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Carbon dioxide (CO\textsubscript{2}) is the main compound identified as affecting the stability of the Earth's climate. A significant reduction in the volume of greenhouse gas emissions to the atmosphere is a key mechanism for mitigating climate change. Geological storage of CO\textsubscript{2}, or the injection and long-term stabilization of large volumes of CO\textsubscript{2} in the subsurface in saline aquifers, in existing hydrocarbon reservoirs or in unmineable coal seams, is one of the more technologically advanced options available. A number of studies have been carried out and are reported here. They are aimed at understanding the safety, physical and chemical behaviour and long-term fate of CO\textsubscript{2} when stored in geological formations. Until efficient, alternative energy options can be developed, geological storage of CO\textsubscript{2}, the subject of this volume, provides a mechanism to reduce carbon emissions significantly whilst continuing to meet the global demand for energy.

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Cover illustration:
Time-lapse seismic data across the Utsira Formation, the world's first long term CO\textsubscript{2} storage reservoir, at Sleipner field, North Sea. The images (from left to right) show pre-CO\textsubscript{2} injection, 3 and 5 years post-CO\textsubscript{2} injection data acquired across the injection point. High amplitude reflections are observed throughout the storage reservoir, illustrating the intra-reservoir distribution of the CO\textsubscript{2}.

(Seismic image provided by Statoil and the SACS project partners.)