



Technical Assistance Subproject Report

Project Number: 52112-004
Knowledge and Support Technical Assistance (KSTA)
October 2019

Regional Cooperation on Increasing Cross-Border Energy Trading within the Central Asian Power System Subproject 3: Expansion of Central Asian Power System Membership

This document is being disclosed to the public in accordance with ADB's Access to Information Policy.

Asian Development Bank

ABBREVIATIONS

ADB	–	Asian Development Bank
CAPS	–	Central Asian power system
CAREC	–	Central Asia Regional Economic Cooperation
CDC	–	coordinating dispatch center
EDM	–	energy data management
HLT	–	high-level technology
kV	–	kilovolt
kWh	–	kilowatt-hour
TA	–	technical assistance

NOTE

In this report, "\$" refers to United States dollars.

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

CONTENTS

	Page
CONTENTS	
KNOWLEDGE AND SUPPORT TECHNICAL ASSISTANCE AT A GLANCE	
I. THE TECHNICAL ASSISTANCE SUBPROJECT	1
A. Overall Progress of the Technical Assistance Cluster	1
B. Subproject Outcome	1
C. Subproject Outputs, Methods, and Activities	1
D. Subproject Cost and Financing	2
E. Subproject Implementation Arrangements	2
APPENDIXES	
1. Subproject Design and Monitoring Framework	5
2. Subproject Cost Estimates and Financing Plan	7
3. List of Linked Documents	8

KNOWLEDGE AND SUPPORT TECHNICAL ASSISTANCE AT A GLANCE

1. Basic Data		Project Number: 52112-004
Project Name	Regional Cooperation on Increasing Cross Border Energy Trading within the Central Asian Power System – Expansion of Membership in Central Asian Power System (Subproject 3)	Department/Division CWRD/CWEN
Nature of Activity	Policy Advice	Executing Agency Asian Development Bank
Modality	Subproject	
Country	REG (AFG, TKM)	
2. Sector	Subsector(s)	ADB Financing (\$ million)
✓ Energy	Energy sector development and institutional reform	0.50
	Total	0.50
3. Operational Priorities		Climate Change Information
✓ Addressing remaining poverty and remaining inequalities		Climate Change impact on the Project Low
✓ Strengthening governance and institutional capacity		
✓ Fostering regional cooperation and integration		
Sustainable Development Goals		Gender Equity and Mainstreaming
SDG 1.a		No gender elements (NGE) ✓
SDG 7.a		
SDG 10.3		
		Poverty Targeting
		Geographic Targeting ✓
4. Risk Categorization	Low	
5. Safeguard Categorization	Safeguard Policy Statement does not apply	
6. Financing		
Modality and Sources		Amount (\$ million)
ADB		0.50
Knowledge and Support technical assistance: Technical Assistance Special Fund		0.50
Cofinancing		0.00
None		0.00
Counterpart		0.00
None		0.00
Total		0.50
Currency of ADB Financing: USD		

Source: Asian Development Bank

I. THE TECHNICAL ASSISTANCE SUBPROJECT

A. Overall Progress of the Technical Assistance Cluster

1. The cluster knowledge sharing technical assistance was approved on 29 November 2018. The first subproject “Modernization of Coordinating Dispatch Center Energiya” was approved on 28 January 2019, while the second subproject “Provision of Solutions to Bottlenecks to the Regional Power Trade” was approved on 28 February 2019. Recruitments of the key consulting firms was concluded for both subprojects 1 and 2 on 11 July 2019 and 14 August 2019, respectively. Inception mission for subproject 1 was fielded on 27 to 29 August 2019 and scheduled in October 2019 for subproject 2.

B. Subproject Outcome

2. The technical assistance (TA) will have the following outcome: regional energy trade and cooperation enhanced. The identified infrastructure projects, which are necessary for connection of Afghanistan, Turkmenistan and other potential new electricity markets to Central Asian Power System (CAPS), will be submitted for endorsement of the CAPS governments at Central Asia United Power System Council Meeting. CAPS countries include Kazakhstan, Kyrgyz Republic, Tajikistan and Uzbekistan.

