



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



**Presentation to the 6th Meeting of the  
Task Force on Regional Electricity  
Cooperation**

**Ulaanbaatar, Mongolia  
July 9, 2010**



## Afghanistan – A Gateway for Regional Energy Trade

- Strategic Location – Connection of Central Asia to South Asia
- Ratification of Membership in Energy Charter Treaty Pending
- Transmission through North – East Power System (NEPS)
  - *Application to the Central Asian Coordinating Electric Energy Council (CACEEC) for Membership in the Coordination and Dispatching Center (CDC) to Allow Parallel (Synchronized) Operations Between Afghanistan and the CAR Electricity Grid*



# 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 (120 MW currently imported)
  - Tajikistan (seasonal imports in 2012)
  - Turkmenistan (limited imports)
- **Commercialization of DABM**
  - The Afghanistan National Electric Utility DABM (MEW Department) transitioned to DABS (Government Corporation)



# Progress Achieved and Planned for 2010



- **Generation:**
  - New 105 MW DPP in Kabul City by USAID (**Complete**)
  - Rehabilitate 11 MW HPP at Darunta by USAID (October 2010)
- **Transmission:**
  - MEW 337, Lot 1: Northern Zone Transmission, Substations and Distribution by ADB (December 2010)
  - MEW 337, Lot 2: Eastern Zone Transmission, Substations and Distribution by ADB (December 2010)
  - MEW/S 500, Lot 1: Construct 110 kV Transmission Line from Chimtala S/S to the Kabul NW S/S by World Bank (August 2010)



## Progress Achieved and Planned for 2010 (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 **(Complete)**
  - 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 (December 2010)
- **MV and LV Distribution:**
  - MEW 300/2: Kabul Distribution System Rehabilitation by World Bank (August 2010)
  - MEW 300/3: Kabul Distribution System Expansion by World Bank Afghanistan Reconstruction Trust Funds (September 2010)



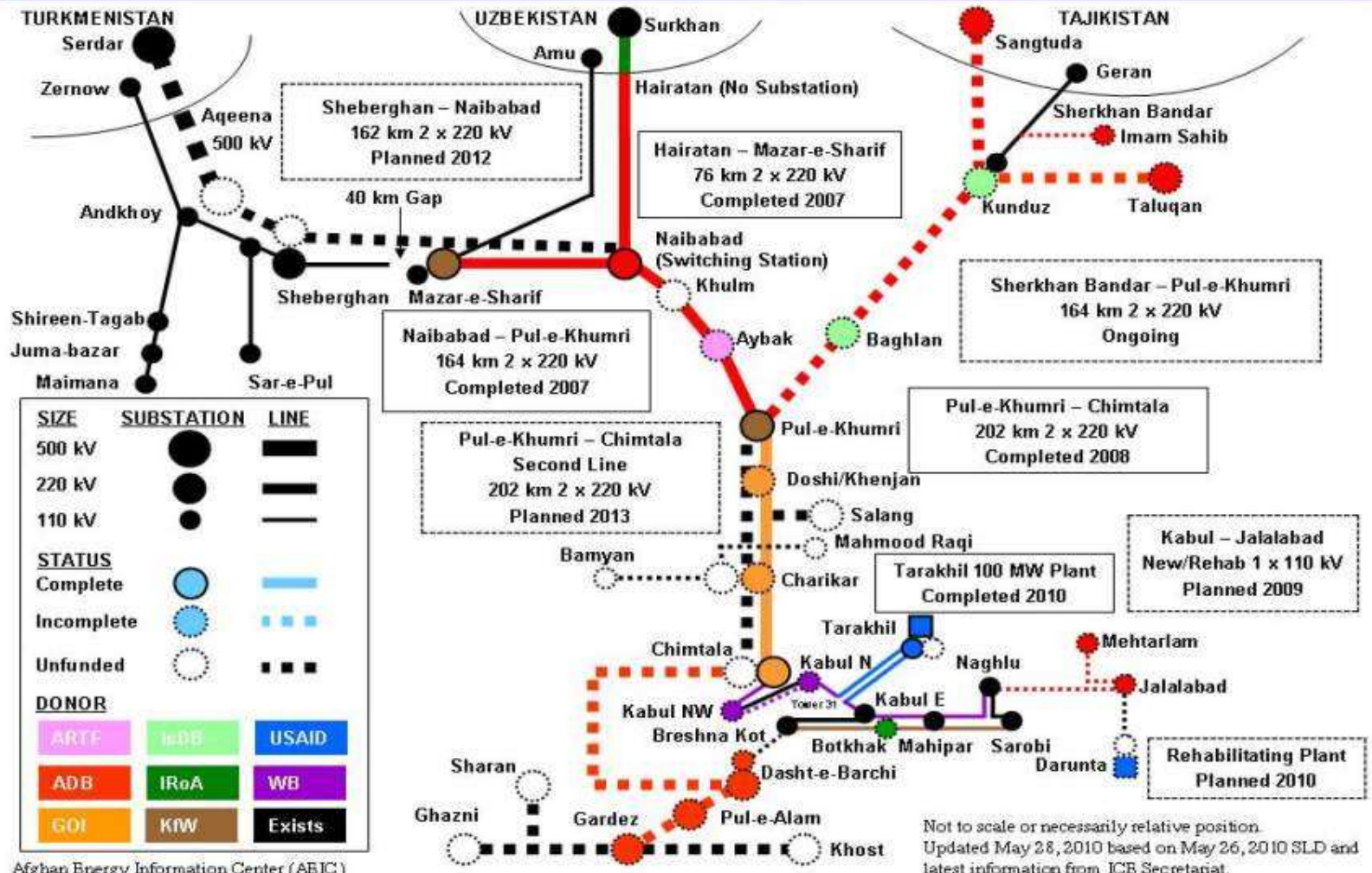
## Progress Achieved and Planned for 2010 (Continued)



