



Design and Monitoring Framework

Project Number: 42094
November 2008

Proposed Multitranche Financing Facility and
Administration of Grant from the Japan Fund for
Poverty Reduction
Islamic Republic of Afghanistan: Energy Sector
Development Investment Program

Asian Development Bank

DESIGN AND MONITORING FRAMEWORK (MFF)

Design Summary	Performance Targets and/or Indicators	Data Sources and/or Monitoring Mechanisms	Assumptions and Risks
<p>Impact</p> <p>Better and cost-effective power supply to all customers</p>	<p>Consumption per capita per year increased from 21 kilowatt hours (kWh) to 30 kWh by 2017</p> <p>Self sustainability of Afghan Electricity Corporation (DABS)</p> <p>Cost Recovery Tariffs</p>	<p>National and regional statistics</p> <p>DABS audit</p> <p>Review of tariff methodology</p> <p>Review missions</p>	<p>Assumptions</p> <p>Other energy sector projects are successfully implemented.</p> <p>DABS gains greater institutional capacity and independence.</p> <p>The Government remains committed to energy sector reforms on policy, regulation, institutions, and tariffs.</p> <p>Risks</p> <p>Political stability and security are not achieved.</p> <p>DABS operations and governance are not modernized.</p> <p>Collection levels are inadequate.</p>
<p>Outcome</p> <p>Better power supply in northern and eastern Afghanistan, Kabul, and areas south of Kabul.</p> <p>Greater institutional capacity within DABS, i.e., management information system (MIS), metering, billing, collection, operation and maintenance (O&M) capabilities, and project management.</p>	<p>Power system capable to supply 1,450 megawatts (MW) of connected load by 2017 from North East Power System (NEPS)</p> <p>Reduction of network losses from 50% to 30% by 2017</p> <p>Program management office (PMO) staffed solely by DABS personnel by 2015.</p> <p>DABS performs O&M functions independently by 2015</p>	<p>Ministry of Energy and Water (MEW) reports and national statistics</p> <p>Project performance and monitoring systems</p> <p>Surveys of consumers.</p>	<p>Assumption</p> <p>Power networks are synchronized with neighboring countries, increasing available power.</p> <p>Risk</p> <p>Neighboring power exporting countries do not have the capacity to export.</p>
<p>Outputs (Physical)</p> <p>Increase in customers in NEPS area through (i) Kunduz–Taloqan transmission line, (ii) Kunduz and Baghlan distribution, (iii) replication of Pul-e-Khumri–Chimtala transmission line, (iv) replication of Chimtala Substation, and (v) Kabul</p>	<p>Transmission network increased by 770 kilometers in NEPS by 2015</p> <p>Grid supply available to an additional six cities by 2015 (Taloqan, Kunduz, Baghlan, Logar, Gardez, Kabul)</p> <p>14 MW of additional</p>	<p>DABS connection records</p> <p>Quarterly progress reports prepared by implementation consultants</p> <p>Project review missions</p> <p>Project performance reports</p> <p>Taking over certificates for implementation contracts</p>	<p>Assumptions</p> <p>Procurement and construction are timely.</p> <p>Cost escalation is within projected level.</p> <p>Risks</p> <p>Counterparty funds are lacking.</p> <p>The executing agency's</p>

