

## PROJECT PREPARATORY TECHNICAL ASSISTANCE

### A. Justification

1. A project preparatory technical assistance (PPTA) is required to finalize due diligence on technical and safeguard aspects of the project and to provide procurement-related support to the executing agency. A feasibility study for the pilot was prepared under TA 8407-INO: Planning a Pilot Carbon Capture and Storage Activity, which includes a detailed technical analysis and site suitability assessment, cost estimates and financial analysis, and a risk analysis. A draft initial environmental examination was also prepared in conjunction with the development of the feasibility study. Additional safeguards, procurement, and technical due diligence is being supported under TA 8714-REG: Promoting Carbon Capture and Storage in the People's Republic of China and Indonesia and a direct charge facility provided by the Carbon Capture and Storage Fund.

2. With existing resources, the Asian Development Bank (ADB) is engaging several experts to initiate the due diligence process. An international Carbon Capture and Storage (CCS) expert (2 person-months [PM]) is being hired to conduct technical due diligence and provide inputs for environmental and social safeguard due diligence. A social safeguards team (national, 3PM; international 2PM) will undertake social safeguards due diligence. And an environmental safeguards team (one national, 1.5 PM; one international 3 PM) will review the initial environmental examination, visit the site, and gather inputs from the CCS expert to update the environmental safeguards due diligence and associated documentation. As these resources are expected to be insufficient to finalize the due diligence (particularly technical, environmental, and procurement), this PPTA is sought to complete the necessary project due diligence and enhance project readiness.

### B. Major Outputs and Activities

3. The PPTA outputs are a fully prepared grant and a successfully completed bidding process for the carbon capture and storage plant. This will include final technical assessments of the proposed carbon capture and storage plant, completed safeguards due diligence, industry outreach on the planned project, invitation for bidding, bid evaluation reports, and successful contract negotiations.

4. The major outputs and activities are summarized in Table A3.1.

**Table A3.1: Summary of Major Outputs and Activities**

<b>Major Activities</b>	<b>Expected Completion Date</b>	<b>Major Outputs</b>	<b>Expected Completion Date</b>
Fielding of consultants	November 2016	Inception report	December 2016
Project documents complete	January 2017	Final due diligence reports	January 2017
Issuance of bid documents	February 2017	Final bidding documents	February 2017
Bid evaluation	May 2017	Bid evaluation reports	May 2017
Contract award	June 2017	Contract negotiations summary	June 2017

Source: Asian Development Bank Staff Estimates

### C. Cost Estimate and Proposed Financing Arrangement

5. The technical assistance (TA) is estimated to cost \$550,000 equivalent, of which \$500,000 will be financed on a grant basis by the Carbon Capture and Storage Fund<sup>1</sup> under the Clean Energy Financing Partnership Facility and administered by ADB. The government will provide support in the form counterpart staff, provision of office space, and other in-kind contributions. The detailed cost estimate is presented in Table A3.2.

**Table A3.2: Cost Estimates and Financing Plan**  
(\$'000)

Item	Total Cost
<b>Carbon Capture and Storage Fund<sup>a</sup> under the Clean Energy Financing Partnership Facility</b>	
1. Consultants	
a. Remuneration and per diem	
i. International consultants (9 person-months)	245.0
ii. National consultants (3 person-months)	20.0
b. International and local travel	67.0
c. Reports and communications	0.2
2. Workshops	10.0
3. Surveys	0.8
4. Miscellaneous administration and support costs <sup>b</sup>	110.0
5. Contingencies	47.0
<b>Total</b>	<b>500.0<sup>c</sup></b>

<sup>a</sup> Administered by the Asian Development Bank. Financing partners: Global Carbon Capture and Storage Institute and the Government of the United Kingdom.

<sup>b</sup> The miscellaneous administration and support costs include (i) resource contracts to hire specialized expertise (e.g., chemical engineers, geophysical engineers, etc.) for very short-term work (5-10 days) through resource contracts; (ii) travel by ADB project team members to international energy events as resource persons to present analyses and findings obtained from the TA; and (iii) translation and interpretation expenses.

<sup>c</sup> The technical assistance (TA) is estimated to cost \$550,000, of which contributions from Carbon Capture and Storage Fund are presented in the table above. The government will provide counterpart support in the form of counterpart staff, office and housing accommodation, office supplies, secretarial assistance, and other in-kind contributions. The value of government contribution is estimated to account for 9% of the total TA cost.