- **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 (June 2010)
  - MEW 300/4, Lots 2 and 3: Kabul Distribution Rehabilitation and Expansion by Islamic Republic of Afghanistan (October 2010)
  - MEW/S 502: Mazar-e-Sharif Distribution Rehabilitation by World Bank Afghanistan Reconstruction Trust Funds (December 2010)
  - MEW/S 504: Charikar, Gulbahar and Jabul Seraj Distribution by World Bank Afghanistan Reconstruction Trust Funds (December 2010)
  - MEW/S 506: Pul-e-Khumri Distribution Rehabilitation by World Bank Afghanistan Reconstruction Trust Funds (December 2010)



# NEPS Status

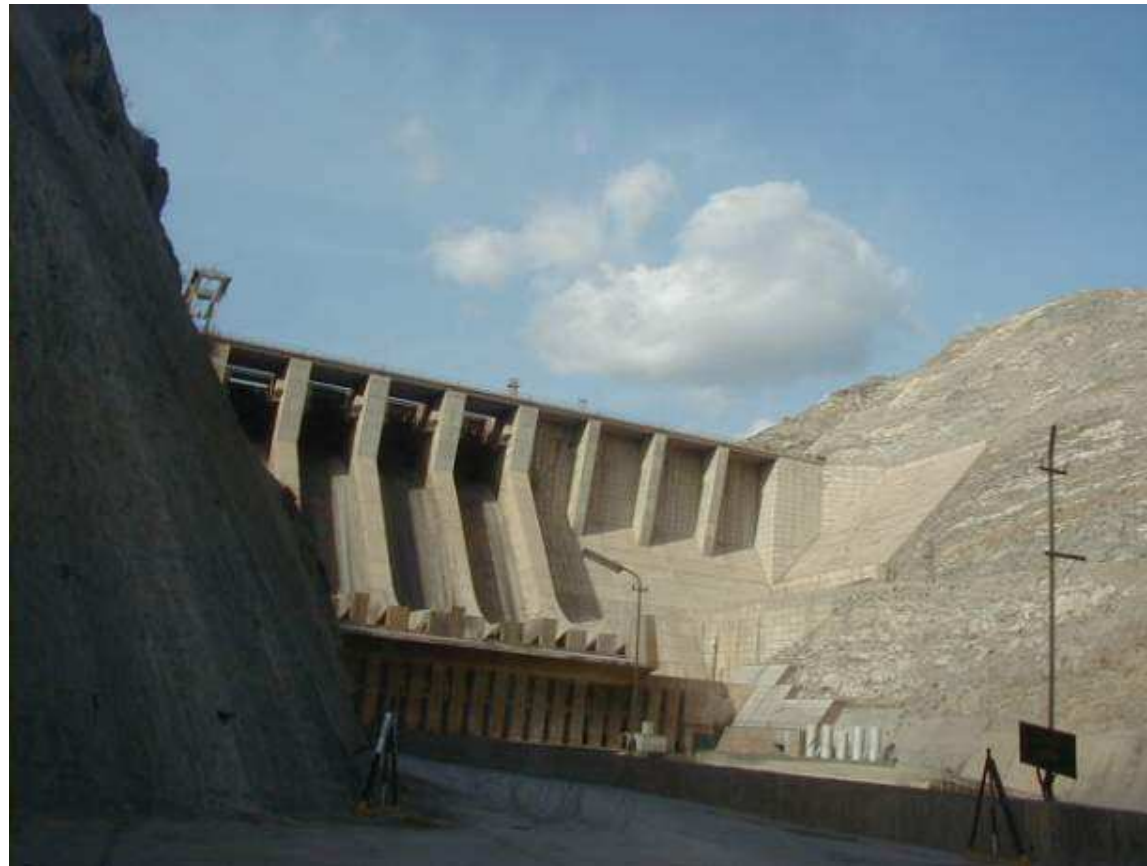


Afghan Energy Information Center (AEIC)

Not to scale or necessarily relative position.  
 Updated May 28, 2010 based on May 26, 2010 SLD and latest information from ICB Secretariat.



# Domestic Production (Generation)







## NEPS Generation / Import Capacity



Generating Station	Type	Current Capacity	Anticipated Capacity
Mahipar (Rehab)	Hydro	66 MW	66 MW
Naghlu (Rehab)	Hydro	100 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	100 MW
Aynak Copper Mine TPP	Thermal Coal Total	0 MW 237 MW	200 MW 637 MW