3. The implementation of these projects will contribute toward cross-border clean energy trade. Specifically, the subproject 3 outcome will contribute to the cluster TA outcome indicators (a) at least 11,000 million kilowatt-hours trade within CAPS annually (2017 baseline: 3,109 million kilowatt-hours) and (b) at least additional 5,587,560 tCO₂ reduction in emission achieved (2017 baseline: 0).

C. Subproject Outputs, Methods, and Activities

4. The subproject 3 output will directly contribute to the cluster TA output 3 “Membership in CAPS expanded”. Current CAPS membership is envisaged to be expanded from Kazakhstan, Kyrgyz Republic, Tajikistan and Uzbekistan to include Afghanistan and Turkmenistan, who have expressed wish to join CAPS. Afghanistan wishes to join CAPS in order to increase reliability of its domestic electricity grid while at the same time gaining access to more energy sources. Turkmenistan, who is the former CAPS member, wishes to join CAPS in order to diversify its electricity trade from Iran.

5. **Output 1: List of Infrastructure Investments for CAPS Expansion Identified.** This output will be delivered through examination of the Afghan and Turkmen national grids to identify the necessary upgrades, if any, required in order to safely connect them to CAPS.

6. **Output 2: Alternate Energy Markets Identified.** This output will be delivered through examination of the neighboring countries to CAPS as well as Afghanistan and Turkmenistan to identify potential markets for export and input of power from and to CAPS member countries. Neighboring countries include Caucuses, Iran, Pakistan, People Republic of China, Russian Federation.

7. **Methods and Activities.** The consultant firm recruited for the implementation of subproject 2¹ “Provision of Solutions to the Bottlenecks to the Regional Power Trade” will analyze the Afghan and Turkmen power grids to determine the required works, if any, for their connections into CAPS in parallel mode. The study will be based on the work already performed during implementation of CAREC: Power Sector Regional Master Plan² and considering recently completed relevant investments in CAPS countries (transmission lines and power stations). Unlike the previous study, the connection with Afghanistan shall be considered not only at 220kV level but also on the 500kV voltage level.

8. The same consultant will also prepare market analysis for prospective power trade (export and import) of CAPS countries, Afghanistan and Turkmenistan with the neighboring countries. The study will account for the updated regional power sector master plan together with the power needs analysis of the prospective new market destinations. These will include regional initiatives such as Russian Federation-Kazakhstan-Central Asia-South Asia energy trade or the People Republic of China’s One Belt, One Road Initiative. The study will also identify the necessary infrastructure (new and upgrade), preliminary estimates of the investment costs and benefits, identifying implementing agencies for these projects, recommendations on needed policy and regulatory changes if any; and, financing options.

9. ADB intends to facilitate, as an honest broker, the endorsement of the identified investment projects by the participating governments for implementation through a series of working- and high-level meetings, which will include meetings under CAREC program’s Energy Sector Coordination Committee (ESCC) as well as Central Asia United Power System Council³ (CAUPSC) meetings.

D. Subproject Cost and Financing

10. The TA subproject is estimated to cost \$500,000 which will be financed on a grant basis by ADB’s Technical Assistance Special Fund (TASF-6). The key expenditure items are listed in Appendix 2.

11. The government will provide counterpart support in form of staff, office space and supplies, secretarial assistance and other in-kind contributions.

E. Subproject Implementation Arrangements

12. ADB will be the executing agency with the Energy Division of ADB’s Central and West Asia Department as a focal point in close coordination with ADB resident missions in Afghanistan and Turkmenistan. An energy sector coordinating committee (ESCC) subcommittee, which will

¹ ADB. 2019. Technical Assistance Subproject Report. [Regional Cooperation on Increasing Cross-Border Energy Trading within the Central Asian Power System Subproject 2: Provision of Solutions to Bottlenecks to the Regional Power Trade](#). Manila.

