

ROYAL SOCIETY OF CHEMISTRY
WORKSHOP ON EVALUATING THE RELIABILITY AND RELEVANCE OF
ENVIRONMENTAL EXPOSURE DATA (24 MARCH 2026, LONDON)

Meeting Note

The purpose of this note is to highlight points of discussion and to draw attention to challenges and unresolved questions. The presentations have been provided to provide the content of the meeting. A section on 'future look and what next' is provided at the end.

Queries, questions, comments and clarifications are most welcome.

Discussion points and questions raised through the meeting

- The primary issue raised was about how datasets with differing levels of quality can be combined. There is no straight-forward answer and this is not solely a CREED issue, but guidance would be extremely useful. Could an SSD-like approach be applied using dataset summary statistics?
- It is also important to understand the difference between a criterion that is not met and one that is not reported, e.g., total vs. dissolved concentrations maybe reliant on the need for supporting data, e.g., pH, lipid content, moisture content, which may not be available.
- CREED facilitates the identification of limitations in the data, which can then be accounted for in subsequent assessments, and addressed. Even where data are limited (perhaps even not meeting gateway criteria) if they are the ONLY data available, then an assessment may be undertaken, with the limitations clearly stated. However, this would have serious implications in terms of the conclusions that could be drawn from the assessment.
- At the time of CREED development the 'Reliability group' had many discussions around the amount of guidance that it might provide on methods – it was decided that much of this guidance existed and so CREED does NOT address, suitable methods for analysis, sampling methods (spot, continuous), sample preparation, appropriate sample locations. It is not the purpose of CREED' to prescribe a "right" way for sampling and analysis.
- But, do need to ensure adequate reporting so that limitations in data can be identified.
- The CREED approach does not appear to be suitable for evaluating some types of data, such as that derived from non-target analysis, and further development would be required for this type of information to be properly evaluated.
- An advantage of the CREED framework is that it lowers the barrier for applying expert judgment and gives guidance on how to generate a quality dataset. However, as with CRED, expert judgment is still essential.
- CREED should ensure consistency of data requirements for a purpose from whoever provides it, regulators, academics and industry.
- The silver standard should be reasonable for operational and regulatory monitoring data, but the gold standard, especially for reliability, should be achievable for academic research.

Future look and what next?

CREED2?

- Monitoring budgets are onerous upon regulators, high resolution approaches are becoming more common, but these can not currently be CREED assessed. Is there a way to allow such approaches to be CREED assessed, potentially an alternative gateway, with explicitly provided 'limitations'?
- Additional areas to CREED, might cover other areas such as;
 - Environmental fate – can exposure data be used to infer environmental fate? Do we need to/ can we develop criteria and how does this compare with standard methods?
 - Air quality and atmospheric monitoring data?

- Human health exposure data
- Including means to evaluate other 'non-traditional' forms of environmental monitoring data, such as citizen science?

Outreach

- SETAC workshops for researchers and students with exposure data (North America/Asia)
- RSC workshops, e.g. associated with the 2026 #EnvChem conference
- Engage all SETAC interest groups to develop procedures/ guidance for different matrices
- 'Young scientists' – A-level/high school students
- EEA to encourage CREED for national data suppliers and data holders – improvements in data recording, proforma?
- Like CRED before, ask journal editors to ensure exposure data are CREED assessed before publication

Evaluation tool

- Currently, users need to create a spreadsheet of high-level information for synthesis from multiple CREEDs – real pain for multiple papers (NIVA Chap?)
- Better tool? But if to be used widely, simplest most readily available package best
- Could there be a data repository for reliability evaluations – e.g. Zenodo?