



## **The DELPHI expert process of the German umbrella project AUGE as basis for recommendations to CO<sub>2</sub> storage in Germany**

Peter Pilz, Birgit Schoebel, and Axel Liebscher

GFZ German Research Centre for Geosciences, Telegrafenberg, 14473 Potsdam, Germany

Within the GEOTECHNOLOGIEN funding scheme for geological CO<sub>2</sub> storage by the Federal Ministry of Education and Research (BMBF) in Germany 33 projects (135 subprojects) have been funded with a total budget of 58 Mio € (excluding industry funds) from 2005 to 2014.

In 2012, the German parliament passed the transposition of the EU CCS Directive 2009/31/EG into the national “Carbon Dioxide Storage Law” (KSpG). Annex 1 of the KSpG provides a description of criteria for the characterization and assessment of a potential CO<sub>2</sub> storage site. Annex 2 describes the expected monitoring system of a CO<sub>2</sub> storage site. The criteria given in the appendices are of general nature, which reflects (1) that the CO<sub>2</sub> storage technology is still being developed and (2) that site specific aspects needs to be considered.

In 2012 an umbrella project called AUGE has been launched in order to compile and summarize the results of the GEOTECHNOLOGIEN projects to underpin the two Annexes scientifically. By integration of the individual project results AUGE aims at derive recommendations for the review and implementation of the KSpG. The recommendations shall be drafted based on a common ground of science, public authorities and industry. Therefore, the AUGE project includes a Delphi expert process as an essential part. It is realized in cooperation with the company COMPARE Consulting, Göppingen.

The implementation of the Delphi-Process is organized in three steps:

- After the technical preparation of a standardized questionnaire (2014/2015) it was sent to 129 experts from science, industry and public authorities in Germany. After a few weeks of consideration time, 40 persons (30 %) had decided to participate actively in this inquiry.
- Following the results of the first interrogation campaign, the second survey campaign started at the end of 2015. The same list of questions was used, complemented with the results of the first inquiry campaign. The intention is reduce the variance of the answers. 20 persons opted for replying in this second inquiry. The analysis of the step two results is in progress currently.
- In the third step, it is planned to have 15 – 25 experts from all participating interest groups discussing the especially controversial questions in a workshop. The aim is to find a common sense for the recommendations. This third step of the Delphi-process is scheduled in the first quarter of 2016.

The first step spanned the pool for recommendations, but the variety was too high for achieving a common sense. The variety could be significantly reduced in the second step. Possibly a final workshop is not necessary to achieve a sustainable common sense.