² ADB. 2010. Technical Assistance Report: [Central Asia Regional Economic Cooperation: Power Sector Regional Master Plan](#). Manila.

³ Following the collapse of the Soviet Union, United Dispatch Administration became nongovernment organization in 1993 and was renamed to Coordinating Dispatch Center (CDC). The governance was assigned to the Central Asia United Power System Council (CAUPS), comprising the heads of the national power systems. The council was responsible for the administration and coordination of the parallel operations of CAPS. In 2004, Kazakhstan, Tajikistan, the Kyrgyz Republic, and Uzbekistan concluded an intergovernmental agreement on the coordination of electricity grids of Central Asia. CDC was given the status of international organization working under the guidance of the CAUPS. Turkmenistan withdrew from CAPS in 2003 and switched to parallel operations with Iran. The signatories provide the financing for CDC.

be created to oversee subproject 2 will also direct, assist and supervise the TA consultants working on the expansion of CAPS membership. The subcommittee and ADB will meet with the consultants as required during project implementation but not fewer than 3 times to review inception, interim, and final reports. In each country, the consultants will work primarily with utilities and government bodies responsible for planning who will be the implementing agencies. For subproject 3, the implementing agencies will be Da Afghanistan Breshna Sherkat (DABS) and Turkmenenergo.

13. The TA will be administered and monitored by ADB as part of ongoing CAREC program.
14. The subcommittee will work closely with the CAUPSC. High-level meetings will be organized periodically during the implementation of the subproject to update and seek guidance from ESCC and CAUPSC.
15. The implementation arrangements are summarized in the table.

Subproject Implementation Arrangements

Aspects	Arrangements		
Indicative implementation period	October 2019–December 2021		
Executing agency	ADB (Focal point: Energy Division, Central and West Asia Department)		
Implementing agencies	CDC Energiya, DABS and Turkmenenergo		
Consultants	To be selected and engaged by {ADB} {executing agency}		
	Firm: Optimization of Central Asia power system with CAPS Expansion and New Markets Exploration	QCBS (90:10)*	\$400,000.00
	Individual: individual selection	National TA coordinator (6 person-months)	\$16,000.00
	Individual: individual selection	International power systems expert (2 person-months)	\$40,000.00
Disbursement	The TA resources will be disbursed following ADB's <i>Technical Assistance Disbursement Handbook</i> (2010, as amended from time to time).		

* Initially it was envisaged that subprojects 2 and 3 will be launched almost simultaneously. Due to funding issues, the process was separated. Nevertheless, the scope of this consulting package was advertised as an option together with the consulting assignment for subproject 2 "of the c-KSTA. The subproject 2 consulting contract was awarded in August 2019 – and its scope will be adjusted as per para. 16 below upon approval of subproject 3.

ADB = Asian Development Bank, CDC = Coordinating Dispatch Center, DABS = Da Afghanistan Breshna Sherkat, EA = executing agency, IAs = implementing agencies, QCBS = quality- and cost-based selection, TA = technical assistance. Source: Asian Development Bank

16. **Consulting services.** The firm, which will be recruited from subproject 2 for optimization of Central Asia power system, will continue to work on assessment of Afghan and Turkmen power grid and exploration of the alternate energy markets for CAPS through call-off. The TOR of the firm from subproject 2 already contains tasks and the level of effort related to subproject 3. The international and national consultants (International power system expert and National TA coordinator) from subproject 2 will be extended through a variation order to continue to provide technical expertise and logistical support to ADB and the implementing agencies.

17. The consultants will be engaged in accordance with the ADB Procurement Policy (2017, as amended from time to time) and the associated project administration instructions and/or staff instructions.

