



China, People's Republic of: Promoting and Scaling Up Carbon Capture and Storage Demonstration

Project Name	Promoting and Scaling Up Carbon Capture and Storage Demonstration
Project Number	48453-001
Country	China, People's Republic of
Project Status	Approved
Project Type / Modality of Assistance	Technical Assistance
Source of Funding / Amount	TA 0025-PRC: Promoting and Scaling Up Carbon Capture and Storage Demonstration Carbon Capture and Storage Fund under the Clean Energy Financing Partnership Facility US\$ 5.50 million
Strategic Agendas	Environmentally sustainable growth Inclusive economic growth
Drivers of Change	Governance and capacity development Knowledge solutions Partnerships Private sector development
Sector / Subsector	Energy - Energy efficiency and conservation Industry and trade - Large and medium industries
Gender Equity and Mainstreaming	No gender elements
Description	The TA cluster will initially focus on capacity development support to the National and Local Joint Engineering Research Center for CCUS (NLJERC-CCUS) at Northwest University; and the feasibility assessment of a large-scale CCUS demonstration project at a plant of Yanchang Petroleum Group (YPG), which is identified in the road map and by NDRC as a priority demonstration project and is currently under development. Subsequently, the TA cluster will provide further support to future CCUS demonstration projects in the coal-fired power subsector and coal-chemical industry. The TA cluster modality is adopted to allow the inclusion of additional large-scale demonstration projects, beyond the initial Yanchang CCUS Project (YCCUSP), and to prepare a program of interrelated projects, in line with the 2016-2030 action plan for energy technology revolutionary innovations. The TA is well aligned with ADB's Strategy 2020 and its development agenda of achieving environmentally sustainable growth. ADB's country operations business plan, 2017-2019 named managing climate change and environmentally sustainable growth as strategic priorities of ADB assistance to the PRC.

Project Rationale and Linkage to Country/Regional Strategy

To meet its nationally determined contributions in line with the Paris Climate Agreement of 2015, the PRC has committed to achieve peaking of carbon dioxide (CO₂) emissions by around 2030 and, by the same year, to decrease its carbon intensity by 60%-65% from its 2005 levels. The PRC is one of the few countries that have included CCUS in their nationally determined contributions. The PRC depends heavily on fossil fuels, which account for more than 85% of primary energy supply in the PRC. To diversify its energy mix, it has committed to increase the share of renewable energy to 15% by 2020, and to 20% by 2030. The government may also consider reining in emissions from fossil-fuel-based industrial and power plants by announcing more stringent emission standards. Since CCUS is currently the only available near-commercial technology that can abate 90% or more of CO₂ emissions from fossil-fuel-based industrial and power plants, its early demonstration in multiple applications will help its timely deployment. Since the Eleventh Five-Year Plan, 2006-2010, the PRC has included the research of CCUS in its National High-Tech Development Program and in collaboration with development partners has focused on capacity building, policy development, and pilot-testing of various technology components along the CCS technology suite. This also includes the combination with CO₂-enhanced oil recovery (EOR), the most common use of captured CO₂. To date, the government has invested an estimated CNY3 billion in CCUS development, which resulted in the implementation and testing of 14 pilot projects covering currently available carbon capture and various types of CO₂ sequestration technologies, including CO₂-EOR. In a joint effort, ADB and NDRC developed the Road Map for CCS Demonstration and Deployment in the PRC, which was launched at a side-event of the Conference of the Parties (COP21) Climate Summit in 2015 by the ADB President and the PRC's special envoy on climate change. The road map combines a long-term strategy with clear short-term actions to kick-start CCUS demonstration within the Thirteenth Five-Year Plan (2016-2020) period. To promote the long-term deployment of CCUS, the road map calls for the establishment of 5-10 early-stage demonstration projects in the coal-chemical industry and of 1-3 projects in the electricity sector during the 13th plan period. However, at present, significant barriers to large-scale demonstration exist because several ingredients are lacking: (i) a clear policy framework; (ii) commercial viability in the absence of fiscal support policies, a sufficiently high carbon price, and dedicated funding; (iii) a financial support program for cost-intensive pre-investment analyses and activities; (iv) environmental management standards, post-closure stewardship regulations, and a clearly defined approval process for projects; (v) a dedicated institution to facilitate CCUS demonstration; (vi) experience in negotiating and signing CO₂ offtake agreements to facilitate the commercial cooperation between emitting plants, and oil and gas companies; and (vii) certainty on storage potential and feasibility of CO₂-EOR, which requires more detailed and cost-intensive storage site assessment. To remove these barriers and to help the first CCUS projects proceed to investment stage, this cluster TA will develop the capacity for key analytical work and support feasibility assessments of potential large-scale demonstration projects. NDRC has already determined an initial TA cluster subproject, and this TA will anchor its work around it. Before 2020, it may be supplemented by further subprojects.

Impact Innovative climate change mitigation technology of CCUS successfully demonstrated for further deployment in the PRC

Project Outcome

Description of Outcome Implementation of at least one large-scale demonstration CCUS project enabled

Progress Toward Outcome

Implementation Progress

Description of Project Outputs Enabling environment for CCUS demonstration strengthened
Capacity of CCUS project developers strengthened
Feasibility assessments completed for large-scale CCUS projects

Status of Implementation Progress (Outputs, Activities, and Issues)

Geographical Location Nation-wide, Shaanxi

Summary of Environmental and Social Aspects

Environmental Aspects

Involuntary Resettlement

Indigenous Peoples

Stakeholder Communication, Participation, and Consultation

During Project Design

During Project Implementation

Business Opportunities

Consulting Services All national and international consultants will be engaged on output-based contracts. Since CCUS is a nascent industry and extends from power to oil and gas, it is often extremely difficult to find consulting firms that can provide the full range of required expertise. Therefore, consultants for TA subprojects will be engaged using the individual consultant selection method in accordance with the ADB Procurement Policy (2017, as amended from time to time) and the associated project administration instructions and/or staff instructions. ADB will (i) engage TA consultants and review their reports; (ii) ease the exchange of information and dialogue with executing and implementing agencies; and (iii) assist tripartite meetings and TA workshops. ADB will also engage a project manager who will be responsible for overall TA cluster administration and management from ADB headquarters. In addition, two project managers will be recruited under each subproject to (i) track and promote TA subproject implementation; (ii) coordinate the work of individual TA subprojects; (iii) facilitate the exchange of information, dialogue, and discussions between executing agency, implementation agency, consultants, and stakeholders; and (iv) assist the day-to-day management of the TA cluster.

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Responsible ADB Department	East Asia Department
Responsible ADB Division	Energy Division, EARD
Executing Agencies	<i>National Development and Reform Commission No. 38 South Yuetan St. Beijing 100824 China</i>

Timetable

Concept Clearance	02 Dec 2016
Fact Finding	-
MRM	-
Approval	17 Oct 2017
Last Review Mission	-
Last PDS Update	23 Oct 2017

TA 0025-PRC

Financing Plan/TA Utilization						Cumulative Disbursements		
ADB	Cofinancing	Counterpart				Total	Date	Amount
		Gov	Beneficiaries	Project Sponsor	Others			
0.00	5,500,000.00	0.00	0.00	0.00	0.00	5,500,000.00	-	0.00

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