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

Presentation to the 7th Energy Charter
Task Force Meeting on Regional
Cooperation

Lake Issyk Kul, Republic of Kyrgyzstan
June 23, 2011
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 (120 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 (January 2012)
- Rehabilitate 100 MW Naghlu HPP by 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 *(Complete but Pending Punchlist)*
  – 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 (June 2011)
  - MEW 300/4, Lots 2 and 3: Kabul Distribution Rehabilitation and Expansion by Islamic Republic of Afghanistan (June 2011)
  - MEW/S 502: Mazar-e-Sharif Distribution Rehabilitation by World Bank Afghanistan Reconstruction Trust Funds (December 2011)
  - MEW/S 504: Charikar, Gulbahar and Jabul Seraj Distribution by World Bank Afghanistan Reconstruction Trust Funds (December 2011)
  - MEW/S 506: Pul-e-Khumri Distribution Rehabilitation by World Bank Afghanistan Reconstruction Trust Funds (December 2011)
SEPS Status
Afghanistan Power Sector Needs

Uzbekistan Imports
100MW to 470MW
$20M

Tajikistan Imports
300MW
April-October
ADB - Construction Underway

Northern Run-of-River Hydropower
Untapped
600 - 1,200MW
$2.5 to $3B
48 Months

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 Capacity
$280M
24-30 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>
</tr>
<tr>
<td>Surobi (Rehab)</td>
<td>Hydro</td>
<td>26 MW</td>
<td>26 MW</td>
</tr>
<tr>
<td>Darunta HPP (Rehab)</td>
<td>Hydro</td>
<td>0 MW</td>
<td>11 MW</td>
</tr>
<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>
</tr>
<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
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 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
- 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)