SUBPROJECT DESIGN AND MONITORING FRAMEWORK

Impact{s} the TA is Aligned with: CAREC 2030 Program Results Framework¹			
Countries' emissions reductions target achieved, ^a Regional cooperation framework accomplished, ^b Energy security in selected CAREC countries enhanced ^b			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
Outcome Regional energy trade and cooperation enhanced	By 2021 Participating governments endorsed the identified investment projects at Central Asia United Power System Council Meeting (2017 baseline: 0)	ESCC meeting and CAREC Ministerial Conference Proceedings	Change in the geopolitical climate in the region Individual countries may view energy security risk as overriding regional benefits
Output 1. List of Infrastructure Investments for CAPS Expansion identified 2. Alternate energy markets identified	By 2021 1a. Grid readiness assessment for Afghanistan and Turkmenistan completed (2018 baseline: 0) 1b. Report containing a list of key necessary infrastructure investment for connection to CAPS finalized (2018 baseline: 0) 2a. Report on alternate energy market and list of investment produced/finalized (2018 baseline: 0)	1a-b, 2a. Annual CAREC Energy Progress Report	Unavailability of information on the electricity grids Ministry administrative changes leads to limited access on information on electricity grid
Key Activities with Milestones 1. List of Infrastructure Investments for CAPS Expansion Identified 1.1 Expand subproject-2 consultant scope (Q2 2019) 1.2 Assess grid readiness of Afghanistan and Turkmenistan for CAPS connection (Q4 2019) 1.3 Identify the list of key necessary infrastructure investments, which are required to connect Afghanistan and Turkmenistan to CAPS (Q2 2020) 1.4 Organize high- and working-level meetings (Q2 2019–Q1 2021) 2. Alternate Energy Markets Identified 2.1 Prepare market analysis for prospective power trade (Q2 2019) 2.2 Identify the necessary infrastructure investments to connect CAPS to alternate energy markets (Q4 2019) 2.3 Organize high and working-level meetings (Q2 2019-Q1 2021)			

¹ ADB. 2017. [CAREC 2030: Connecting the Region for Shared and Sustainable Development](#). Manila.

<p>Inputs</p> <p>Asian Development Bank: Technical Assistance Special Fund (TASF-6): \$500,000</p> <p>Note: The government will provide counterpart support in the form of staff, office space and supplies, secretarial assistance, and other in-kind contributions.</p>
<p>Assumptions for Partner Financing</p> <p>Not Applicable</p>

CAREC = Central Asia Regional Economic Cooperation, ESCC = Energy Sector Coordinating Committee, Q = quarter, RFP = request for proposal, TA = technical assistance.

^a United Nations Framework Convention on Climate Change. 2016. Paris Agreement–Status of Ratification. Paris.

^b CAREC. 2015. [Strategy and Work Plan \(2016–2020\) for Regional Cooperation in the Energy Sector of CAREC Countries](#). Ulaanbaatar.

Source: Asian Development Bank.

SUBPROJECT COST ESTIMATES AND FINANCING PLAN
(\$'000)

Item	Amount
A. Asian Development Bank ^a	
1. Consultants	
a. Remuneration and per diem	
i. International consultants	376.0
ii. National consultants	51.0
b. Out-of-pocket expenditures	
i. International and local travel	24.0
ii. Training, seminars, and conferences	4.0
iii. Reports and communications	1.0
2. Training, seminars, workshops, forum, and conferences	
a. Facilitators	4.0
b. Meeting Venues	10.0
3. Contingencies	30.0
Subtotal (A)	500.0
Total	500.0

Note: The technical assistance (TA) is estimated to cost \$500,000 which will be financed on a grant basis by ADB's Technical Assistance Special Fund (TASF-6). The government will provide counterpart support in the form of counterpart staff, office and office supplies, secretarial assistance, domestic transportation, and other in-kind contributions.

Source: Asian Development Bank estimates.

LIST OF LINKED DOCUMENTS

<http://www.adb.org/Documents/LinkedDocs/?id=52112-004-TARreport>

1. Terms of Reference for Consultants (refer to page 7 of approved subproject 2¹)

¹ ADB. 2019. Technical Assistance Subproject Report. [Regional Cooperation on Increasing Cross-Border Energy Trading within the Central Asian Power System Subproject 2: Provision of Solutions to Bottlenecks to the Regional Power Trade](#). Manila.