

Abstract

Building on the Operation Experiences of Carbon Capture, Utilization and Storage

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Saskatchewan's expertise in Carbon Capture, Utilization and Storage (CCUS) technologies projects is a good example of how to "green up" conventional energy resources. Saskatchewan, Canada provides a viable business case for commercial-scaled CCUS demonstration integrated with enhanced oil recovery (EOR) operations, and for continued clean use of coal as a sustainable energy source, in context of expected uncertainty.

In the province the following projects have been implemented: the IEA Weyburn-Midale (oilfields) CO₂ Monitoring and Storage Project--- the world's largest monitored and verified commercial scaled CCUS-EOR operations since 2000, and the world's first large-scaled CCUS facility at Boundary Dam power station (1 million tonnes of CO₂/ year) and the world's largest deep (3400m) geological CO₂ storage project since 2014, the first open carbon capture technology test facility established through international partnership since 2015. Since 2000, 30 millions tonnes of fresh anthropogenic CO₂ have been stored on oil fields through enhanced oil recovery using CO₂. About 10 million tonnes of incremental oil have been recovered using CO₂, which otherwise could not have been extracted.

The International CCS Knowledge Centre (Knowledge Centre) was mandated to advance the global understanding and deployment of large-scale carbon capture and storage (CCS/CCUS) to reduce global greenhouse gas (GHG) emissions and to secure sustainable energy supply. The Knowledge Centre provides the know-how to implement large-scale CCS projects as well as CCS optimization through the base learnings from both the fully-integrated Boundary Dam 3 CCS Facility (BD3) and the comprehensive second-generation CCS study.

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