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Afghanistan Electricity Demand Forecast

5 November 2005



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NTS and STS Demand Forecast

- **Northern Transmission System (NTS) connects Kabul to Pul-e-Khumri with ties to Tajikistan, Uzbekistan and Turkmenistan for import power.**
- **Southern Transmission System (STS) connects Kajaki Hydro plants with Sangin, Lashkar-Gah, Pushmool and Kandahar.**



NW Kabul Unit 3



Kandahar Gen Sets



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Department of Peacekeeping Operations
Cartographic Section



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Power System Capacity and Source

System Characteristics	Value
Available Capacity	271.0 MWe
System Losses (T&D)	44%
Household Access to Local Power (Generation)	9.7%
Household Access to Local Power (Generation and Import Power)	11.5%

Sources: World Bank from Draft Afghanistan Electricity Sector Commercial Performance Baseline & Status Report, and Norconsult-Norplan Association, Power Sector Master Plan 2005



NTS Demand Forecast

Load Center	2005 Connections (People Served) (1)	Expected Phased 2005 – 2010 Expansion (People Served) (2)	Projected 2010 Connections (People Served)	2005 Connected Demand (MWe)	2005 Suppressed Demand (MWe)	Projected 2010 Demand (MWe)
<i>Kabul / Kabul Province</i>	130,500 (783,000)	219,500 (1,317,000)	350,000 (2,100,000)	125.0	85.0	350.0
<i>Mazar-e-Sharif / Balkh Province</i>	48,000 (288,000)	70,000 (420,000)	118,000 (708,000)	32.0 (30 MWe Import)	-	105.0
<i>Shebergan / Jowzjan Province</i>	18,500 (111,000)	70,000 (420,000)	88,500 (531,000)	12.6 (12 MWe Import)	-	80.0
<i>Andkhoy / Faryab Province</i>	13,000 (78,000)	9,000 (54,000)	22,000 (132,000)	12.0	-	20.0
<i>Kunduz / Kunduz Province</i>	13,000 (78,000)	20,000 (120,000)	33,000 (198,000)	6.0	14.0	30.0
<i>Pul-e-Khumri / Baghlan Province</i>	10,000 (60,000)	40,000 (240,000)	50,000 (300,000)	13.5	3.0	50.0
<i>Charikar / Parwan Province</i>	7,000 (42,000)	15,000 (90,000)	22,000 (132,000)	3.0	9.0	25.0
<i>Aybak / Samangan Province</i>	1,500 (9,000)	7,000 (42,000)	8,500 (51,000)	1.1	-	10.0
Total	241,500 (1,449,000)	450,500 (2,703,000)	692,000 (4,152,000)	205.2	111.0	670.0

Notes: (1) Connections inclusive of residential, commercial, government and public buildings, and assumes an average of 6 people served per connection.

(2) Expected distribution system expansion (distributed and island modes) funded by ADB, GOA, USAID and WB.



STS Demand Forecast

Load Center	2005 Connections (People Served) (1)	Expected Phased 2005 – 2010 Expansion (People Served) (2)	Projected 2010 Connections (People Served)	2005 Connected Demand (MWe)	2005 Suppressed Demand (MWe)	Projected 2010 Demand (MWe)
<i>Kandahar / Kandahar Province</i>	22,500 (135,000)	77,500 (465,000)	100,000 (600,000)	25.0	20.0	90.0
<i>Lashkar-Gah / Helmand Province</i>	4,500 (27,000)	41,500 (249,000)	46,000 (276,000)	12.0	15.0	40.0
<i>Qalat / Zabol Province (Island Mode)</i>	1,800 (10,800)	1,800 (10,800)	3,600 (21,600)	1.6	-	3.2
<i>Tirin Kot / Oruzgan Province (Island Mode)</i>	0 (0)	1,200 (7,200)	1,200 (7,200)	0.0	-	1.0
Total	28,800 (172,800)	122,000 (732,000)	150,800 (904,800)	38.6	35.0	134.2

Notes: (1) Connections inclusive of residential, commercial, government and public buildings, and assumes an average of 6 people served per connection.