Design Summary	Performance Targets and/or Indicators	Data Sources and/or Monitoring Mechanisms	Assumptions and Risks
<p>South extension</p> <p>Increase in hydropower capacity by (i) Baharak small hydro, (ii) Mini Hydros [Japan Fund for Poverty Reduction (JFPR)], and (iii) Lower Kokcha hydropower facility.</p> <p>Rehabilitated Sheberghan gas wells</p>	<p>hydropower generation by 2017</p> <p>3,500 terajoules (TJ) of additional gas supply from Sheberghan Gas fields by 2013.</p>	<p>prepared by implementation consultants</p> <p>Project completion report</p>	<p>(EA) capacity is limited.</p> <p>Security at the project site is inadequate.</p>
<p>Outputs (Nonphysical)</p> <p>Institutional support for DABS: (i) management information system (MIS), (ii) metering and billing, (iii) O&M of 220 kV NEPS, and (iv) project management</p> <p>Due diligence for future tranches and projects</p>	<p>MIS: MIS used in DABS by 2014.</p> <p>Metering and Billing: commercial losses reduced from 40% to 20% by 2017.</p> <p>O&M: technical losses reduced from 30% to 15% by 2015</p> <p>Project management: DABS manages projects without consultant support by 2013</p> <p>Future projects identified and prepared by DABS staff</p>	<p>Quarterly progress reports prepared by consultants</p> <p>DABS financial statements</p> <p>Project review missions</p> <p>Project performance reports</p>	<p>Assumptions</p> <p>Consultants are mobilized in a timely manner.</p> <p>The EA and the Government cooperate.</p> <p>Risk</p> <p>Capable consultants are recruited.</p>
<p>Major Activities with Milestones</p> <p>[Tranche 1]</p> <ol style="list-style-type: none"> 1.1 Management consultants for PMO support recruited and mobilized (Q2 2009). 1.2 Implementation consultants for tranche 1 projects recruited and mobilized (Q2 2009). 1.3 Tranche 2 project preparation consultants recruited and mobilized (Q2 2009). 1.4 Tranche 2 projects prepared (Q4 2009). 1.5 Bidding documents begin to be issued (Q2 2010). 1.6 220 kV NEPS O&M management contract concluded; request for proposals prepared separately (Q2 2010). 1.7 Contractors begin to be mobilized (Q4 2010). 1.8 Kunduz and Baghlan distribution networks commissioned (Q2 2012). 1.9 Badakhshan and Bamyan mini hydropower facilities (JFPR) commissioned (Q3 2012). 1.10 Kunduz–Taloqan transmission line commissioned (Q4 2012). 1.11 Sheberghan gas wells rehabilitated (Q4 2012). 1.12 220 kV NEPS O&M management contract and training completed (Q3 2013). 1.13 Baharak Small Hydropower commissioned (Q4 2013). <p>[Tranche 2]</p> <ol style="list-style-type: none"> 2.1 Tranche 2 period financing request (PFR 2) approved (Q4 2009). 2.2 Tranche 3 project preparation consultants recruited and mobilized (Q1 2010) 2.3 Implementation consultants for tranche Tranche 2 projects recruited and mobilized (Q1 2010). 2.4 Tranche 3 projects prepared (Q3 2010). 2.5 Bidding documents begin to be issued for tranche Tranche 2 projects (Q4 2010). 2.6 Contractors begin to be mobilized for tranche Tranche 2 investment projects (Q1 2011). 			<p>Inputs</p> <p>ADB multitranches financing facility (MFF) grant</p> <p>Tranche 1: \$164 million</p> <p>Tranche 2: \$150 million</p> <p>Tranche 3: \$100 million</p> <p>Tranche 4: \$156 million</p> <p>MFF Total: \$570 million</p> <p>JFPR (grant): \$12 million</p> <p>Total \$582 million</p> <p>(excluding Government share of taxes and duties)</p>

Design Summary	Performance Targets and/or Indicators	Data Sources and/or Monitoring Mechanisms	Assumptions and Risks
<p>2.7 DABS capacity development (MIS; metering, billing, and collection) complete (Q4 2012).</p> <p>2.8 Completion of tranche Tranche 2 investment projects (Q2 2014).</p> <p>[Tranche 3]</p> <p>3.1 Tranche 3 (PFR 3) approved (Q4 2010).</p> <p>3.2 Implementation consultants for tranche Tranche 3 projects recruited and mobilized (Q2 2011).</p> <p>3.3 Bidding documents begin to be issued for tranche Tranche 3 projects (Q1 2012).</p> <p>3.4 Contractors begin to be mobilized for tranche Tranche 3 projects (Q3 2012).</p> <p>3.5 Completion of Tranche 3 projects (Q4 2016).</p> <p>[Tranche 4]</p> <p>4.1 Tranche 4 (PFR 4) approved (Q4 2012)</p> <p>4.2 Implementation consultants for Tranche 4 project recruited and mobilized (Q2 2013).</p> <p>4.3 Bidding documents begin to be issued for Tranche 4 project (Q1 2014).</p> <p>4.4 Contractors begin to be mobilized for Tranche 4 project (Q3 2014).</p> <p>4.5 Completion of Tranche 4 project (Q4 2016).</p>			

ADB = Asian Development Bank, DABS = Afghanistan Electricity Corporation, EA = executing agency, JFPR = Japan Fund for Poverty Reduction, kV = kilovolt, kWh = kilowatt hour, MEW = Ministry of Energy and Water, MFF = multitranche financing facility, MIS = management information systems, MW = megawatt, O&M = operation and maintenance, PFR = period financing request, PMO = program management office, Q = quarter, TJ = terajoules.

