

Paper 08: CCUS – Integrating Digital Technologies for Enhanced Intelligence to Drive Decarbonization, Optimization and Compliance

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Abstract:

Leveraging digital technologies in CCUS represents a transformative approach to production operations by integrating data management systems, reservoir analysis software and production intelligence platforms into a unified digital ecosystem. Applying technologies such as Artificial Intelligence (AI), Machine Learning (ML), IoT sensors, digital twins, and advanced data analytics enables optimization from planning through monitoring and reporting. This convergence supports seamless data flow and cross-domain collaboration, improving efficiency, reducing downtime, and strengthening proactive asset management. In CCUS, digital technology unifies data, models, and decisions to enable decarbonization, optimization and compliance.