



Factors Affecting Public Awareness and Acceptance of CO₂ Capture, Transport and Storage: A Transnational Comparison

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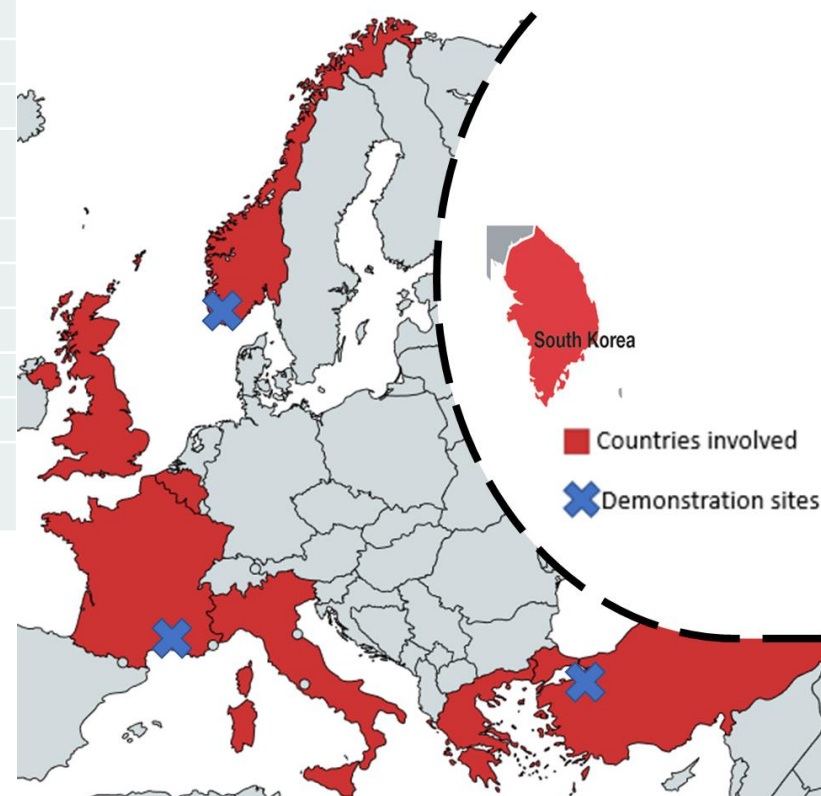
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 837975. This output reflects only the author's view and the European Union cannot be held responsible for any use that may be made of the information contained therein.

General information

- **The MOF4AIR Project:** Metal Organic Frameworks for carbon dioxide Adsorption processes in power production and energy Intensive industRies
- This project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No. 837975
- Coordinator: University of Mons
- MOF4AIR gathers 14 partners from 8 countries (including South Korea)
- Overall budget: 11M€
- Duration: 48 months (01/07/2019 – 30/06/2023)

General information - Consortium

| No | Participant organisation English name | Type of organisation | Acronym |
|----|---|-----------------------|---------|
| 1 | University of MONS | Research Organisation | UMONS |
| 2 | SINTEF AS | | SINTEF |
| 3 | Centre National De La Recherche Scientifique | | CNRS |
| 4 | Politecnico di Milano | | POLIMI |
| 5 | Centre for Renewable Energy Sources And Saving | | CRES |
| 6 | SIKEMIA | SME | SIKEMIA |
| 7 | MOF Technologies Limited | | MOFTECH |
| 8 | Korea Research Institute of Chemical Technology | Research Organisation | KRICT |
| 9 | ENG TECH Co. | SME | ENGTECH |
| 10 | Technology Centre Mongstad | End-user | TCM |
| 11 | SOLAMAT MEREX | | SOLAMAT |
| 12 | Türkiye Petrol Rafinerileri A.Ş. (Tüpraş) | | TUPRAS |
| 13 | Euroquality | SME | EQY |
| 14 | Türkiye Çimento Müstahsilleri Birliği | Cement association | TCMA |



