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Afghan Energy Sector Overview



Afghan Energy Sector

Sources of Power

- Imports ~78% (Uzbekistan, Turkmenistan, Tajikistan/seasonal, Iran)
- Domestic Generation
 - ~ 21% domestic hydro
 - ~ 2% diesel
 - ~ 2% thermal
- Power Purchase Agreement with Turkmenistan expected by 2014
 - leading to an additional 300MW imports starting 2018
- CASA-1000 could deliver an additional 300 MW by 2017
- Sheberghan gas-fired IPP planned for up to 200 MW by 2017

Growth

- Average annual growth rate (consumption) ~ 20% (2006 – 2012)
- Kabul experience shows: Increased power => catalyst to economic growth



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Key Issues

- **Energy Security** Increase domestic generation to balance imports
- **Tariff Reform** Gradual increase in tariff rates to cover full cost of power
- **Strengthened System Management**
 - Connect separate grids into a manageable system (NEPS-SEPS)
 - Ability to operate and maintain system – technical, technical losses
 - Ability to ensure commercial viability – revenue collection, budgeting
 - Ability to plan for system expansion capital investments
- **Energy Master Plan**
 - Up to now, GIROA & Donors had been following interim solution
 - ADB-funded Afghan Power Sector Master Plan:
 - ✓ 20 year outlook (2012 – 2032)
 - ✓ GIROA, USAID, World Bank, Islamic Development Bank participation
 - ✓ Final Report completed & adopted in April 2013
 - ✓ Coordinated with implementation for NPP for energy (NESP)

2012

**Turkmenistan
45 MW**

**Uzbekistan
300 MW**

**Tajikistan
50 MW**

**AFGHANISTAN
Transitional Power Investment**

GENERATION

POPULATION

Turkmenistan Imports
18.5 MW, \$0.02/Kwh

**NEPS:
3,300,000**

Transmission Line Capacity
250 MW

**Naglu, Surobi,
Mahipar Dams
166 MW**

**Tarakhil
Thermal
Power Plant
105 MW**

**Greater Kabul and
Jalalabad
5,300,000**

**Iran
90 MW**

Ghazni: 1,200,000

**Kajaki Dam
33 MW**

**Paktia, Khost,
Logar: 750,000**

Supply:

- Imports 500 MW
 - Hydro 200 MW
 - Tarakhil 105 MW
- ~805 MW

Distribution:

Capacity ~700 MW

Population:

NEPS/SEPS ~13.6 M

**Iran Imports
10 MW**

SEPS: 2,100,000

**NEPS-SEPS
Corridor
950,000**

• Existing Substations

Existing Transmission Line

National Highway (Under Construction)

Regional Highway (Existing)

Regional Highway (Under Construction)