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



# Transmission



220 kV



**Turkmenistan Import:**  
 Aqina to Andkhoy to  
 Sheberghan to Naibabad  
 500/200 kV S/S and 500 KV  
 line Donor TBD

**Uzbekistan Import: Hairatan;**  
 Naibabad / Mazar-e-Sharif to  
 Puli-Khumri  
 220kV line Donor: ADB  
**Complete**

**Maimana and  
 Andkhoy  
 110 kV lines and  
 Substations  
 Donor: Gol  
**Complete****

**Tajikistan Import:**  
 Shekanbandar; Kunduz to  
 Pul-e-Khumri  
 220kV line Donor: ADB  
**Underway**

**Puli-Khumri to Chimtala  
 220kV line Donor: Gol  
**Complete****

**Chimtala to Kabul  
 110kV line Donor: WB  
**Complete****

**Chimtala Substation  
 220kV Donor: Gol  
 2008**

**Naghlu to Jalalabad to  
 Mehtarlam  
 110kV line Donor: ADB 2010**

**North East Power  
 System**

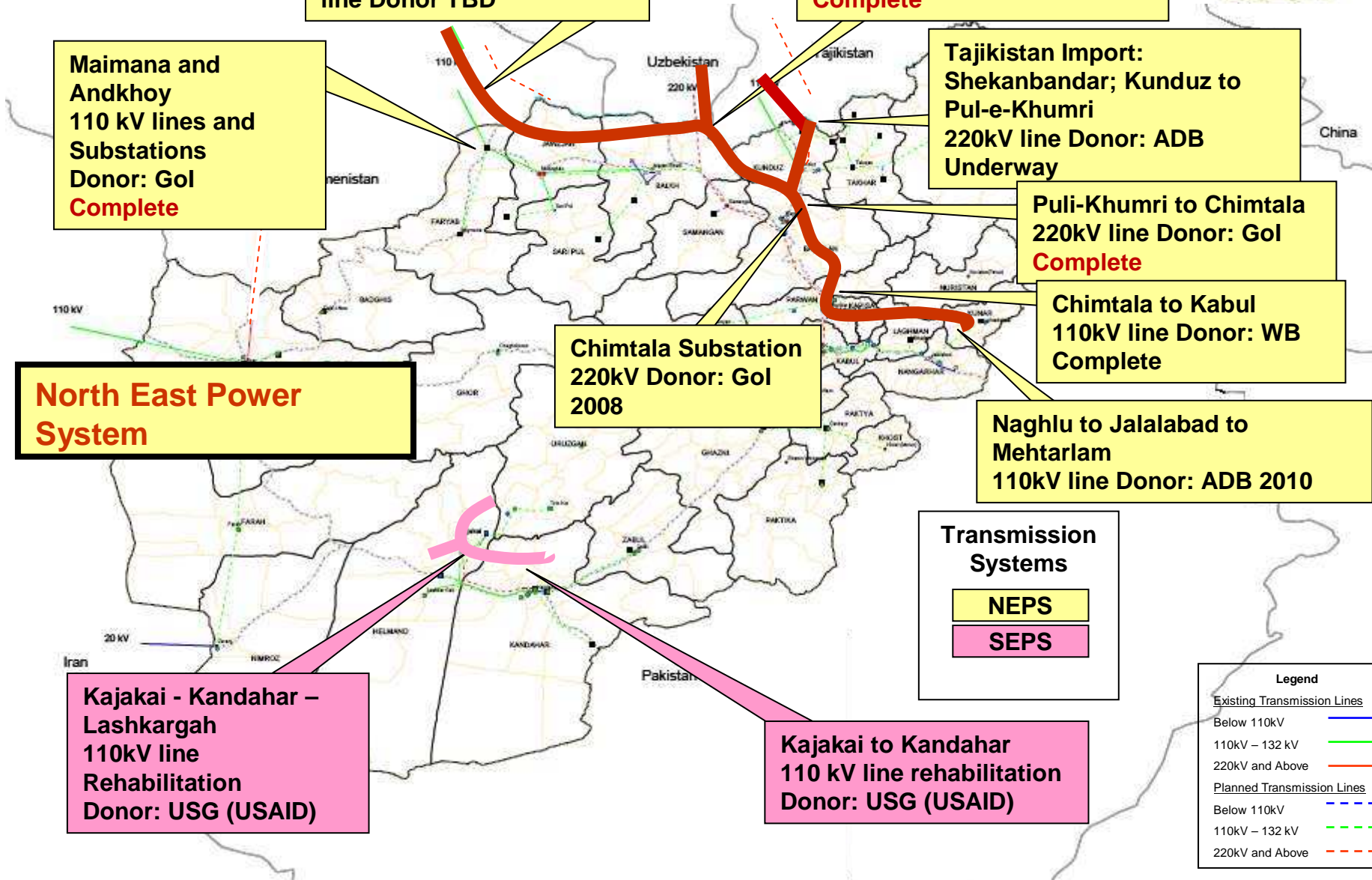
**Transmission  
 Systems**  
 NEPS  
 SEPS

**Kajakai - Kandahar –  
 Lashkargah  
 110kV line  
 Rehabilitation  
 Donor: USG (USAID)**

**Kajakai to Kandahar  
 110 kV line rehabilitation  
 Donor: USG (USAID)**

**Legend**

Existing Transmission Lines	
Below 110kV	
110kV – 132 kV	
220kV and Above	
Planned Transmission Lines	
Below 110kV	
110kV – 132 kV	
220kV and Above	



