



**USAID**  
FROM THE AMERICAN PEOPLE

# Afghanistan Electricity Demand Forecast

**5 November 2005**



**USAID**  
FROM THE AMERICAN PEOPLE

## 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



# USAID

FROM THE AMERICAN PEOPLE



Map No. 2652 Rev. 3 UNITED NATIONS  
January 2004

Department of Peacekeeping Operations  
Cartographic Section



**USAID**  
FROM THE AMERICAN PEOPLE

## Power System Capacity and Source

| <b>System Characteristics</b>  | <b>Value</b>     |
|--|------------------|
| <b>Available Capacity</b>  | <b>271.0 MWe</b> |
| <b>System Losses (T&amp;D)</b>                                       | <b>44%</b>       |
| <b>Household Access to Local Power (Generation)</b>                  | <b>9.7%</b>      |
| <b>Household Access to Local Power (Generation and Import Power)</b> | <b>11.5%</b>     |

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

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

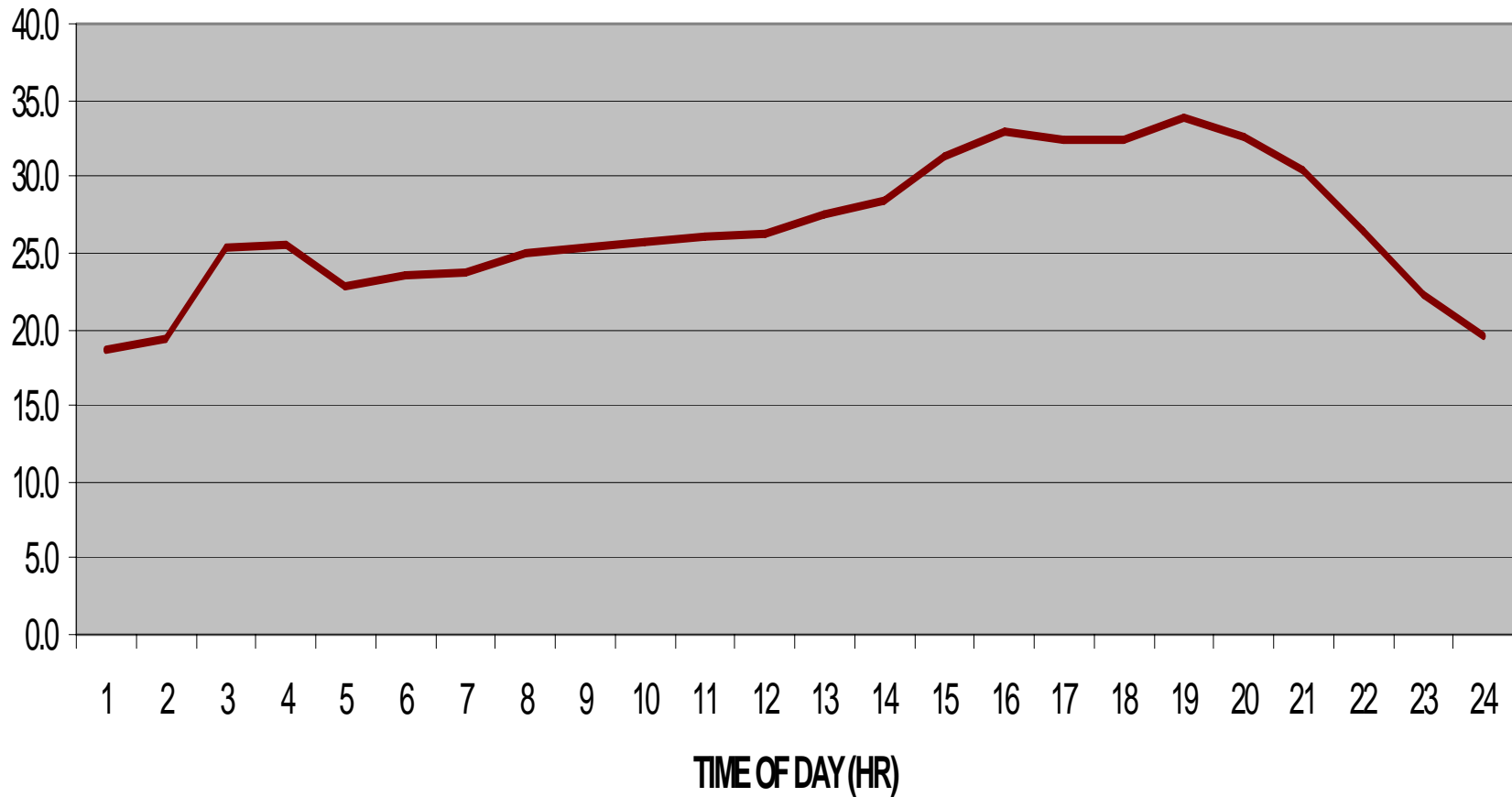
(2) Expected distribution system expansion (distributed and island modes) funded by ADB, GOA, USAID and WB.



**USAID**  
FROM THE AMERICAN PEOPLE

## STS Demand Forecast

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





**USAID**  
FROM THE AMERICAN PEOPLE

## NTS and STS Demand Forecast

- **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.