Presentation to Energy Charter Task Force Meeting on Cross Border Energy Trade

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Ministry of Energy and Water
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Afghanistan National Development Strategy (ANDS)

- Design, construction and expansion of the North East Power System (NEPS) is key ANDS activity in the Electricity Sector
  - and backbone for regional electricity trade (power imports and exports)
  - includes reactive power compensation and Load Control and Dispatch Center to interface with the Central Asia United Energy Systems (CAUES) Dispatch Center
- NEPS planned generation, transmission, substations and distribution funding requirement totals over $2.2 billion at this juncture
North East Power System (NEPS)

• Construction and rehabilitation activities on the NEPS includes
  – Domestic Production (Generation)
  – Transmission Systems
  – Substations
  – Distribution Systems

• Power Purchase Agreements with
  – Uzbekistan
  – Tajikistan (Seasonal)
  – Turkmenistan (Pending)
NEPS Project Background

- Sponsors: Ministry of Energy and Water and Ministry of Mines (for Natural Gas and Coal)
- Funding Sources:
  - Islamic Republic of Afghanistan
  - Afghanistan Reconstruction Trust Funds
  - Asian Development Bank
  - Government of India
  - KfW (German Development Bank)
  - Islamic Development Bank
  - USAID
  - World Bank
NEPS Construction and Rehabilitation Activities
Domestic Production (Generation)
<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>100 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>NW Kabul</td>
<td>Thermal GT</td>
<td>45 MW</td>
<td>45 MW</td>
</tr>
<tr>
<td>New Diesel Gen Sets</td>
<td>Thermal Diesel</td>
<td>0 MW</td>
<td>100 MW</td>
</tr>
<tr>
<td>Sheberghan Gas Turbines</td>
<td>Thermal GT</td>
<td>0 MW</td>
<td>100 MW</td>
</tr>
<tr>
<td>TPP for Aynak Copper Mine</td>
<td>Thermal Coal</td>
<td>0 MW</td>
<td>200 MW</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>237 MW</td>
<td>637 MW</td>
</tr>
</tbody>
</table>

Excludes New Hydro PP Under Consideration and Power Imports; Coal Fueled TPP for Aynak Copper Mine 400 MW plant with 200 MW sale to DABS
Transmission

220 kV

110 kV
Turkmenistan Import: Aqina to Andkhoy to Sheberghan to Naibabad 500/200 kV S/S and 500 kV line Donor USAID Underway

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

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

Puli-Khumri to Chimtal Substation 220kV line Donor: Gol 2008

Chimtal Substation 220kV Donor: Gol 2008

Naglu to Jalalabad to Mehtarlam 110kV line Donor: ADB 2010

Maimana and Andkhoy 110 kV lines and Substations Donor: GoI Complete

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

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

North East Power System (Target Operation Late 2008)

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

Planned Transmission Lines
Below 110kV
110kV – 132 kV
220kV and Above
NEPS Component Detail
Possible Future High Voltage Tajikistan-Pakistan Link

Future 500 kV Tajik to Pakistan Transmission System (under evaluation)
Power Substations
(220 kV or 110 kV to 15 – 20 kV)
MV Distribution
(15 kV – 20 kV)
**Legend**

- **Existing Transmission Lines**
  - Below 110kV
  - 110kV – 132 kV
  - 220kV and Above

- **Planned Transmission Lines**

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**Herat Distribution System**
Donor: IRoA
Repair / Expansion Underway

**Kunduz and Khulm Distribution System**
Donor: ADB and Pending

**Mazar-e-Sharif / Sar-e-Pul, Imam Sahib, Taluqan and Other Small Northern Cities, Distribution Systems**
Donor: ADB, KfW

**Kandahar Distribution System**
Donor: Unfunded
Repair/Expansion Planned

**Aybak Distribution System**
Donor: USG (USAID)
Phase I Completed; Phase II ARTF

**Puli-Khumri Distribution System**
Donor: ARTF

**Doshi (Khenjan) Distribution System**
Donor: ARTF and GoI

**Charikar, Gulbahar, Jabul Seraj Distribution Systems**
Donor: ARTF and GoI

**Kabul and Jalalabad Distribution Systems**
Donor: ADB/WB/Germany (KfW) / IRoA

**Qalat Distribution System**
Donor: USG (USAID)
Repair/Expansion Complete

**Lashkargah Distribution System**
Donor: USG (USAID)
Repair/Expansion Underway

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