Other Country Major Highways

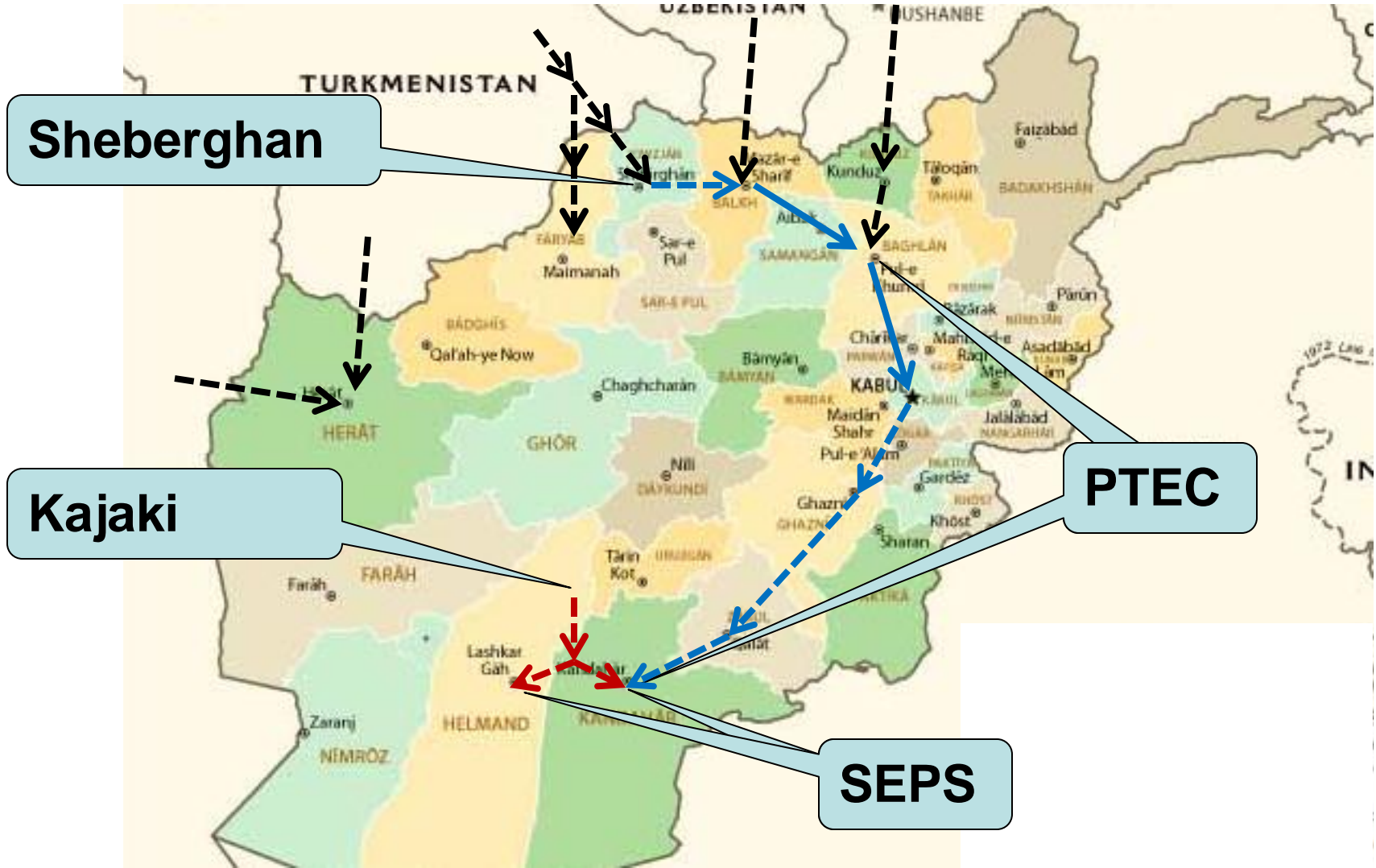
District Boundaries



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ENERGY OVERVIEW



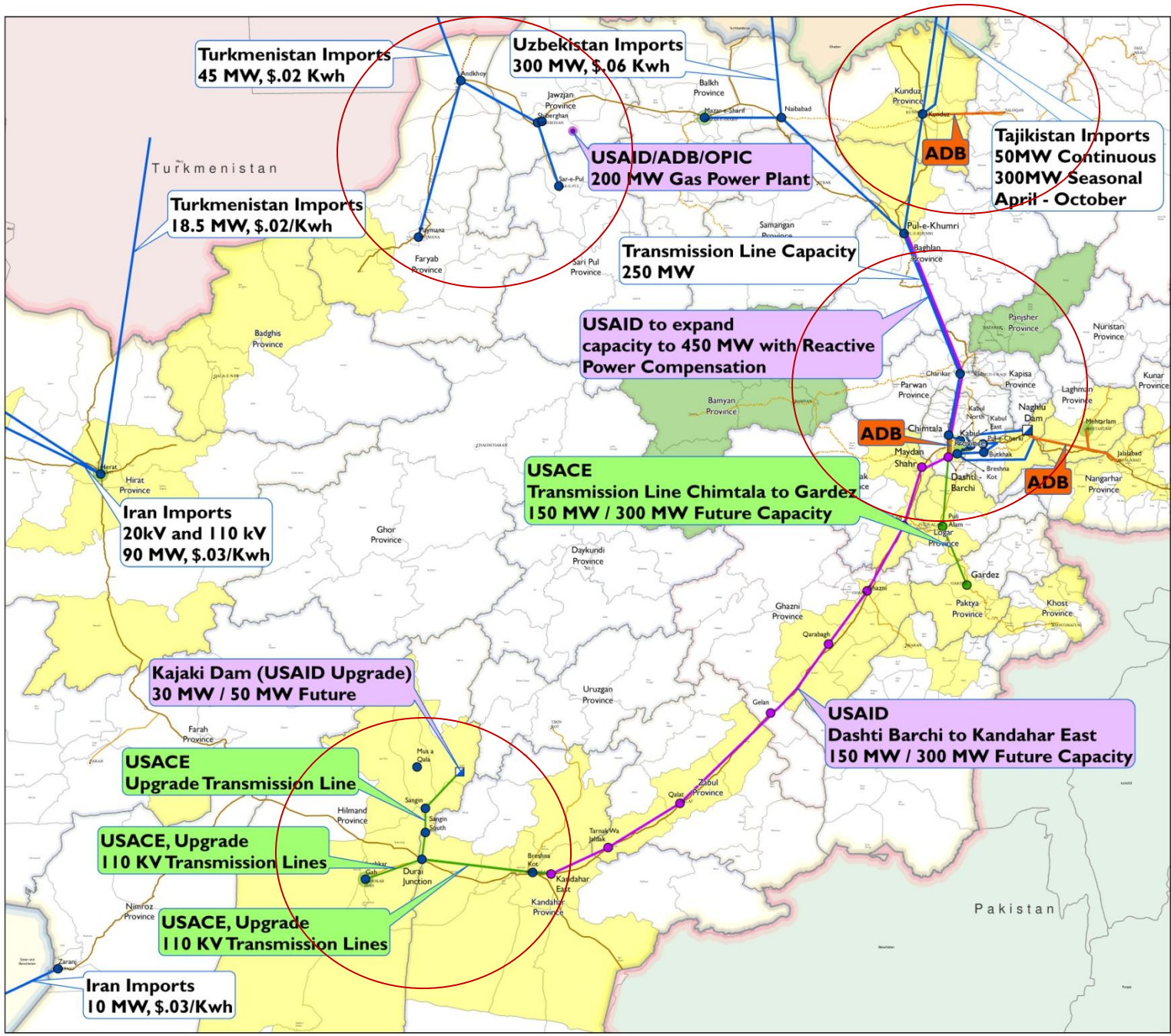


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Priority USAID Energy Projects

- **Kandahar Helmand Power Project (KHPP)**
- **Power Transmission Expansion and Connectivity (PTEC)**
- **Sheberghan Gas Development Program (SGDP)**



AFGHANISTAN Transitional Power Investment

- USAID Substations
- USAID Transmission Line
- Sheberghan Gas Power Plant
- USACE Substations
- USACE Transmission Line
- ADB Transmission Line
- Existing Substations
- Existing Transmission Line
- Province Center
- Transition Cities
- Transition Area
- National Highway (Existing)
- National Highway (Under Construction)
- Regional Highway (Existing)
- Regional Highway (Under Construction)
- Other Country Major Highways
- District Boundaries
- Province Boundaries
- International Borders