



2020-IP10: ADB TA 8714: Consultant's report

Background Study on CCUS Readiness in Power, Iron and Steel, Cement and Petroleum Sectors

The Asian Development Bank (ADB) recently published its report, "[Background Study on CCUS Readiness in Power, Iron and Steel, Cement and Petroleum Sectors](#)". A number of IEAGHG reports were referenced in this very useful and substantial study, which was peer-reviewed by Tim Dixon, Monica Garcia and Keith Burnard.

The report aims to help its member countries prepare for eventual decarbonisation with carbon capture utilisation and storage (CCUS), an important component of the portfolio of technologies they will need to smooth their transition to a low-carbon future. CCUS is one of the vital mitigation tools ADB has been promoting to limit global temperature rise and to avoid the worst impacts of climate change. At present, Asia is responsible for around half of global CO₂ emissions. Given the region is dominated by developing economies, many of which are rich in fossil fuels, it is imperative that mitigating measures are adopted to slow further rises.

As developing Asia creates new industries to meet its growing needs, it is likely to establish new steel mills, cement factories, petrochemical complexes and power plants. While these industries will likely be sources of new emissions, more importantly, they also offer opportunities for mitigating those emissions. By planning for and making new industry facilities and power plants 'CCUS ready', early opportunities are presented for CO₂ capture. Making them CCUS ready requires plans and capabilities to be in place for implementing CCUS at some future time when economic drivers or the regulatory environment change. The information shared in this ADB report provides policymakers, the finance community and industry professionals with information that will help them design their projects to be CCUS ready.

The report presents a wealth of information on the status of technologies and on the global and regional impacts of the power and industry sectors, particularly relating to Asia. As well as discussing at length some of the existing and upcoming CCUS technologies, it devotes a chapter to the basics of the transport, storage and utilisation of CO₂. While the capture side of CCUS often gains most attention, the importance of identifying and characterising viable storage prospects, whether in depleted oil and gas reservoirs, saline aquifers or coal seams, is equally important – and often more time consuming to put into practice. The major CO₂-emitting sectors – power, iron & steel, cement and petroleum – are addressed separately in the report, which goes on to investigate financing requirements and mechanisms, as well as policy drivers and recommendations, to advance CCUS readiness. Two case studies were undertaken – one on an NGCC power plant in Bangladesh and the other on a cement plant in Indonesia – both of which illustrate the approaches, methodologies and challenges to retrofitting CCUS on existing plants.

It is essential that, when new plants are designed for the power and industry sectors in Asia, CCUS readiness is a primary consideration. Critically, attention must also be given to retrofitting CCUS to existing plants. The assessment and case studies presented in this publication will help industry sector stakeholders and policymakers of developing ADB member countries increase their awareness and knowledge of CCUS and CCUS readiness, and to develop CCUS readiness plans with the view that CCUS is an important tool in the toolbox of measures to meet climate targets and transition to a low-carbon development path.

Keith Burnard