

**PROJECT INFORMATION DOCUMENT (PID)
APPRAISAL STAGE**

Report No.: PIDA2581

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Project Name	Central Asia South Asia Electricity Transmission and Trade Project (CASA-1000) (P145054)
Region	SOUTH ASIA
Country	South Asia
Sector(s)	Transmission and Distribution of Electricity (100%)
Theme(s)	Regional integration (60%), Climate change (40%)
Lending Instrument	Investment Project Financing
Project ID	P145054
Borrower(s)	Islamic Republic of Afghanistan, Republic of Tajikistan, Islamic Republic of Pakistan, Kyrgyz Republic
Implementing Agency	Da Afghanistan Breshna Sherkat, National Electric Grid of Kyrgyzstan, Barki Tajik, National Transmission and Despatch Company (NTDC)
Environmental Category	A-Full Assessment
Date PID Prepared/Updated	10-Mar-2014
Date PID Approved/Disclosed	11-Mar-2014
Estimated Date of Appraisal Completion	31-Jan-2014
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Decision	

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I. Project Context

Country Context

Regional and Country Context

1. The Central Asia-South Asia Electricity Transmission and Trade Project (CASA-1000) aims to facilitate electricity trade between hydropower surplus countries in Central Asia and electricity deficient countries in South Asia by putting in place the commercial and institutional arrangements and the transmission infrastructure required for this trade. The four countries participating in the project – Afghanistan, Kyrgyz Republic, Pakistan and Tajikistan – are of considerable geostrategic importance by virtue of their location at the crossroads of China, India, Russia and the Middle East. Sustained efforts to promote institutional development and socio-economic prosperity in the CASA-1000 countries are therefore a very high priority, not only for the countries themselves, but also for the stability of the Central and South Asia regions more broadly. The CASA-1000 countries vary significantly in terms of population numbers, economic size and development trajectories, but also share several key characteristics and have complementary

development needs and goals, especially in the energy sector, which form the basis for the CASA-1000 project described in detail later in this document.

2. With per capita GNIs under \$1,000, Kyrgyz Republic and Tajikistan are among the poorest countries in Central Asia. Both have relatively small populations (Kyrgyz: 5.6 million and Tajikistan: 8 million), are landlocked, prone to exogenous geographic and economic shocks, and have suffered from significant social strife. Despite inheriting well-developed infrastructure, both countries have suffered significant declines in living standards since the break-up of the Soviet Union as a result of disruption in established trade and broader relations with other Soviet Republics. Poverty levels are currently extremely high – 38 percent of the Kyrgyz population and 46.7 percent of the Tajik people live below their respective national poverty lines and both countries have launched economic stabilization and structural reform initiatives to promote growth, in part with support from the International Monetary Fund (IMF), the World Bank and other International Financial Institutions (IFIs) and bilateral partners. Key elements of the structural agenda in the two countries concern improving the business climate to attract new private investment as well as diversifying economic production and exports, including electricity (given the countries' abundant hydropower, especially during summer).

3. The South Asian participants in the CASA-1000 project, Afghanistan and Pakistan, have much larger populations – about 30 million and 180 million respectively – and substantially larger economies. With a GNI per capita of US\$570, Afghanistan is the lowest income country in South Asia and emerging from over three decades of conflict. It remains an extremely fragile state with weak state and civil society institutions and faces enormous development challenges, including high levels of poverty (36 percent) and unemployment. Despite the ongoing conflict and insecurity, there have been some significant advances in institutional strengthening and rapid economic growth of 9 percent per year in 2000-2010, driven in large measure by huge foreign aid flows of close to US\$16 billion per annum. With foreign aid set to decline from 2014 with the withdrawal of international forces and the labor force expanding by about 300,000 per year, the Afghan economy urgently needs to find ways to sustainably accelerate broad-based growth in the medium term - implying, inter alia, adequate and stable electricity supply to meet expanding demand. Even under reasonably optimistic scenarios, growth in Afghanistan is projected to fall from a 10-year average of over 9 percent to between 5 and 6 percent over 2011–18. Additionally, unemployment, already at 8 percent in 2009–10, is projected to rise further, with potentially destabilizing effects. In this context, Afghanistan is actively seeking ways to accelerate growth through increased private and public investment, with a particular focus on addressing the country's severe infrastructure bottlenecks.

