Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	Page 1. The title clearly states “A Scoping Review,” thereby identifying the report as a scoping review.
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	Page 1. The abstract provides a structured summary including background and rationale, objectives, methods, results, and conclusions, consistent with PRISMA-ScR guidance.
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	Pages 1–3. The introduction outlines the rationale for the scoping review, noting fragmentation in existing research on industrial symbiosis and carbon capture tools, limited implementation guidance, and the need for an integrated, data-driven synthesis that includes practitioner perspectives.
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	Page 3. The objectives and research question of the scoping review are explicitly stated, specifying the aim to identify data-driven tools and methods and the factors influencing their effective deployment.
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	Page 4. The manuscript states that a review protocol was developed and internally reviewed prior to conducting the scoping review, and that the protocol was not registered in a public database.
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	Page 4. Eligibility criteria are clearly defined, including study focus, study design, publication type, language restrictions, and exclusion criteria, with justification provided.
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	Page 4. The manuscript reports all information sources used in the search, including Scopus, Web of Science, and IEEE Xplore, and specifies that searches were conducted up to

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			June 2025.
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	Page 4. The complete electronic search strategy is reported, including keywords, Boolean operators, and filters, enabling reproducibility of the search process.
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	Pages 4–5. The selection process is described, including duplicate removal, title and abstract screening, full-text assessment, and resolution of disagreements through discussion and a third reviewer.
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	Page 5. The manuscript describes the data charting process, including the use of a standardized extraction form, pilot testing, independent extraction by two reviewers, and procedures for resolving discrepancies.
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	Pages 5–6. All data items extracted from the included studies are explicitly listed and defined, including study characteristics, methodological details, tools and methods, stakeholders, and key findings.
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	Page 5. The manuscript states that no formal critical appraisal of individual sources of evidence was conducted, consistent with PRISMA-ScR guidance.
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	Pages 5–6. The methods used to synthesize results are described, including thematic analysis and contextual synthesis to map tools, methods, and implementation factors.
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	Pages 4–5. The results of the search and selection process are reported using a PRISMA flow diagram, including the number of records identified, screened, excluded, and included.
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	Pages 5–21. The characteristics of the included evidence sources are summarized at an aggregate level, covering publication trends, geographic distribution, tool

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			categories, and application contexts.
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	Page 5. No critical appraisal of individual sources of evidence was performed, as explicitly stated in the manuscript.
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	Pages 10–21. Results from individual sources of evidence are presented through a categorized synthesis and detailed tables describing tools, methods, functions, and applications.
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	Pages 7–25. The synthesized results are presented through thematic groupings, comparative analysis between literature and survey findings, and integrated interpretation across tool categories.
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	Pages 26–33. The discussion summarizes the main findings of the scoping review, highlighting patterns, gaps, convergence and divergence between literature and practice, and relevance for stakeholders.
Limitations	20	Discuss the limitations of the scoping review process.	Pages 4–7 and 23–25. The manuscript acknowledges limitations related to protocol registration, database coverage, language restrictions, lack of formal quality appraisal, and the limited size and scope of the practitioner survey.
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	Pages 33–34. The conclusions interpret the results in relation to the review objectives, discuss implications for research and practice, and outline directions for future work.
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	Page 34. The manuscript reports the funding source supporting the study and states the project under which the research was conducted.

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.
* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.
† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).

‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.
§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

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