Qualitative study: How the cement producer Norcem interacted with local stakeholders to reinforce public acceptance for CO$_2$ capture

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Abstract

Globally, the cement industry contributes with about 7% of anthropogenic CO$_2$ emissions. Hence, many point to CO$_2$ capture and storage (CCS) for the cement industry as a measure to reduce greenhouse gas emissions (Dütschke et al., 2016; WWF, 2009; Rootzén et al., 2011). Furthermore, social acceptance is considered pivotal for successful CCS implementation. However, few studies - if any - have made a case study of a cement producer's CO$_2$ capture project, its communication approach and related public acceptance. Furthermore, Brunsting et.al. (2011) find that research aiming at examining how CCS communication strategies have influenced public perceptions provides inconsistent results. This study argues that one has to go beyond the communication approach itself. It suggests that the significance of the project owner's historic position in the community can be crucial to understand the effectiveness of the communication approach. Today little research exists on this topic.

This study targets the mentioned research gaps by looking at the Norcem cement plant's on-site demonstration of CO$_2$ capture. The objective is to investigate Norcem's communication with local stakeholders in Brevik, Norway, and to consider if these experiences can be employed to reinforce local public acceptance for CO$_2$ capture projects in other local communities. The study is thus a case study. It draws on the work by Haug and Stigson (2016) and describes in more detail the historical development of Norcem in the Brevik society and, in this light, investigates the Norcem communication approach for the CO$_2$ capture project and the local inhabitants' perception of the economic, social and environmental risks and benefits related to this activity. Historically, the local inhabitants have been openly informed about the planning and development of Norcem's activities. A resident's organization, Brevik Vel, was established in the mid-1980s, and this organisation has regular meeting 2 – 4 times per year. In addition, the cement plant has been a cornerstone company and a natural part of peoples’ everyday lives for over 100 years. Accordingly, Norcem has consolidated itself as a part of Brevik's history and identity. Nevertheless, some local interest groups are sceptical towards Norcem's involvement in other activities. The study discusses whether this reluctance influences these groups' attitudes towards Norcem's CO$_2$ capture project.

The study is a unique case, however findings is expected support discoveries in other CCS case studies that close interaction with key stakeholders is key (e.g. FutureGen by Hund and Greenberg, 2010). It is also expected that the study will assume that other CO$_2$ capture projects can build on the following lessons: To start building trust well ahead of even launching the plans for CCS in the local community and to strive for deliberation processes where all affected in principle have the same opportunity to express their point of view. It is expected that for exactly these reasons, Norcem has
since 2006 (when CO₂ capture first came on the agenda) been in a favourable situation for on-site testing of CO₂ capture technologies at the cement plant in Brevik. Norway is considered one of Europe's leading countries in planning for deploying large-scale CCS. The current study should thus be of interest for Norwegian politicians, decision makers, industry representatives as well as researchers from both the technical and social aspects of the CCS field.

The study relies on document analysis of primary and secondary sources, as well as in-depth interviews with local inhabitants, municipal representatives, politicians and civil society organizations.

**Disclaimer**
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**References**