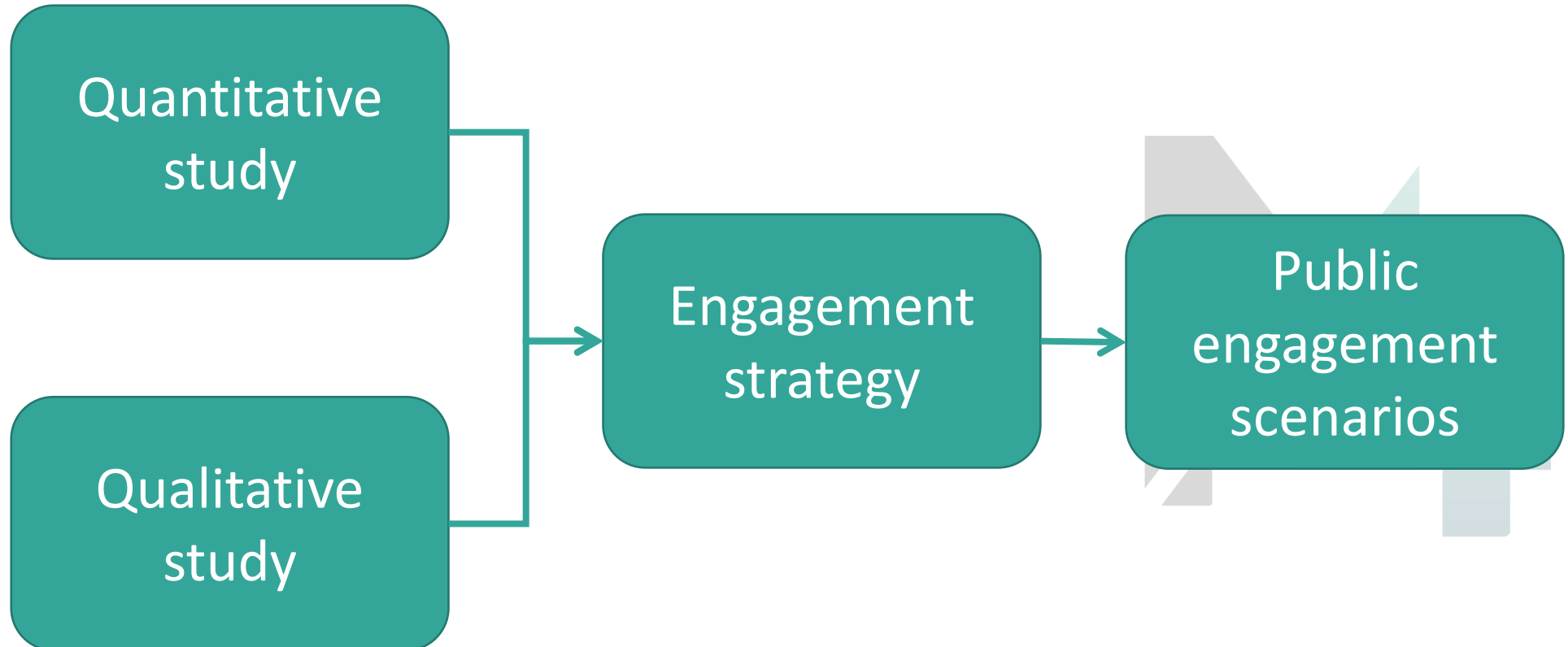
Objectives

- Increase the cost effectiveness of CCS and decrease its energy penalty;
- Qualify and validate the most promising MOF materials for adsorption-based carbon capture;
- Fine-tune adsorption processes for high performance MOFs;
- Demonstrate the performance of MOF based carbon adsorption in real operation;
- Ensure the technology replication in other CO₂ and energy intensive industries and its sustainability;
- Increase stakeholder & public awareness of the challenges, benefits & issues related to carbon capture, transport, use & storage.

