Deputy Minister of Energy
Ministry of Energy and Water
Islamic Republic of Afghanistan

Presentation to the Energy Charter Task Force Meeting on Regional Cooperation

20.07.2012

Afghanistan – Gateway for Regional Energy Trade

- **Strategic Location – Connection of Central Asia to South Asia**
- **Ratification of Membership in Energy Charter Treaty Pending**
- **Transmission the through Northeast Power System (NEPS)**
  - ***Application to the Uzbekenergo for Parallel (Synchronized) Operations***
  - ***Uzbekistan and Tajikistan Imports will be Isolated***
  - ***Reactive Power Compensation and National Load Control and Dispatch Center Operational in 2011***

North East Power System (NEPS)

- **Construction and rehabilitation activities on the NEPS ongoing:**
  - Domestic Production (Generation)
  - Transmission Systems
  - Distribution Systems
- **Status of Power Purchase Agreements for NEPS**
  - Uzbekistan (250 MW currently imported)
  - Tajikistan (seasonal imports in 2011)
  - Turkmenistan (limited imports)
- **Commercialization of DABM**
  - The Afghanistan National Electric Utility DABM (MEW Department) transitioned to DABS (Government Corporation) in 2009

Progress Achieved and Planned for 2011- 2012

- **Generation:**
  - **New 105 MW DPP in Kabul City by USAID (Complete)**
  - **Rehabilitate 11 MW HPP at Darunta by USAID (on going)**
  - **Rehabilitate 100 MW Naghlu HPP by fund World Bank (December 2012)**
- **Transmission:**
  - **MEW 337, Lot 1: Northern Zone Transmission, Substations and Distribution by ADB (December 2011)**
  - **MEW 337, Lot 2: Eastern Zone Transmission, Substations and Distribution by ADB (December 2011)**
  - **MEW/S 500, Lot 1: Construct 110 kV Transmission Line from Chimtala S/S to the Kabul NW S/S by World Bank (October 2011)**

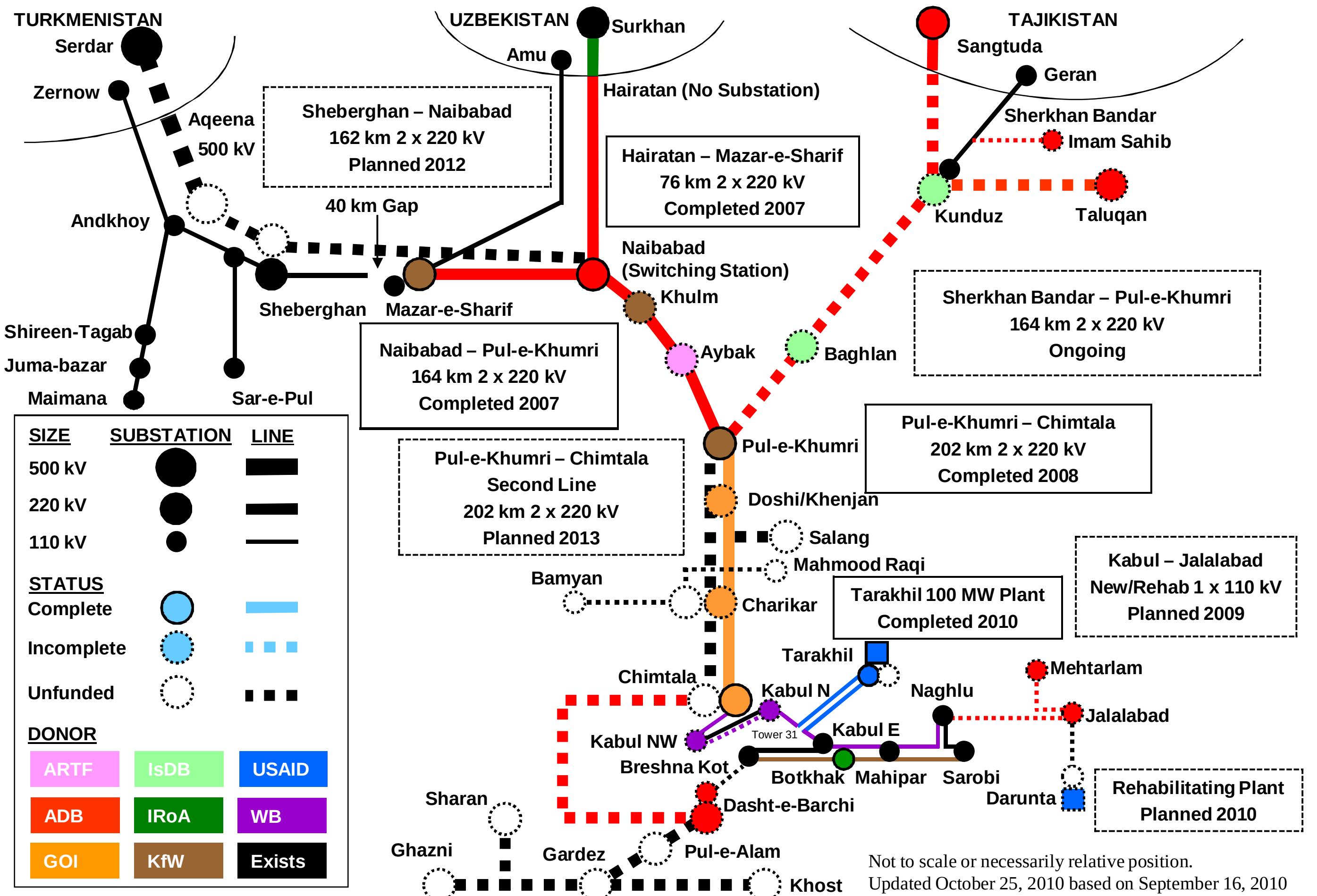
Progress Achieved and Planned for 2011 – 2012 (Continued)

