In the Name of Allah
Islamic Republic of Afghanistan
Ministry of Energy and Water
Status of the Power Sector in Afghanistan

Past, Present, and Future
Power generation and import has been increased from 291 MW to 1644.76 MW.

Installed capacity to import power from neighboring countries has been raised from 50 MW to 840 MW.

Total 110 KV, 220 KV transmission lines length have been raised from 745 Km to 2200 Km.

Total number of consumers has been increased from 117,000 to about 1200000.
Transmission lines

- From Uzbekistan 300 MW in 220 KV T/L for Kabul City and other provinces.
- From Turkmenistan:
  - 25 MW from 110 KV T/L to Andkhoy, Jawzjan, Saripul, and Maymana
  - 25 MW from 110 KV T/L to Herat and Rubat Sangi
- From Tajikistan 25 MW from 110 KV T/L to Kunduz.
  - 300MW in 220kV T/L
- From Islamic Republic of Iran:
  - 120 MW through 132 KV double circuit TL to Herat and Ghorian substations
  - 10 MW through 20 KV single circuit to Herat
  - 20 MW through 20 KV double circuit to NimRoz
Existing Transmission Import Lines

Legend
Transmission Lines
Status, Voltage_kV
- Existing, 110
- In Construction, 220
- Planned, 220
Sources of Electrical Power in Afghanistan

Afghanistan main sources of Power are as follows:

- Hydro
- Natural gas
- Petroleum
- Coal
- Renewable Energy
Energy Resources Potential

- Hydro power potential: 23,000 MW (large, medium, small dams and micro hydro power plant)
- Natural gas: 60 billion cm³ approx.
- Petroleum: 12 million tons
- Coal reserves: 100 million tons (in different locations throughout the country (establishing the precise quantities and qualities require further studies)
- Solar and wind potential: (Mapping to be completed and least cost options to be pursued)
- Most of these foresaid reserves have not been exploited yet.
Improvement of the Present Status of Power

Short Term Actions

- Rehabilitation of the existing Hydro and Thermal Power Plants
- Upgrading of Distributing Networks in order to reduce technical and commercial losses
- Importing power from neighboring countries
- Developing Renewable Energy resources
Improvement of the Present Status of power

Short Term Actions

- Completion of NEPS high voltage transmission lines.
- Development of domestic sources of energy
- Installation of a gas–fired thermal power plant of 400 MW in Sheberghan.
Improvement of the Present Status of Power.

Medium Term Actions

- **HPP Detail Design Initiated and ongoing:**
  - Baghdara Hydro Power Plant
  - Kukcha & Kunar
  - Kilaghai
  - Kama River (starting)
  - Fara Roud
  - Gul Bahar

- **HPP Detail Design to be initiated:**
  - Surobi 2
  - Kajakai 2
  - Olambagh
  - Amu & Panj River
  - Kala Gosh
  - Kuner
Regional Project

1–CASA 1000
The HVAC T/L route commences at the Datka substation in Kyrgyz and terminates at Khoudjand substation in Tajikistan.

HVDC converter stations are located at Sangtuda –1 (1300 MW), Kabul (300 MW) and Peshawar (1300 MW).

Length of the T/L route (in km):
- Kyrgyz – Tajikistan interconnection – 450
- Tajikistan – 117
- Afghanistan – 562
- Pakistan – 71
Project Description

- A 450 km 500 kv HVAC transmission line between Kyrgyz Republic (430 km) and Tajikistan (20 km)
- 750 km 500 Kv HVDC transmission line between Tajikistan (117 km) through Afghanistan (562 km) to Pakistan (71 km)
  - HVDC converter stations at Sangtuda –1 (1300 MW), Kabul (300 MW) and Peshawar (1300 MW)
2–TUTAP

Central Asian Countries
Tajikistan
Uzbekistan
Turkmenistan

South Asian Countries
Afghanistan
Pakistan
ADB: AFG–TMK Regional Interconnection Project

ADB: AFG–TMK 500kV Interconnection

ADB: Additional Hindu Kosh Crossing (Salang Pass)
Resolve currently transmission capacity constraints

USAID, USFOR–A and ADB: SEPS – South East Power System double circuit only one to be strung

Interconnection with Pakistan reinforcing SEPS stringing the second circuit.

Legend
Exist 220kV
Future AC 500kV
CASA–000MWDC 500kV
Future AC 220kV
SEPS’s 220kV Reinforcement to Pakistan
Long Term Planning

➢ HPP Construction:
  • Baghdara (with the Capacity of 220 MW)
  • Surobi 2 (with the Capacity 180 MW)
  • Kajakai 2 (with the Capacity 100 MW)
  • Kokcha (Qala Mamai with the Capacity 420 MW)
  • Kuner (Shall and Sagi with the Capacity 1098 MW)

➢ Thermal Plant – Construction of coal thermal Power Plants With the Capacity 1200 MW
Thanks for Your Kind Attention