



# Carbon Capture, Utilization, and Storage Potential in South Sudan's Fossil Fuel Plants: An Ethnographic Study

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## Abstract

This ethnographic study examines the potential for Carbon Capture, Utilization, and Storage (CCUS) in South Sudan's fossil fuel plants within the context of climate change mitigation strategies. Qualitative data were collected through semi-structured interviews with 30 stakeholders including government officials, industry representatives, and community members. A thematic analysis approach was used to interpret the qualitative data. Community resistance is evident in plans for CCUS projects, primarily due to concerns over environmental impacts such as land use changes and potential health risks from emissions management systems. Local communities view CCUS with skepticism, highlighting the need for comprehensive community engagement and tailored policy interventions to facilitate successful implementation of CCUS projects in South Sudan's fossil fuel sector. Stakeholder collaboration is recommended to address resistance. Policies should emphasise transparent communication strategies and benefits-sharing mechanisms to build trust and support among communities. The empirical specification follows  $Y = \beta_{0+\beta}^{-1} p X + \text{varepsilon}$ , and inference is reported with uncertainty-aware statistical criteria.

**Keywords:** *African Geography, CCUS Potential, Ethnography, Fossil Fuels, Indigenous Knowledge, Methodology, Sustainability*

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