- **Substations:**
  - **MEW/S 500, Lot 2: Completion of Rehabilitation and Extension of the Kabul North (2 x 40 MVA) and North West (2 x 40 MVA) Substations by World Bank (Completed)**
  - **MEW/S 503: Complete Construction of Aybak 220 kV S/S (1 x 16 MVA) and Extension of Mazar-e-Sharif S/S (1 x 50 MVA) by World Bank Afghanistan Reconstruction Trust Funds (June 2012)**
- **MV and LV Distribution:**
  - **MEW 300/2: Kabul Distribution System Rehabilitation by World Bank (June 2011)**
  - **MEW 300/3: Kabul Distribution System Expansion by World Bank Afghanistan Reconstruction Trust Funds (December 2011)**

Progress Achieved and Planned for 2011 - 2012 (Continued)

- **MV and LV Distribution:**
  - **MEW 300/4, Lots 1 and 4: Kabul Distribution, Botkhak Substation, JS 1, 5 and 10 by Islamic Republic of Afghanistan (completed)**
  - **MEW 300/4, Lots 2 and 3: Kabul Distribution Rehabilitation and Expansion by Islamic Republic of Afghanistan (completed)**
  - **MEW/S 502: Mazar-e-Sharif Distribution Rehabilitation by World Bank Afghanistan Reconstruction Trust Funds (completed)**
  - **MEW/S 504: Charikar, Gulbahar and Jabul Seraj Distribution by World Bank Afghanistan Reconstruction Trust Funds (on going)**
  - **MEW/S 506: Pul-e-Khumri Distribution Rehabilitation by World Bank Afghanistan Reconstruction Trust Funds (on going)**

