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Communication supporting the research on CO_2 storage at the Ketzin pilot site, Germany – a status report after ten years of public outreach

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Abstract

Since 2004, research at the Ketzin pilot site in Germany contributes to the understanding of the geological storage of carbon dioxide (CO_2). For the Ketzin project public outreach has been a key element from the very beginning. Involvement of the local public, scientists, stakeholders and competent authorities allowed for the consideration of their different interests. The dissemination of up-to-date and factual information along the entire chain of activities is a central component of the project. The work presented here summarizes the activities and the experiences of the public outreach accompanying the research on CO_2 storage at the Ketzin pilot site.

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1. Introduction

"We are not afraid of the things that probably kill us, but of those others are afraid of. Here education policy and enlightenment are essential, so we are not being chased from a crisis to the next, without understanding." after Gerd Gigerenzer, director of the Max Planck Institute for Human Development in Berlin, Communicator Award 2011 (Interview translated from German into English, Stifterverband, www.stifterverband.info, 03.2013).

The introduction of new technologies can be influenced by the attitude of the general public [1]. Surveys investigating the awareness of carbon capture and storage (CCS) among the general public in Germany, for example show that CCS was still largely unknown in Germany in 2009, except in regions where a pilot power plant and a CO_2 storage site were planned, respectively [2]. But even in these specific regions only minor parts of the population stated to really know something about CCS. Results also suggested that survey participants perceived capturing CO_2 to be less problematic than transport and geological storage of CO_2 [3].

In order to increase the perception of the topic of CO_2 storage among the general public and to give people the possibility to develop an informed position the early start of information activities, the open and factual discussion of the technical, juridical, safety and environmental aspects of the technology with a suitable communication policy are recommended in socio-economic studies and public outreach manuals [4,5,6].

The societal relevance of the topics climate change in general and CO_2 storage in particular underlines the responsibility to inform the general public and especially the local population about the motivations, activities, risks and the developments.

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Worldwide, there is already a variety of commercial and research CCS/CO_2 storage projects. The internationally known storage project at Frio (USA) for example informed the general population through site visits, newsletters and an online log of research activities [7]. Information centers for CO_2 storage are also operated at some locations like Otway (Australia) and Decatur (USA). Projects that have recently started like Aquistore (Canada) integrate public events on site in their information concept, too [8,9].

As for other CO_2 storage projects, public acceptance is also an important aspect for the Ketzin project in Germany. Early and continuing cooperation with researchers, authorities, stakeholders and local residents [10] tries to consider all the different interests, as there are for example:

- The further usage of the site after abandonment of the former gas storage (see chapter 3.1),
- Safe and detailed research into CO_2 storage,
- Being well informed about the project progress,
- Contributing to safe operation of future commercial CO_2 storage sites and
- Increasing the public perception of CO_2 storage.

Since 2004, the research activities led by the GFZ German Research Centre for Geosciences have been accompanied by an open and transparent information policy and the following key communication objectives were identified:

- Inform all interested parties about the principles of geological storage, the plans and progress of the research activities at Ketzin.
- Assist in demonstrating to the local community the set-up and results of monitoring techniques.
- Identify issues likely to arise as a result of the project and prepare responses.

2. The Ketzin pilot site in brief

The GFZ runs Europe's longest-operating on-shore CO_2 storage site at the town Ketzin near Berlin. Predominantly within the frame of the European project CO_2SINK (CO_2SINK – CO_2 Storage by Injection into a Natural Saline Aquifer at Ketzin, 2004-2010) and the German funded follow-up project CO_2MAN (CO_2 Reservoir Management, 2010-2013) the Ketzin pilot site has been developed and the infrastructure been built. Investigations covering all aspects of a CO_2 storage site are conducted with the main focus on monitoring and modelling.

Injection of CO_2 at the Ketzin pilot site started in June 2008 and ended in August 2013. During this time, a total of 67,271 tonnes of CO_2 were injected. The sandstone formations used for this purpose lie at a depth of 630 m to 650 m and are sealed by more than 165 m of shaly cap rocks [11]. The Ketzin infrastructure comprises four deep and one shallow observation well for injection and/or monitoring. So far, geological storage of CO_2 has proceeded in a safe and reliable manner with no indication for any CO_2 leakage [12,13,14].

3. Communication at the Ketzin pilot site uses various tools

Our concept focuses on the local community but also on interested people from Germany and abroad. Thereby, we try to respond to interested laymen, the science community as well as decision makers and the responsible authorities. The concept of communication and dissemination of information uses different communication tools and is based on:

- Close cooperation with the local community
- Visitor centre and service at the Ketzin pilot site
- Project website since the very beginning
- Educational and information activities
- Provision of appropriate information material.

The information material itself was developed considering the varying background and knowledge of the audiences. People are informed for example via a website, brochures and short films. Moreover, several hands-on experiments were added to the information supply, in order to demonstrate CO_2 storage.

Fig. 1 gives an overview of the chronology of public outreach activities within the Ketzin project.

3.1 Direct communication and close cooperation with residents and authorities

The research activities at the pilot site have received support from the town of Ketzin from the inception of the project. In the early project stage, GFZ discussed with the owner of the land and of the mining rights (VNG Gasspeicher GmbH, VGS) and the