZ-WSP	Drax	EU CCS Directive	EU CRCF	EU RED	Gold Standard	ICVCM	Isometric	Puro.earth	UNFCC	Verra
Accurate/accuracy	Green	Red	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Consistent /consistency	Green	Red	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Continuous improvement	Green	Red	Yellow	Green	Green	Green	Red	Yellow	Green	Green	Green	Green	Green	Green	Green
Environmental Safeguards	Green	Green	Green	Green	Green	Green	Green	Green	Green	Red	Green	Green	Green	Green	Red
Simplicity	Yellow	Red	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Parity	Yellow	Red	Red	Red	Green	Green	Red	Green	Green	Green	Green	Green	Green	Green	Green
Transparent	Green	Red	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
<b>Negative Emissions Criteria</b>															
CO <sub>2</sub> source	Green	Red	Green	Red	Green	Green	Red	Green	Green	Green	Green	Green	Green	Green	Green
Net Negativity	Green	Yellow	Green	Red	Green	Green	Red	Green	Red	Green	Green	Green	Green	Green	Green
Permanence	Green	Green	Red	Green	Green	Green	Green	Green	Red	Green	Green	Green	Green	Green	Red
Leakage	Yellow	Red	Yellow	Red	Green	Yellow	Red	Green	Green	Yellow	Green	Green	Yellow	Green	Yellow
Additionality	Green	Green	Yellow	Green	Green	Yellow	Red	Green	Green	Green	Green	Green	Green	Green	Green
Boundaries	Green	Red	Green	Red	Green	Yellow	Red	Yellow	Green	Green	Green	Green	Green	Green	Green

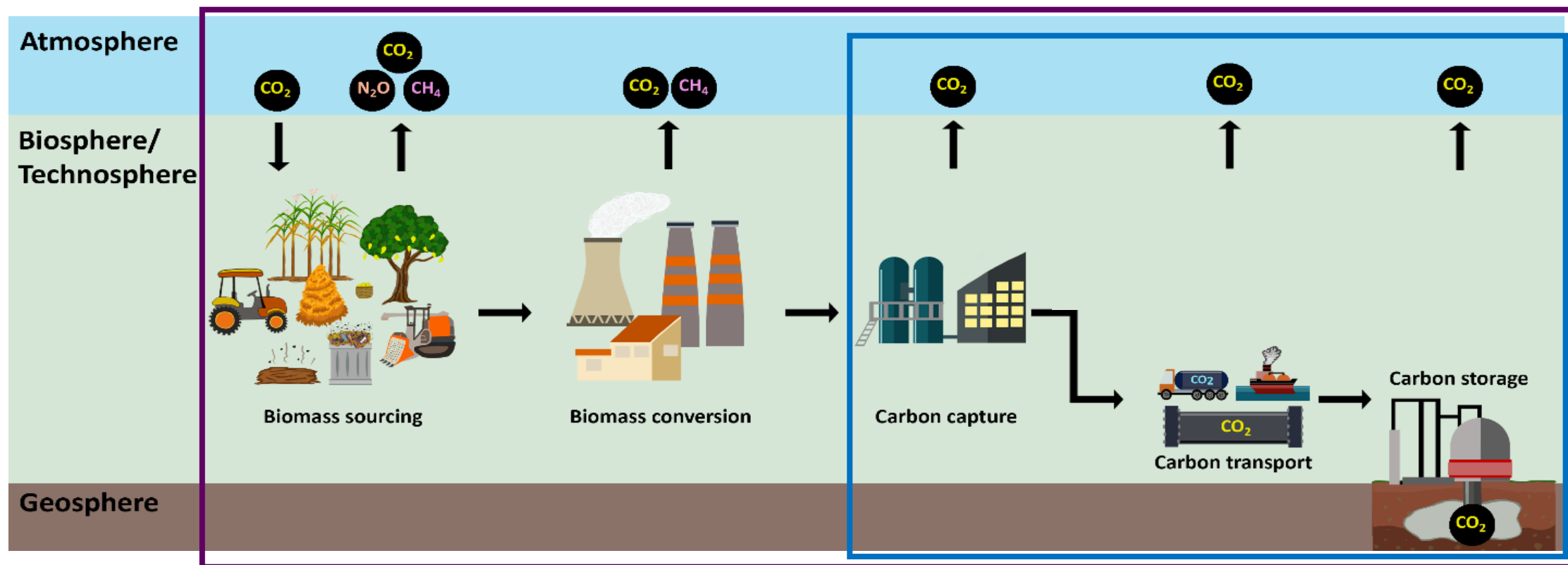
- Included aspects especially negative emission criteria vary
- Project boundaries are narrow for schemes with very specific/sectoral focus
- Some principles/criteria difficult to identify (Simplicity, Parity, Transparency)