4. Of the four countries participating in CASA-1000, Pakistan is by far the largest and possesses important strategic endowments and huge development potential. Realization of this potential has, however, been severely limited by the country's significant economic, governance, and security challenges. Poverty remains as a result of the continued security problems, two major floods, unresolved structural issues and overly expansionary fiscal policies. The goal of absorbing the country's rapidly growing youth labor force – a key element of strategies both to reduce poverty and to maintain reasonable political stability - implies the need for real economic growth of at least 7 percent per annum in the medium- to longer term, nearly double the rates achieved over the past decade. Recent analysis by the IMF and the Bank indicates that the prospects for accelerated growth are not good, unless urgent policy action is taken to: (i) strengthen fiscal management, (ii) reform the energy sector to reduce shortages and curb untargeted subsidies, and (iii) implement financial

policies aimed at reducing inflation and external vulnerabilities and strengthening the financial sector.

Sectoral and institutional Context

Inter-Regional Energy Initiatives

5. Over the past decade or so, various countries in both the South Asia and Central Asia regions have engaged in a broad dialogue to create a regional energy market based largely on the export of gas and electricity from Central Asia to South Asia, in particular to Afghanistan, Pakistan and India. This inter-regional dialogue and the specific projects emerging from it are being supported by a number of multilateral and bilateral partners, notably the Asian Development Bank (ADB), the Islamic Development Bank (IsDB) and the World Bank as well as the Governments of the USA, UK and Australia, among others.

6. In addition to the CASA-1000 project, which is the subject of this document, a number of other important inter-regional gas and electricity projects are being developed at the present time. For example, Turkmenistan is pursuing gas exports to Afghanistan, Pakistan and India (called the “TAPI” project from the initials of each country). TAPI is estimated to cost about US\$10 billion and is being developed with support from the ADB. Turkmenistan, Uzbekistan and Tajikistan have already begun exporting electricity to Afghanistan and are studying ways of expanding the trade to other South Asian markets, especially Pakistan. The mix of thermal-based power from Turkmenistan and Uzbekistan and hydro-based power from Kyrgyz Republic and Tajikistan allows for a good seasonal mix in supply, thereby enabling all countries to benefit. Pakistan is also exploring various additional energy import opportunities, including a natural gas pipeline with Iran and an electricity interconnection with India. For its part, Afghanistan has developed a Power Sector Master Plan, which, inter alia, suggests the option of developing the Afghan grid to export power to Pakistan, after satisfying domestic demand. However, this plan implies the need to sufficiently adapt Afghanistan’s domestic power system before it can cater to significant power trading from neighboring countries.

Genesis of CASA-1000

7. Against the background of the broader Central Asia South Asia dialogue on energy, the Central Asian countries of Kyrgyz Republic and Tajikistan and the South Asian countries of Afghanistan and Pakistan began a series of discussions on the creation of a regional electricity market – the Central Asia South Asia Regional Electricity Market (CASAREM) – to link the Central Asian countries’ surplus electricity resources with the South Asian countries’ unmet demand for electricity, thereby alleviating the persistent shortages that have acted as a brake on growth, jobs and population welfare. In May 2006, a ministerial level meeting was held in Islamabad, Pakistan at which the four countries collectively declared their intention of pursuing electricity trade opportunities. The declaration also left open the possibility that other countries could join the initiative as the trade expands.

8. At a subsequent conference in Dushanbe, Tajikistan in October 2006, the four countries signed a memorandum of understanding in which they committed to pursue the development of the first phase of CASAREM by establishing the necessary transmission and trading infrastructure and systems to enable a trade of roughly 1,300 megawatts (MW) of electricity between Central Asia and South Asia – including 1,000 MW to Pakistan and 300 MW to Afghanistan – terming the project

CASA-1000. In August 2008, the countries entered into a formal inter-governmental agreement to set up an Inter-Governmental Council (IGC) and an associated Secretariat to steer the development of the project. Since then, cooperation between the four countries has intensified. Working closely with international partners, including IFIs and bilateral donors, the IGC has spearheaded the conduct of required analytical work to establish the technical, economic, environmental, social and commercial feasibility of the CASA-1000. The ADB funded the original Feasibility Study for CASA-1000 and the Bank provided support for the update of the Feasibility Study in 2011 and subsequent studies with other development partners. ADB is earmarking resources originally proposed for this project to other regional initiatives developed under the Afghanistan Power System Master Plan that are complementary to CASA-1000. In 2011, the four countries requested the International Finance Corporation (IFC) to actively participate in project structuring and implementation and subsequently in 2012 the four countries each signed a Financial Advisory Services Agreement with IFC to act as lead advisor for the selection of the developer and operator for the project.

9. As already mentioned, the two South Asian countries (and the South Asia region as a whole) face tremendous energy challenges, with about 400 million people still deprived of reliable access to electricity, social unrest related to energy shortages arising nearly every year (especially in the scorching Pakistan summers), and the vast majority of firms pointing to energy shortages as one of the most binding constraints to business operations and expansion. Moreover, rising oil prices and the heavy reliance on fuel oil for power generation in both Afghanistan and Pakistan have placed increased burdens on an energy sector that is already in need of reform. For them, cleaner and cheaper electricity imports from Central Asia will enable improved coverage, reduce shortages over the critical summer period and lessen financial pressures deriving from fuel imports.

