

CCSA Cumulative Impacts Workshop

02/12/2025
10:00-12:30 GMT



House Keeping & Introductions

- The meeting is being recorded for internal note-taking purposes
- This meeting is being held under Chatham House rules
- CCSA Competition Law Policy notice is attached to the meeting invite
- Please be respectful and wait for your turn to speak
- Meeting materials will be circulated after the workshop
- **Round of introductions**

Agenda

	Time	Topic	Speaker
1.	10:00 [5 mins]	Introductions and scene setting	Christie Hazell-Marshall (Chair) & CCSA
2.	10:10 [20 mins]	Current Work Recap	Christie Hazell-Marshall (Chair)
3.	10:30 [45 mins]	Discussion: Problem Setting	All
4.	11:15 [45 mins]	Discussion: Prevention, Mitigation or Adaptation Solutions – how to create environmental headroom	All
5.	12:00 [15 mins]	Conclusion & next steps	Christie Hazell-Marhsall (Chair) & CCSA
6.	12:15	Networking Lunch	

Workstream Objectives

1.

- Written output on an industry position, outlining the issue and providing recommendations to mitigate it.

2.

- Potential positions from industry fed into regulators during next workshop.

3.

- Forward plan for engagement between industry & regulators.

4.

- Proposed evidence gathering to support work.

- Following-up from 2021 Pathway to Permitting workshops
- Further discussions held between CCSA members and EA in December 2024 where an action arose *for industry to form a working group on cumulative impacts with EA involvement*
- Dedicated scene-setting workshop taking place **today, 2 December.**
- Additional workshops will take place in **February** – calendar placeholders will be circulated shortly.
- Regulators, including Environment Agency, NRW, and Natural England have expressed strong interest in discussing industry recommendations and would like to participate in subsequent workshops in 2026.
- Teesside will be used as a case study.
- Work will build on and be informed from existing research:
 - Cumulative air quality impacts [report](#)
 - Environmental capacity in industrial clusters [reports](#)
- Updates will be provided through the CCSA Permitting & Planning Working Group.

Environmental Capacity Report Recommendations

Permitting

1. Consider new approaches to permitting (e.g. address non-permitted projects)
2. Review existing permits
3. Review regulatory framework and approach to land remediation
4. Model cumulative emissions to air and water (industry/government collaboration)
5. Commission a study on pollution off-setting

Planning

1. Integrate industrial cluster growth into planning reforms
2. Cluster strategic planning
3. Use strategic environmental assessments or environmental outcomes reports
4. Industry to develop industrial cluster growth forecasts

Environmental Capacity Report Recommendations (cont.)

Water Availability

1. Bring water abstraction licensing into environmental permitting
2. Develop cluster-scale water reuse and recycling schemes
3. Create water demand forecasts (industry and water sector collaboration)

Water Quality

1. Greater transparency on wastewater impacts (industry and regulator collaboration)
2. Develop an approach for mitigating nutrient pollution from industry

Air Quality

1. Establish a cluster-scale ambient air monitoring programme (industry/government collaboration)
2. Support research and development of innovative alternative non-amine-based carbon capture products





CCSA: Industry Discussions on Cumulative Impacts to Ambient Air

Chaired by: Christie Hazell-Marshall, ERM
Date: 02 December 2025

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Background

- Carbon Capture and Storage is an emerging technology
- Little existing regulation or guidance on the sector
- Multiple industry specific challenges:
 - New technologies with few, if any, operational plants
 - No neat fit into current regulations
 - Changes to ‘classic’ pollutant emissions due to retrofits
 - Novel emissions with new complexities – amine chemistry
 - Development of multiple projects in clusters
- “Path to Permitting” workshops: bring together CCSA membership and UK Environmental Regulators to discuss key challenges
- Environment Agency have started to look at Cumulative Impacts but gaps remain

Cumulative impacts:

- Required to enable industrial clusters to be developed
- Current “first off the rank” methods will not work
- Essential for protection of human health and ecology
- No robust mechanism in current Planning or Permitting regulations
- No recognised method for quantifying significance of impacts of multiple projects
- Limited ‘headroom’ for multiple pollutants
- Absence of baseline monitoring for novel pollutants
- Uncertainty in impact assessment methods drives towards conservative assessment

There is an need to agree how to undertake cumulative impacts so that the burden can be shared without unduly penalising early or late uptakers

Environment Agency work to date

Staged process to develop pollutant specific Environmental Assessment Levels (EALs):

- Limited number published in Permitting Guidance
- Second tranche published in consultation
- Third tranche in development
- Project developers may derive and propose own EALs

EA Report: “**Environmental impacts of emerging carbon capture technologies for industrial decarbonisation, 2025**”:

- Identified lack of information as a critical gap
- No specific consideration of cumulative impacts

Begun to look at creation up headroom through lowering emission limits on existing Permits

EA report: “**The cumulative air quality impacts of net zero technologies: a case study of the Teesside and Humberside industrial clusters, 2025**”:

- Reflected emission limits for N-amines in recent Permits
- Significant uncertainty in conversion of amines to N-amines (range of 1% to 10%), due to absence of detailed information
- Significant increases in nitrogen dioxide, but not exceedances
- Widespread exceedances predicted of N-amines EAL ($0.0002\mu\text{g}/\text{m}^3$) in Teesside and Humberside
- Potentially significant adverse impacts to ecological receptors

AERIUS-type approach being considered:

- Based on Dutch method for assessing cumulative nitrogen deposition

How do we do Cumulative Assessment?

Challenges:

- Lack of availability of detailed impacts, particularly at early project stages
- Large uncertainties to address
- Need to assess complex emissions and atmospheric chemistry
- No established toolkit for combining projects
- No regulatory basis for assessing cumulative impacts and assigning significance
- No means of assigning 'proportion of impacts' to individual projects
- Lack of baseline data

Solutions?:

- *An answer better than no answer?*
- Adoption of reasonable assumptions and approaches?
- Development of online toolkit into which impacts can be input?
- Early stage projects included using a 'standardised' project impact, replaced with detail as this becomes available
- Proportional assignment of allowable impacts? What metric?

How do we do Cumulative Assessment?

Questions:

- Burden on bigger emitters or proportionally shared by all?
- Balance of early versus late uptakers
- Quantification of cost of mitigation, and who will bear those costs
- Emerging Best Available Techniques and should maximum abatement be applied to every project
- Role of cumulative mitigation outside CCS plants (ie agriculture) to benefit the whole cluster
- Role of monitoring, understanding that modelling is inherently conservative (and what if monitoring shows a problem?)
- Limitations in monitoring of novel compounds, particularly N-amines
- Risks and opportunities of evolving regulatory landscape and/or public opinion