# BSI Flex 2006: v1.0:2025-07

Bioenergy with carbon capture and storage (BECCS). Quantification of greenhouse gas emissions (GHG) and removals.



# Comparison of the UK and the EU BECCS accounting framework



	EU	UK
Baseline	set to 0	✓
Leakage	(fugitive)	✓

■ EU  
■ UK

# Get in touch

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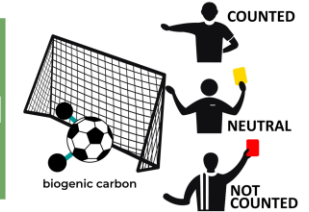
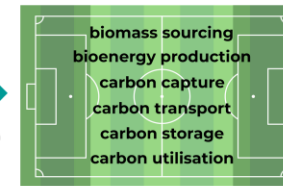
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## Same Carbon, Different Count: Divergent Treatment of Biogenic Carbon in Accounting

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### PROBLEM

As global decarbonisation efforts increasingly rely on bioenergy and bio-based systems, **biogenic carbon now plays a central role in climate mitigation strategies.**



However, **the way biogenic carbon is accounted for varies across methodologies.**

### OBJECTIVE

This study investigates accounting practices within the bio-based system, with a focus on biogenic carbon.

It aims to identify existing methods, highlight gaps, and explore challenges in accounting across the bioenergy with carbon capture, utilisation and storage lifecycle.

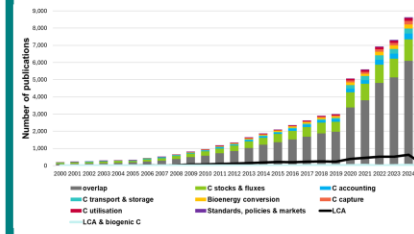
### METHODOLOGY

#### Systematic literature review

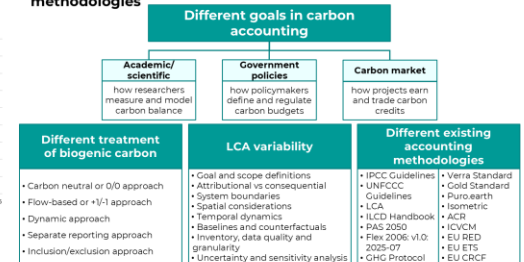


### RESULTS

Despite thematic overlap, **few literatures mention lifecycle assessment, and even fewer mention biogenic carbon.**



There is **high variability in assessments due to different goals and methodologies**



### FINDINGS OF THE STUDY

- Biogenic carbon accounting varies significantly**, with different goals and boundaries across sectors.
- Lifecycle assessment choices are important** because the methods and assumptions used can significantly change the results.
- Treating biogenic carbon as "neutral" is misleading**, risking credibility.
- We need an approach with clear definitions and transparent methods.**

### RESEARCH IMPACTS



**Carbon accounting is not just about numbers;** its impact on the climate depends on when, where, and how it is accounted. Inconsistent accounting not only distorts figures, but also alters how we understand, value, and respond to climate solutions.