10. For their parts, the two Central Asian countries involved in CASA-1000, Kyrgyz Republic and Tajikistan, have abundant hydropower, which is the source of more than 90 percent of domestic energy needs. The natural hydrology driven by snow melts results in heavy water flows during the summer and significantly reduced flows during the winter –leading, in turn, to surplus power in the summer and perennial power shortages in winter. The water released in the summer is used for electricity generation up to the level of domestic demand and export, and the rest is spilled without passing through turbines. Obligations to meet summer water needs for irrigation in downstream countries and limited water storage capacity precludes the generation of adequate hydropower to meet winter energy needs. At the present time, the seasonality of electricity supplies combined with low tariffs and under-maintenance of energy assets causes severe economic disruptions, with negative implications for productivity and population welfare. With support from ADB, European Bank for Reconstruction and Development (EBRD) and other development partners, the countries have committed specific investments for the rehabilitation of several aging hydropower plants (HPPs) and Kyrgyz Republic is embarking on the construction of one new HPP. Export of the countries' relatively low cost, clean surplus summer electricity would help both governments to generate the revenues needed to bolster their respective budgets, which could then help finance fuel resources for winter energy needs, promote energy efficiency programs and undertake other measures to deal more effectively with their winter energy crises in the medium to long term.

11. Given the above context, the CASA-1000 project is seen as a “win-win” proposition by all the four countries involved, with its robust economic viability derived from not needing to set up any new generation capacity in exploiting a currently missed opportunity for regional energy trade. Furthermore, by establishing an “open access” regime, the Project enables other suppliers (for

example in neighboring countries) to avail of unutilized transmission capacity to access electricity markets in the CASA-1000 countries. The project is, therefore, expected to: (i) alleviate summer electricity shortages in Pakistan and Afghanistan and/or reduce their dependence on costly and polluting oil-based generation; (ii) establish an additional, steady source of revenues to Tajikistan and the Kyrgyz Republic; (iii) help strengthen Afghanistan's role as a viable transit country, leveraging a key comparative advantage and enhancing its growth prospects; and (iv) set the stage for expanded energy trade between Central Asia and South Asia.

II. Proposed Development Objectives

The objective of the project is to create the conditions for sustainable electricity trade between the Central Asian countries of Tajikistan and Kyrgyz Republic and the South Asian countries of Afghanistan and Pakistan.

III. Project Description

Component Name

Construction of High Voltage Transmission Infrastructure

Comments (optional)

High Voltage Direct Current Transmission Line and Converter Stations, High Voltage AC Transmission Interconnection between Kyrgyz Republic and Tajikistan and grid reinforcement in Tajikistan

Component Name

Technical Assistance and Project Implementation Support

Comments (optional)

This component will support for project implementation and technical assistance required to the four country-specific Project Implementing Agencies and the IGC Secretariat

Component Name

Community Support Programs

Comments (optional)

Implement programs in the four countries during the construction period to create a supportive environment for project implementation and improve livelihoods of communities living along the corridor

IV. Financing (*in USD Million*)

Total Project Cost:	1170.00	Total Bank Financing:	526.50
Financing Gap:	173.00		
For Loans/Credits/Others			Amount
BORROWER/RECIPIENT			134.50
International Development Association (IDA)			158.25
IDA Grant			368.25
Afghanistan Reconstruction Trust Fund			40.00
US, Govt. of			15.00
Islamic Development Bank			250.00
Bilateral Agencies (unidentified)			31.00

Total	997.00
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V. Implementation

The project will be implemented by the National Transmission Companies in each country, namely:

- a. In Afghanistan – Da Afghanistan Breshna Sherkat (DABS)
- b. In the Kyrgyz Republic – Joint Stock Company National Electric Grid of Kyrgyzstan (NEGK)
- c. In Pakistan – National Transmission and Despatch Company (NTDC)
- d. In Tajikistan – Open Joint Stock Holding Company Barki Tajik (BT)

VI. Safeguard Policies (including public consultation)

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	x	
Natural Habitats OP/BP 4.04	x	
Forests OP/BP 4.36		x
Pest Management OP 4.09		x
Physical Cultural Resources OP/BP 4.11		x
Indigenous Peoples OP/BP 4.10		x
Involuntary Resettlement OP/BP 4.12	x	
Safety of Dams OP/BP 4.37		x
Projects on International Waterways OP/BP 7.50		x
Projects in Disputed Areas OP/BP 7.60		x

Comments (optional)

VII. Contact point

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