DESIGN AND MONITORING FRAMEWORK (TRANCHE I)

Design Summary	Performance Targets/Indicators	Data Sources and/or Monitoring Mechanisms	Assumptions and Risks
<p>Impact</p> <p>Better and cost-effective power supply to all customers</p>	<p>Consumption per capita per year increased from 21 kilowatt hours (kWh) to 30 kWh by 2017</p> <p>Self sustainability of Afghanistan Electricity Corporation (DABS)</p> <p>Cost recovery tariffs</p>	<p>National and regional statistics</p> <p>DABS audit</p> <p>Review of tariff methodology</p> <p>Review missions</p>	<p>Assumptions</p> <p>Other energy sector projects are successfully implemented.</p> <p>DABS gains greater institutional capacity and independence.</p> <p>The Government remains committed to energy sector reforms on policy, regulation, institutions, and tariffs.</p> <p>Risks</p> <p>Political stability and security are not achieved.</p> <p>DABS operations and governance are not modernized.</p> <p>Collection levels are inadequate.</p>
<p>Outcome</p> <p>Better power supply in northern and eastern Afghanistan, Kabul, and areas south of Kabul.</p> <p>Greater institutional capacity within DABS, i.e., management information system (MIS), metering, billing, collection, operation and maintenance (O&M) capabilities, and project management.</p>	<p>Power system capable to supply 1,450 megawatts (MW) of connected load by 2017 from North East Power System (NEPS)</p> <p>Reduction of network losses from 50% to 30% by 2017</p> <p>Program management office (PMO) staffed solely by DABS personnel by 2015.</p> <p>DABS performs O&M functions independently by 2015</p>	<p>Ministry of Energy and Water (MEW) reports and national statistics</p> <p>Project performance and monitoring systems</p> <p>Surveys of consumers</p>	<p>Assumptions</p> <p>Projects from subsequent tranches of current multitranche financing facility (MFF) are successfully implemented.</p> <p>Power networks are synchronized with neighboring countries, increasing available power.</p> <p>Risk</p> <p>Neighboring power exporting countries do not have the capacity to export.</p>
<p>Outputs (Physical)</p> <p>Increase in customers in NEPS area by (i) Kunduz–Taloqan transmission line, and (ii) Kunduz and Baghlan distribution project</p> <p>More new off-grid hydropower capacity by (i) Baharak small hydro</p>	<p>81% of urban population and 12% of rural population in the Taloqan region connected to the grid by 2013</p> <p>54% of urban population and 4% of rural population in Kunduz, and 8% of urban and 2% of rural population in Baghlan connected to the grid by 2013</p>	<p>DABS connection records</p> <p>Quarterly progress reports prepared by implementation consultants</p> <p>Project review missions</p> <p>Project performance reports</p> <p>Taking over certificates for</p>	<p>Assumptions</p> <p>Procurement and construction are timely.</p> <p>Cost escalation is within projected level.</p> <p>Risks</p> <p>Counterparty funds are lacking.</p>