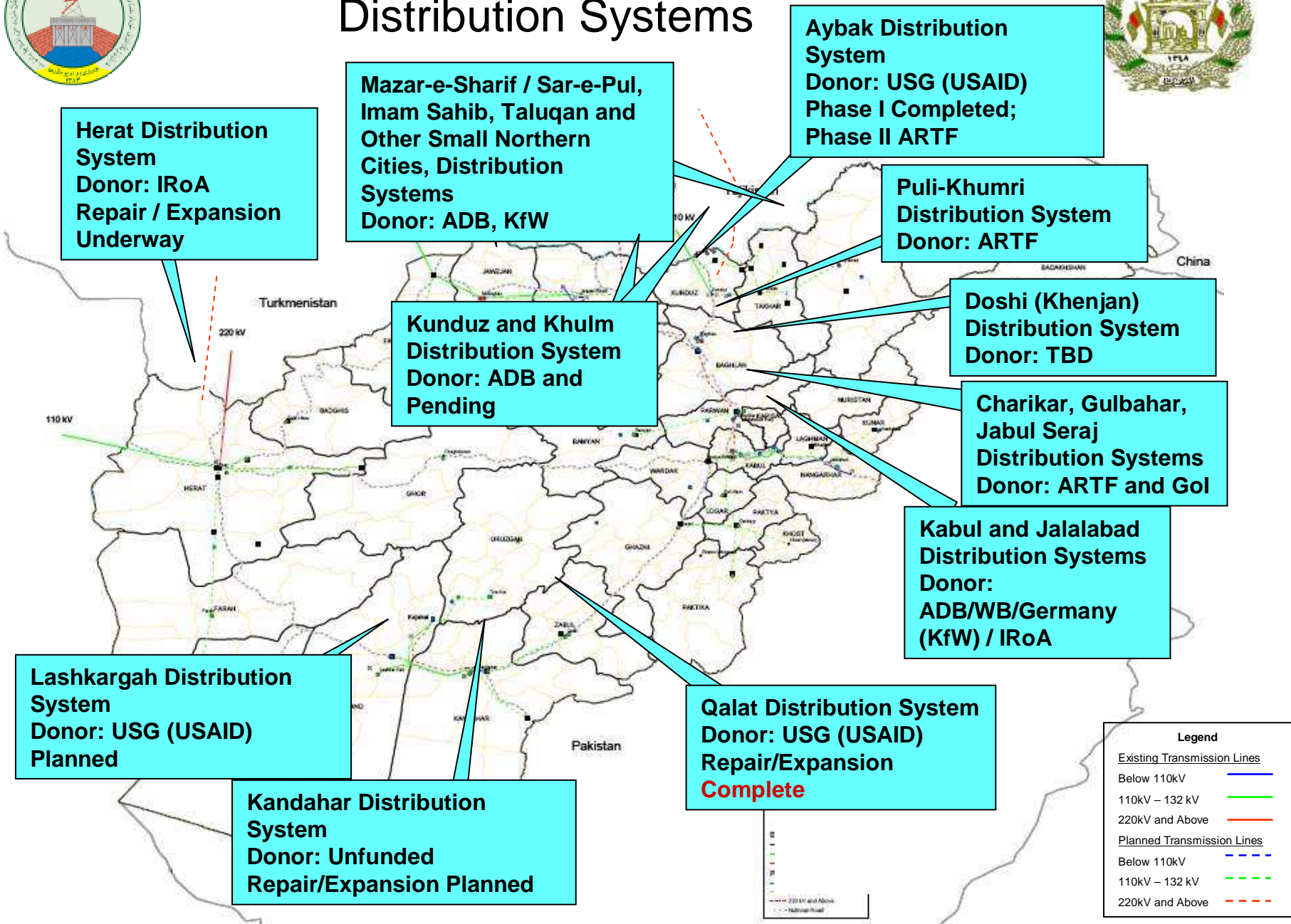


# Power Substations (220 kV or 110 kV to 15 – 20 kV)





# Rehabilitation of Existing and Planned Distribution Systems



Legend	
<u>Existing Transmission Lines</u>	
Below 110kV	— (Blue)
110kV – 132 kV	— (Green)
220kV and Above	— (Red)
<u>Planned Transmission Lines</u>	
Below 110kV	- - - (Blue)
110kV – 132 kV	- - - (Green)
220kV and Above	- - - (Red)



## Power Purchase Agreements

- **The Islamic Republic of Afghanistan is negotiating Power Purchase Agreements with the CAR countries:**
  - **Uzbekistan (120 MW is currently imported and up to 300 MW expected)**
  - **Tajikistan (seasonal imports by 2012)**
  - **Turkmenistan (Discussions Underway)**
- **Afghanistan values electricity trade partnerships with the CAR Countries and Our Neighbors**



## Commercialization of DABM

- **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**
- **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  
(Tasha Kor)**