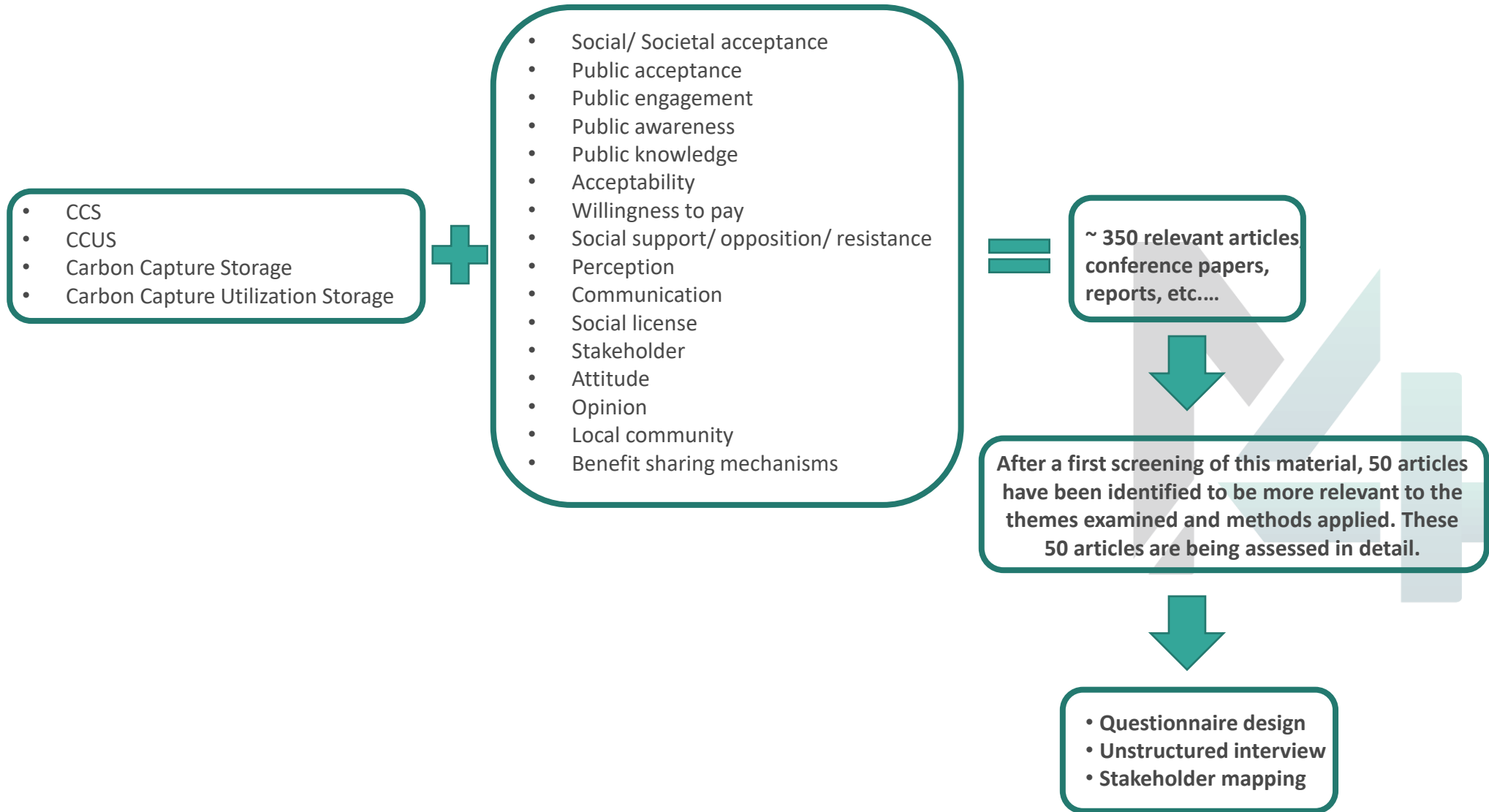
The MOF4AIR Methodology

- MOF4AIR is built on 11 WPs:
 - **WP1:** Identification of the most adequate processes and MOFs, led by CNRS
 - **WP2:** Validation of the best MOFs, led by CNRS
 - **WP3:** Validation of the shaped material in lab, led by UMONS
 - **WP4:** Modelling and techno-economic numerical optimization, led by SINTEF
 - **WP5:** Validation of the selected separation technology in relevant environment, led by SINTEF
 - **WP6:** Scale-up and demonstration in an industrial environment, led by TUPRAS
 - **WP7:** Techno-economic and environmental analysis, led by CRES
 - **WP8:** Transferability, replicability and social issues, led by CRES
 - **WP9:** Communication, dissemination and exploitation, led by EQY
 - **WP10:** Management of the project, led by UMONS
 - **WP11:** Ethics requirements, led by UMONS