Design Summary	Performance Targets/Indicators	Data Sources and/or Monitoring Mechanisms	Assumptions and Risks
project, and (ii) mini hydros [Japan Fund for Poverty Reduction (JFPR)]. Rehabilitated Sheberghan gas wells	An additional 4 MW of off-grid hydropower capacity developed by 2014 3,500 terajoules (TJ) of additional gas supply from Sheberghan gas fields by 2013	implementation contracts prepared by implementation consultants Project completion report	The executing agency (EA) capacity is limited. Security at the project site is inadequate.
Outputs (Nonphysical) Institutional support for DABS: (i) O&M of 220kV NEPS, and (ii) project management. Due diligence for tranche 2	O&M: technical losses reduced from 30% to 15% by 2017 Project management: DABS manages projects without consultant support by 2013 Tranche 2 projects identified	Quarterly progress reports prepared by consultants DABS financial statements Project review missions. Project performance reports	Assumptions Consultants are mobilized in a timely manner. The EA and the Government cooperate. Risk Capable consultants are recruited.
Major Activities with Milestones 1. Management consultants for PMO support recruited and mobilized (Q2 2009). 2. Implementation consultants for tranche 1 projects recruited and mobilized (Q2 2009). 3. Tranche 2 project preparation consultants recruited and mobilized (Q2 2009). 4. Tranche 2 projects prepared (Q4 2009). 5. Bidding documents begin to be issued (Q2 2010). 6. 220kV NEPS O&M management contract concluded. (request for proposals prepared separately, Q2 2010). 7. Contractors begin to be mobilized (Q4 2010). 8. Kunduz and Baghlan distribution networks commissioned (Q2 2012). 9. Badakhshan and Bamyán mini hydropower facilities (JFPR) commissioned (Q3 2012). 10. Kunduz–Taloqan transmission line commissioned (Q4 2012). 11. Sheberghan gas wells rehabilitated (Q4 2012). 12. 220 kV NEPS O&M management contract and training completed (Q3 2013). 13. Baharak small hydropower facility commissioned (Q4 2013).			Inputs ADB MFF: \$164 million JFPR (grant): \$12 million (excluding Government share of taxes and duties)

ADB = Asian Development Bank, DABS = Afghanistan Electricity Corporation, EA = executing agency, JFPR = Japan Fund for Poverty Reduction, kV = kilovolt, kWh = kilowatt hour, MEW = Ministry of Energy and Water, MFF = multitranche financing facility, MIS = management information systems, MW = megawatt, O&M = operation and maintenance, PMO = program management office, Q = quarter, TJ = terajoules.

DESIGN AND MONITORING FRAMEWORK (SECTOR – MFF – TRANCHE 1)

	Sector Program		ADB Energy Sector MFF		Tranche 1	
	Design Summary	Indicator and/or Performance Targets	Design Summary	Indicator and/or Performance Targets	Design Summary	Indicators and/or Performance Targets
Impact	Better and cost-effective power supply to all customers	Consumption per capita per year increased from 21 kilowatt hours (kWh) to 30 kWh by 2017 Cost recovery tariffs				
Out-come	Extended, reliable generation, transmission, and distribution power supply	Expanded distribution network covers 50% of population (from 28%) by 2015 Connected consumers have more than 23 hours of supply per day by 2015	Better power supply in northern and eastern Afghanistan, Kabul, and areas south of Kabul	Power system capable to supply 1,450 megawatts (MW) of connected load by 2017 from North East Power System (NEPS) Reduction of network losses from more than 50% to 30% by 2017		
	Financial self sustainability of Afghanistan Electricity Corporation (DABS)	Self sustainable operating activities by 2017	Greater institutional capacity within DABS, i.e., management information system (MIS), metering, billing, collection, operation and maintenance (O&M) capabilities, and project management.	Program management office (PMO) staffed solely by DABS personnel by 2015 DABS to perform O&M functions independently by 2015		
	Overhauled power sector regulation	Regulatory framework of international standards by 2017				
Out-puts (Physical)	Rehabilitation and development of transmission, generation, and distribution	New 220 kilovolt (kV) and 500 kV transmission network and substations	Expansion of 220 kV NEPS transmission system by (i) Kunduz–Taloqan	Transmission network increased by 770 kilometers (km) in NEPS	Expansion of 220 kV NEPS transmission area by Kunduz–	81% of urban and 12% of rural population connected in the Taloqan

