

Operating Conditions Study for CO₂ Transport

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CCS is thought to be a practical solution for control of CO₂ emission level in atmosphere. It becomes even more challenging when CO₂ is transported to an offshore storage since there is little experience with subsea pipelines for CO₂ transportation. In this study, a plausible transport and storage model scheme has been developed and then employed to study different offshore CO₂ transportation cases for distance of 150km long pipeline as: CO₂ transport in liquid phase (Temperature = -20 C, Pressure = 6.50 MPa); CO₂ transport in liquid phase (Temperature = 5 C, Pressure = 9.30 MPa); CO₂ transport in supercritical phase (Temperature = 40 C, Pressure = 15.00 MPa). Since the compressor is the most power consuming equipment, compression energy requirement per ton of CO₂ compressed for case 1, 2 and 3 was consequently 96.20, 99.75 and 118.26 KWh respectively. Transport cost varies between 10.9- 15.5\$ depending on specific scenario.

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