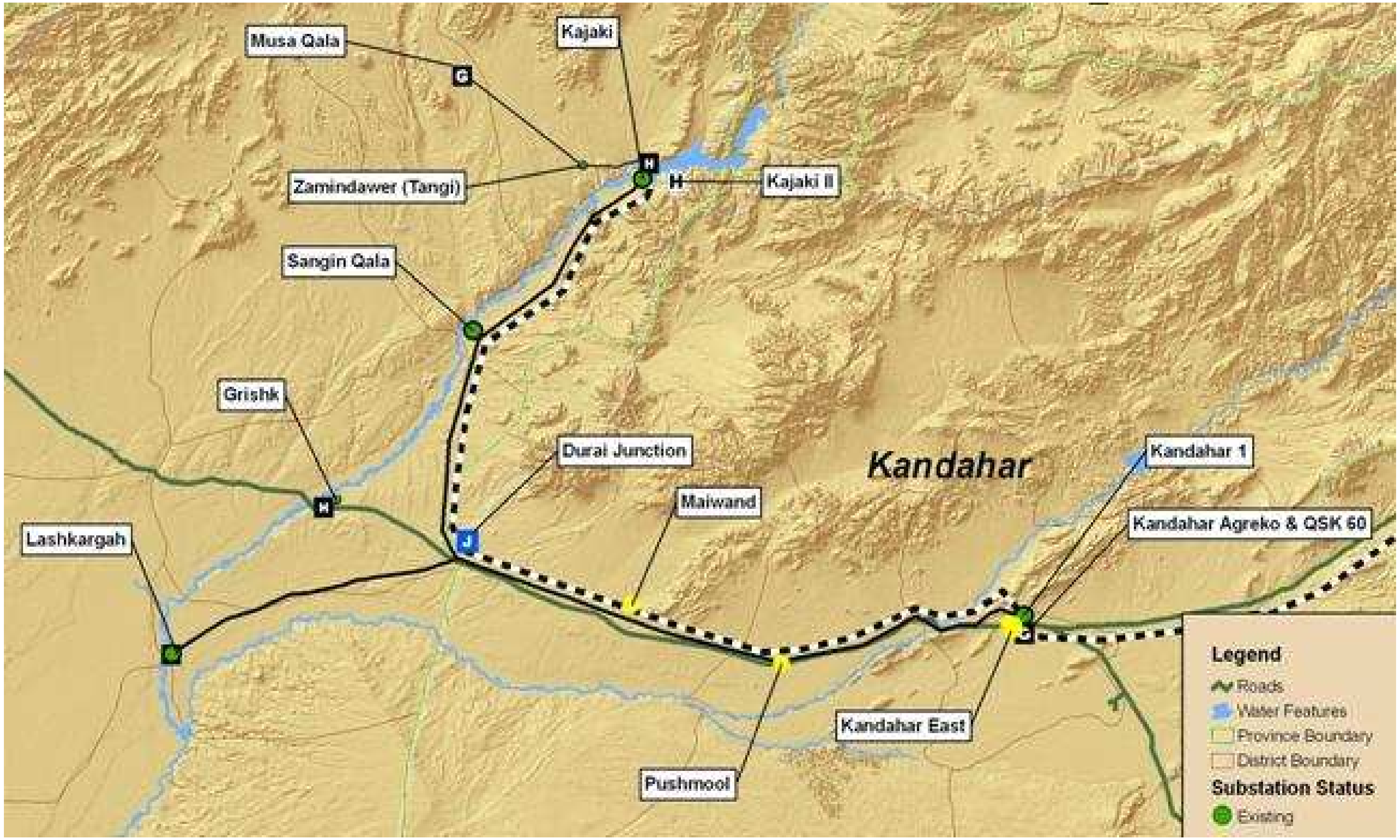
NEPS Status

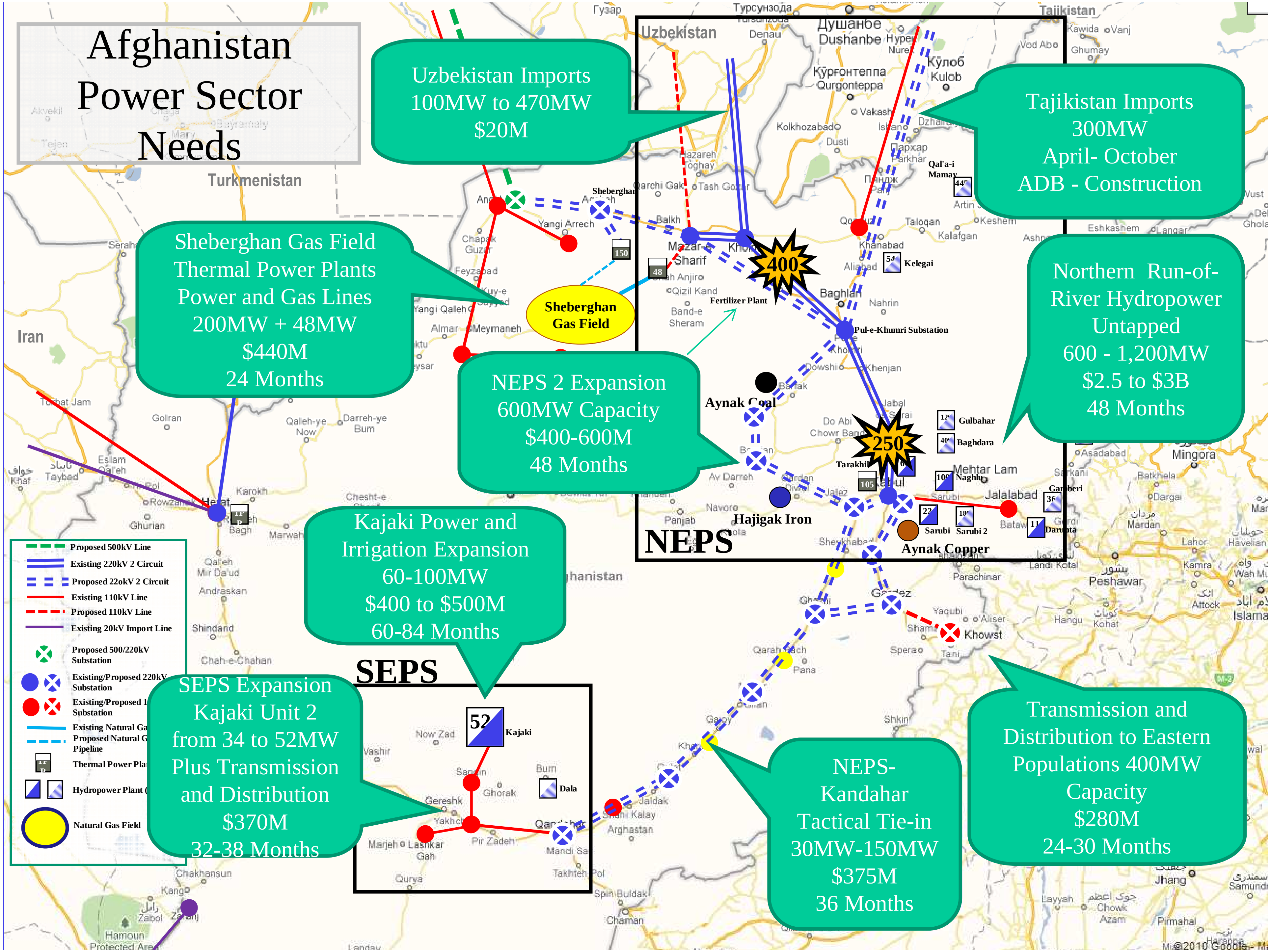


Afghan Energy Information Center (AEIC)

Not to scale or necessarily relative position.
Updated October 25, 2010 based on September 16, 2010 SLD and latest information from ICE Secretariat.

