



16th International Conference on Greenhouse Gas Control Technologies **GHGT-16**

23-27th October 2022, Lyon, France

What influences public attitudes and acceptance of CCUS technologies on the national and regional level? Results from a survey study in France and Spain

Elisabeth Dütschke^a, Christian Oltra^b, Sabine Preuß^a, Lila Gonçalves^b and Silvia Germán^b

^aFraunhofer ISI, Breslauer Str. 48, 76139 Karlsruhe, Germany

^bCIEMAT, Plaça del Coneixement s/n, 08193, Barcelona Spain

Abstract

Introduction: This paper presents findings from a recent survey study on the acceptance of carbon capture, utilization, and storage (CCUS) from two countries that have rarely been studied in the last years: France and Spain. It is part of the Strategy CCUS-project, which develops strategic plans on CCUS for regional industry clusters in South-East Europe. In the countries under study, the regions for potential CCUS development include the Spanish Ebro Basin and the French Rhône Valley. Building on previous research, our study differentiates between acceptance at the national and the regional level as well as between CCS and CCU simultaneously. We assess levels of awareness, attitudes towards and indicators of acceptance for CCUS. We also identify the key individual-level determinants of acceptance of both technological options in the four study populations.

Method: Representative samples on the national and regional level from each country (n= 1300 per country) took part in the survey conducted online. The samples were recruited from existing online panels; they were representative for the age and gender groups in each study population and had an approximate distribution regarding region and education. Data was collected during summer 2021 (June to August).

Results: Respondents in the four study populations reported, on average, more positive emotions towards CCU than towards CCS. CCU was perceived as more innovative, necessary, economical, safe, less tampering with nature and more beneficial for the regional and national economies by respondents relative to CCS. At the national level, more than half of respondents would accept the development of CCUS technologies in their country. Acceptance levels were higher for CCU (60 per cent) relative to CCS (50 per cent). Acceptance was higher in Spain (65 per cent for CCU and 54 per cent for CCS) compared to France (56 per cent for CCU and 46 per cent for CCS). The main individual-level predictors of acceptance of CCS and CCU included the perception about positive economic impacts of CCUS developments as well as prior pro-technology beliefs. Perceived tampering with nature predicted acceptance of CCS at the regional level and acceptance of CCU at the national level. Perceived risk played a role in the acceptance of CCS and CCU at the regional level. At the national level, acceptance of CCS was also related to affect and trust in energy companies while acceptance of CCU was related to the perceived seriousness of climate change.

Conclusion: Overall, we found significant differences in the overall public evaluation and acceptance of CCU and CCS as well as between the four study populations. The factors predicting acceptance also varied among study populations. These results contribute to improve our understanding of public perception of CCUS technologies through cross-national research. As CCUS initiatives in Europe develop, properly engaging the public at the national and the regional level will likely play a crucial role in the success of CCUS projects.

Keywords: Survey, public perception, CCS, CCU