Source: Asian Development Bank Staff Estimates

### D. Consulting Services

6. ADB will engage five (5) individual consultants following *Guidelines on the Use of Consultants* (2013, as amended from time to time) for a total of 12 PM comprising 9 PM of international and 3 PM of national (Table A3.3).<sup>2</sup> The proceeds of the TA will be disbursed in line with ADB's *Technical Assistance Disbursement Handbook* (May 2010, as amended from time to time). Lump-sum payments and output-based contracts will be considered for consulting services under the TA.

<sup>1</sup> Financing partners: Global Carbon Capture and Storage Institute and the Government of the United Kingdom.

<sup>2</sup> Individual consultants are being sought due to carbon capture and storage being new in Indonesia, and this will allow for hiring of recognized experts in the field, who might not be available through a firm.

**Table A3.3: Summary of Consulting Services Requirement**

<b>Positions</b>	<b>Person-Months Required</b>
<b>International</b>	
Carbon Capture and Storage Expert	2
Environmental Safeguards Specialist	2
Procurement Specialist	3
Oil and Gas Engineer	2
<b>National</b>	
Procurement Specialist	3

Source: Asian Development Bank staff estimates

7. The outline terms of reference for the PPTA consultants are described in paras. 8 to 11, which builds needs identified through the previous CCS small-scale TA 7146-PRC: Capacity Strengthening in Planning and Implementation of Integrated Gasification Combined Cycle Plant.

8. **Carbon capture and storage expert** (international, 2 PM). The expert will have experience and qualifications related to oil and gas extraction and carbon capture and storage to include at least 5 years of working experience in the field of carbon capture and storage, preferably in the design, construction, operation, and maintenance of CCS facilities. The expert will review all project-related documents and conduct a risk assessment for the pilot that considers major technical, cost overrun, and delay risks. The expert will provide input to mitigation plans for environmental and social safeguard risks and will guide the development of the technical specifications for the bid documents. The expert will conduct industry outreach including pre-bid workshops to encourage interest and competition in the procurement process and will participate in the technical evaluation of bids and provide inputs for subsequent negotiations.

9. **Environmental safeguards specialist** (international, 2 PM). The environmental specialist will have expertise in environmental assessment of carbon capture, liquefaction, transport, and storage or large-scale oil and gas operations. The knowledge and practical experience with ADB environmental safeguards will be strongly preferred. The specialist will review the project feasibility study and draft initial environmental examination (IEE) and visit the project site. In close coordination with the carbon capture and storage expert, the specialist will assess the adequacy of the IEE, proposed mitigation measures, and monitoring requirements and suggest enhancements, as needed, to ensure conformity with Safeguard Policy Statement, 2009, requirements and to ensure that appropriate scope and necessary budget are adequately captured in the bidding documents.

10. **Procurement specialists** (international, 3 PM; national, 3 PM). The procurement specialists will have at least 5 years of relevant working experience in procurement and will be familiar with both ADB and Indonesian procurement requirements. The specialists will take the lead in finalizing the procurement plan, developing the bidding documents, undertaking the bid evaluations, and supporting contract negotiations. The specialists will ensure conformity with ADB's Procurement Guidelines and provide related compliance reports.

11. **Oil and gas engineer** (international, 2 PM). The engineer should have more than 5 years of experience in large-scale oil and gas operations, preferably in the design, construction, operation, and maintenance of natural gas exploration, extraction, processing, storage, and transport. Familiarity with carbon capture and storage is a strong asset. The engineer will lead the development of the technical specifications of the bidding documents, the technical bid

evaluation, and technical inputs for negotiations; this will all be undertaken in close coordination with the carbon capture and storage expert and the procurement specialists.

## E. Implementation Arrangements

12. The Directorate General of Oil and Gas, Ministry of Energy and Mineral Resources will be the executing agency for the TA and will provide counterpart support in the form of counterpart staff, office space, domestic transportation, and other in-kind contributions. The TA will be managed and administered by ADB through the Energy Division of the Southeast Asia Energy Department.

13. The TA will be implemented over 12 months from September 2016 to September 2017, inclusive of 3 months for financial closing of the TA account. The proposed TA processing and implementation schedule is listed in Table A3.4. Advance actions will be taken to enable consultant mobilization soon after concept paper approval.

**Table A3.4: Technical Assistance Processing and Implementation Schedule**

<b>Major Milestones</b>	<b>Expected Completion Date</b>
TA approval	September 2016
Consultant Recruitment	November 2016
Project due diligence completed	December 2016
Procurement process complete	June 2017
TA financial closure	September 2017

Source: Asian Development Bank staff estimates