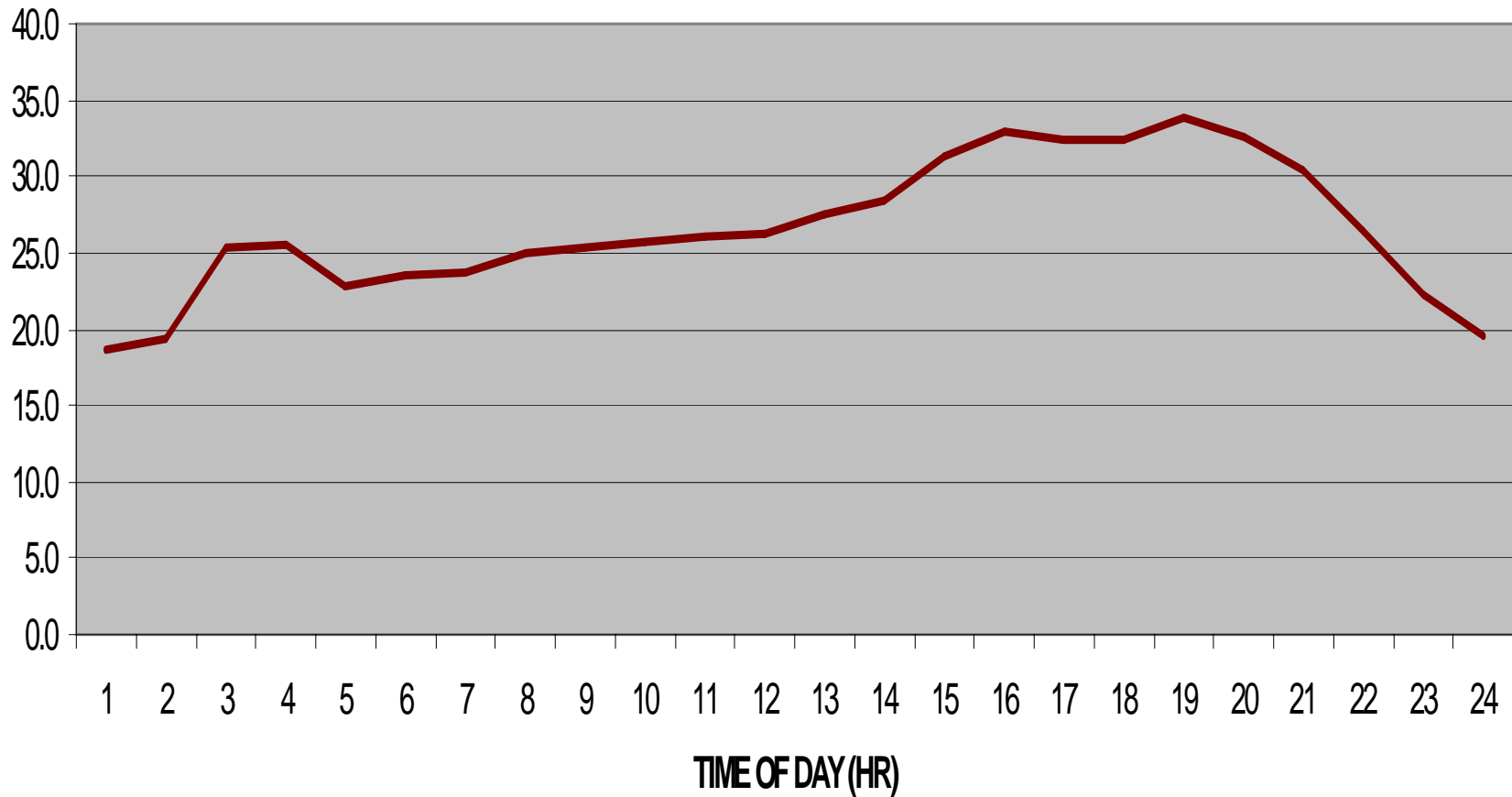
(2) Expected distribution system expansion (distributed and island modes) funded by ADB, GOA, USAID and WB.



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STS Demand Forecast

AVERAGE DAILY LOAD CURVE - STS FOR THE MONTH OF OCTOBER 2005 (MWe)





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- **Definitions:**

- **Connected Load (CL)** are customers actually connected to the distributed (utility mode) or local (island mode) power grid in 2005.
- **Suppressed Load (SL)** are customers who are not connected to the distributed (utility mode) or local (island mode) power grid but have requested to be connected in 2005.
- **Future Load (FL)** are projections of customers who are expected to be connected to the distributed (utility mode) or local (island mode) power grid by 2010.