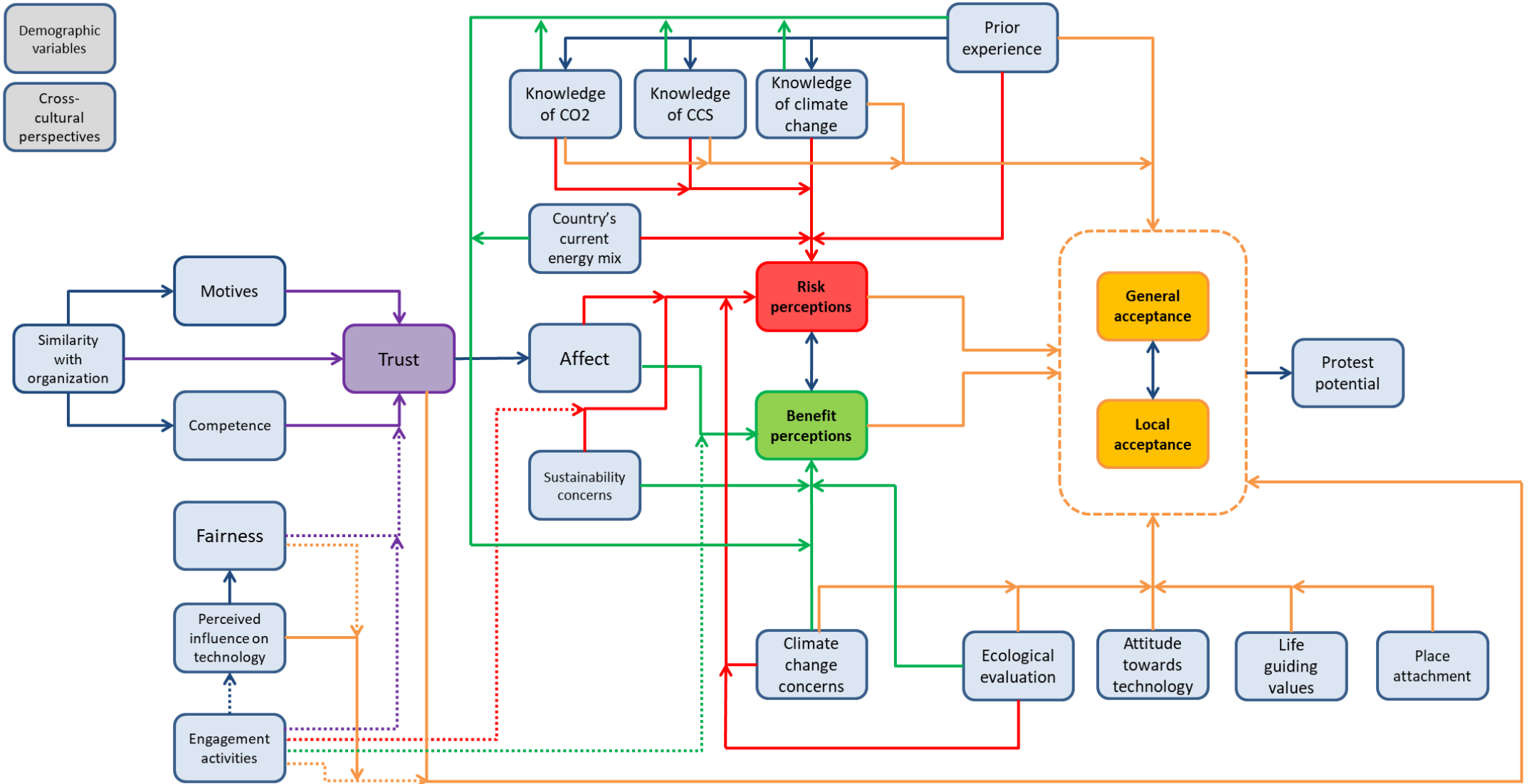
Task 8.1: Study of social issues related to capture, transport and storage of CO₂



Literature review



Conceptual model



* Based on statistically significant empirical findings of CCS-focused quantitative studies

Questionnaire structure

1. CCS knowledge

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2. Knowledge (climate change, CO₂)

3. Prior experience

4. Risk perception

5. Benefit perception

6. Sustainability concerns regarding CCS

7. Trust of relevant stakeholders

8. Affect (positive/ negative)

9. Climate change concerns

10. Environmental behavior

11. Technophilia

12. General attitude towards risks and safety

13. Life-guiding values

14. Engagement activities

15. Fairness (procedural / distributional)

16. Place attachment

17. General / local acceptance intention

18. Demographic characteristics



Study's innovative aspects

Innovative aspects compared to previous relevant studies:

- Transnational comparison;
- Comparison between different phases (capture, transfer, storage);
- Comparison between general and local acceptance;
- Emphasis on factors that have not been thoroughly examined yet:
engagement activities, fairness;
- Creation of model examining the relations between all the above issues,
in relation to acceptance and risk/ benefit perceptions.



Thank you

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