	Sector Program		ADB Energy Sector MFF		Tranche 1	
	Design Summary	Indicator and/or Performance Targets	Design Summary	Indicator and/or Performance Targets	Design Summary	Indicators and/or Performance Targets
	systems		transmission line, (ii) replication of Pul-e-Khumri–Chimtala transmission line, and (iii) replication of Chimtala substation	by 2015	Taloqan transmission line	region by 2013
		New and rehabilitated distribution systems	Increase in customers within the NEPS area by (i) Kunduz and Baghlan distribution projects, and (ii) Kabul south extension	Grid supply newly available to, or improved in, an additional six cities by 2015 (Taloqan, Kunduz, Baghlan, Logar, Gardez, Kabul)	Increase in customers in NEPS area by Kunduz and Baghlan distribution projects.	54% of urban population and 4% or rural population in Kunduz, and 8% of urban and 2% of rural population in Baghlan, connected to the grid by 2013
		New hydropower generation plants connected (grid and off-grid)	Increase in hydropower capacity by (i) Baharak small hydropower facilities, (ii) mini hydropower facilities [Japan Fund for Poverty Reduction (JFPR)], and (iii) Lower Kokcha hydropower facility.	14 MW of additional hydropower generation by 2017	Increased new off-grid hydropower capacity by (i) Baharak small hydro facility, and (ii) mini hydro power facilities (JFPR).	An additional 4 MW of off-grid hydropower capacity developed by 2014
		Availability of domestic gas to fuel potential gas-fired power plants	Availability of new domestic gas	3,500 tera joules (TJ) of additional gas supply from Sheberghan Gas fields by 2013	Rehabilitated Sheberghan gas wells	3,500 TJ of additional gas supply from Sheberghan Gas fields by 2013
		300 MW of power supplied through Central Asia South Asia Regional Electricity Market (CASAREM) by 2014				

	Sector Program		ADB Energy Sector MFF		Tranche 1	
	Design Summary	Indicator and/or Performance Targets	Design Summary	Indicator and/or Performance Targets	Design Summary	Indicators and/or Performance Targets
	Synchronization of power networks with neighboring countries increasing available power	150 MW of power from Uzbekistan available by 2009, and 300 MW of power from Tajikistan available by 2010				
Out-puts (Non-Physical)	Implementation of capacity building programs within DABS:	Results from various activities:	Institutional support for DABS:	Results from various activities:	Institutional support for DABS:	Results from various activities:
	(i) O&M of 220 kV NEPS	Technical losses reduced from 30% to 15% by 2017	O&M of 220 kV NEPS	Technical losses reduced from 30% to 15% by 2017	O&M of 220 kV NEPS	Technical losses reduced from 30% to 15% by 2017
	(ii) Project management	DABS manages projects without consultant support by 2013 Future projects identified and prepared by DABS staff by 2017	Project management	DABS manages projects without consultant support by 2013 Future projects identified and prepared by DABS staff by 2017	Project management	Tranche 2 projects prepared, adhering to ADB policy and guidelines including social and environmental safeguards
	(iii) MIS	MIS used in DABS by 2017	MIS	MIS used in DABS by 2017		
	(iv) Metering, billing and collection	Commercial losses reduced from 40% to 20% by 2017	Metering, billing, and collection	Commercial losses reduced from 40% to 20% by 2017		
	(v) Financial (vi) Strategic planning (vii) Accounting (viii) Human resources	DABS to be operated at international standards by 2017				
	Inclusion in the Central Asian Power System (CAPS)	Agreement on power purchase agreement (PPA) with Tajikistan in 2008 Agreement on commercial				

	Sector Program		ADB Energy Sector MFF		Tranche 1	
	Design Summary	Indicator and/or Performance Targets	Design Summary	Indicator and/or Performance Targets	Design Summary	Indicators and/or Performance Targets
		terms of purchase for CASAREM by 2009 Agreement on PPA with Uzbekistan by 2009 Observer status on CAPS by 2009 Full member of CAPS by 2017 Tajik grid code adopted by 2009				
	Regulatory methodologies in line with international standards	Consultants mobilized, funded by aid agencies: (i) tariff methodology (ii) regulatory practices Tariffs increased to cost recovery levels from 2017				

ADB = Asian Development Bank, DABS = Afghanistan Electricity Corporation, CAPS = Central Asia Power System, CASAREM = Central Asia South Asia Regional Electricity Market, EA = executing agency, JFPR = Japan Fund for Poverty Reduction, km = kilometers, kV = kilovolt, kWh = kilowatt hour, MEW = Ministry of Energy and Water, MFF = multitranches financing facility, MIS = management information systems, MW = megawatt, O&M = operation and maintenance, PMO = program management office, Q = quarter, TJ = terajoules.