

Carbon capture and storage (CCS) in the Swedish cement industry – logistics collaboration potentials in the Baltic area

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Abstract. The cement industry in Sweden is facing a major climate change. A central part of the transition is carbon capture and storage (CCS), which is to be implemented in the Swedish largest cement production site on Gotland by 2030. For CCS to be realized, a reliable cost- and environmentally efficient logistics system for CO₂ is required, which for the Swedish cement production on Gotland means CO₂-transport by ship. A research project has been initiated during 2023 with the aim of increasing the cement industry's knowledge and understanding of possible CO₂ logistics systems for CCS. The project takes a larger innovation system approach of CCS by mapping current knowledge about CO₂-logistics for CCS and emerging industrial and logistics actors in the Baltic area and North Sea. Further, logistics scenarios from the perspective of the cement industry will be investigated as well as opportunities for fossil-free CO₂-shipping and business models for the cement industry's CO₂-logistics. The Baltic area includes heavy CO₂ emitting industries both from cement production as well as steel, pulp & paper, power & heat with locations nearby a port, in which there are several initiatives to apply CCS. Further research will investigate how different types of cross-border collaborations could influence the efficiency of the CO₂-logistics system. The project supports the cement industry's decisions regarding processes for the design of CO₂-logistics arrangements for CCS.

Keywords: CO₂ logistics, cement industry, carbon capture and storage, CCS.

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