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 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 (ongoing)
  – 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
Afghanistan Power Sector Needs

- **Uzbekistan Imports**
  - 100MW to 470MW
  - $20M

- **Sheberghan Gas Field**
  - Thermal Power Plants
  - Power and Gas Lines
  - 200MW + 48MW
  - $440M
  - 24 Months

- **NEPS 2 Expansion**
  - 600MW Capacity
  - $400-600M
  - 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
  - $280M
  - 24-30 Months

- **Tarakhil**
  - NEPS 2 Expansion
  - 600MW Capacity
  - $400-600M
  - 48 Months

- **Northern Run-of-River Hydropower Untapped**
  - 600 - 1,200MW
  - $2.5 to $3B
  - 48 Months
# NEPS Generation / Import Capacity

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

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