SEPS Status


Musa Qala
Kajaki
Zamindawer (Tangi)
Kajaki II
Sangin Qala
Grishk
Durai Junction
Kandahar
Maiwand
Kandahar 1
Kandahar Agreko & QSK 60
Lashkargah
Kandahar East
Pushmool
Legend
Roads
Water Features
Province Boundary
District Boundary
Substation Status
Existing



Afghanistan Power Sector Needs
Uzbekistan Imports
100MW to 470MW
$20M
Tajikistan Imports
300MW
April- October
ADB - Construction
Sheberghan Gas Field
Thermal Power Plants
Power and Gas Lines
200MW + 48MW
$440M
24 Months
Sheberghan Gas Field
NEPS 2 Expansion
600MW Capacity
$400-600M
48 Months
Northern Run-of-River Hydropower
Untapped
600 - 1,200MW
$2.5 to $3B
48 Months
Kajaki Power and Irrigation Expansion
60-100MW
$400 to $500M
60-84 Months
SEPS Expansion
Kajaki Unit 2
from 34 to 52MW
Plus Transmission and Distribution
$370M
32-38 Months
NEPS-Kandahar Tactical Tie-in
30MW-150MW
$375M
36 Months
Transmission and Distribution to Eastern Populations 400MW Capacity
$280M
24-30 Months
NEPS
SEPS
400
250
Fertilizer Plant
Pul-e-Khumri Substation
Aynak Coal
Hajigak Iron
Aynak Copper
Kajaki
Dala
Gulbahar
Baghdara
Naghlu
Sarubi
Sarubi 2
Tarakhil
Kelegai
Darunta
Uzbekistan
Tajikistan
Turkmenistan
Iran
Proposed 500kV Line
Existing 220kV 2 Circuit
Proposed 22okV 2 Circuit
Existing 110kV Line
Proposed 110kV Line
Existing 20kV Import Line
Proposed 500/220kV Substation
Existing/Proposed 220kV Substation
Natural Gas Field
Thermal Power Plant
Hydropower Plant
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NEPS Generation / Import Capacity

Generating Station	Type	Current Capacity	Anticipated Capacity
Mahipar (Rehab)	Hydro	66 MW	66 MW
Naghlu (Rehab)	Hydro	75 MW	100 MW
Surobi (Rehab)	Hydro	26 MW	26 MW
Darunta HPP (Rehab)	Hydro	0 MW	11 MW
Power Imports	Imports	120 MW	300 MW
NW Kabul GT Units	Thermal GT	45 MW	45 MW
Tarakhil DPP Units	Thermal Diesel	105 MW	105 MW
Sheberghan GT Units	Thermal GT	0 MW	200 MW
Aynak Copper Mine TPP	Thermal Coal	0 MW	200 MW
	Total	437 MW	1,053 MW

Coal Fueled TPP for Aynak Copper Mine 400 MW plant with 200 MW sale to DABS

Power Purchase Agreements

- **The Islamic Republic of Afghanistan is negotiating Power Purchase Agreements with the CAR countries:**
  - **Uzbekistan (250 MW is currently imported and up to 300 MW expected)**
  - **Tajikistan (seasonal imports in 2011)**
  - **Turkmenistan (Discussions Underway)**
- **Afghanistan values electricity trade partnerships with the CAR Countries and Our Neighbors**

Commercialization of DABS

- Afghanistan has established DABS, a Government Corporation, to improve operations and maintenance of generating stations, transmission systems, power substations, junction stations and the interconnecting lines and cables
- Improve power availability, reliability and quality (voltage and frequency)
- Improve customer billings and collections and sustainability of the DABS enterprise

Challenges

- **Increased Power Imports from Uzbekistan, Tajikistan and Turkmenistan at Reasonable Price**
- **Asset Transfer, Donor Project Handover, NEPS and SEPS Operations and Maintenance and Tariffs to Cover Costs**
- **MEW Role in Transparent Policy Making, Legal, Regulatory, and Strategic and Operational Planning, and infrastructure of power sector,**
- **Reducing DABS Technical and Commercial Losses**

Challenges (Continued)

- **Increased Electricity Generation (coal, gas and hydro)**
  - **Assessing Alternative Fuel Sources**
- **Timely Reactive Power Compensation / Load Control and Dispatch**
- **Integrate and Coordinate Renewable Energy Projects with Power Infrastructure Development**
- **Capacity Building**

Thank You