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- A comprehensive census of the Kabul power consumers to accurately re-assess the system and create an accurate and comprehensive customer database;
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Closing Thoughts

Notwithstanding the higher-than-supposed level of access to electricity in Afghanistan, particularly in Kabul, it should be stressed that the electricity sector continues to severely constrain economic and human development in Afghanistan. The power supplied is generally of poor quality, meaning fluctuating voltage levels (which damage machines and appliances), power surges, and blackouts are common. There are still extreme supply-side constraints for existing consumers (power from the public grid is available only a few hours daily in most places), to say nothing of the supply that would be required to fuel economic growth; and industrial load is virtually nonexistent. The high cost of private generation is prohibitive for most of the population, allowing for only very limited generation when the public supply is not available. The government and its international partners need to keep a strong focus on addressing these fundamental problems while improving the operations of the national utility, Da Afghanistan Breshna Moassese (Breshna), in particular, dramatically improving the quality of data collection in the national power system.

Introduction

It is generally believed that Afghanistan has one of the lowest levels of access to electricity in the world; the figure of 6% access on the national level is often cited. While it is certainly true that overall access to electricity is low in this overwhelmingly rural and poor country, a review of recent household survey data and updated national utility data suggests that the access to electricity is somewhat higher than has generally been supposed, particularly in urban Afghanistan.

This note presents the new data and examines the implications of higher levels of access for policy makers and the managers of the power system in Afghanistan, particularly in Kabul. Recommendations to improve the quality of the utility’s knowledge of the power system in Kabul follow the analysis of the survey data.

Recent Household Surveys and Updated Utility Data

Table 1 presents data on access to electricity in Afghanistan from the National Risk and Vulnerability Assessment (NRVA), a household survey, and from Da Afghanistan Breshna Moassese (Breshna), the national utility. The NRVA, a large nationwide survey carried out in 2005, showed access to electricity through the public grid (Breshna) of about 16%.

In contrast, the estimate based on the most current Breshna data on residential consumers suggests an access level of about only 11% on the national level. Of the urban households that participated in the survey, about 64% reported access to electricity through Breshna.

Access to electricity in Kabul alone is presented in Table 2. In addition to the NRVA 2005 data and the Breshna utility data, the table shows data from a survey commissioned by the World Bank and carried out by the Central Statistics Office and Kabul University in August 2006 called the Kabul Household Energy and Water Survey (KHEWS). The data from the two household surveys that were carried out in Kabul suggest that the utility data on consumers underestimate the actual level of access by a degree even greater than was observed with the national-level data. According to the results of the NRVA 2005 survey, about 59% of households reported access to electricity through Breshna. In August 2006, about 68% of the households that participated in the KHEWS reported access to electricity through Breshna, in contrast to the estimate of 34% that was derived from the Breshna utility data on residential consumers in Kabul.

Table 1: Access to Electricity in Afghanistan: Comparison of Survey and Utility Data

<table>
<thead>
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<tbody>
<tr>
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<td>5,755</td>
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<td>of which, Urban</td>
<td>15.6</td>
<td>64.2</td>
</tr>
<tr>
<td>of which, Rural</td>
<td>3.8</td>
<td>43.1</td>
</tr>
<tr>
<td>Breshna utility data (2007)</td>
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* For NRVA, “any source” includes public supply, government generator, personal generator (engine), personal generator (micro-hydro), community generator (engine), community generator (micro-hydro), solar. ** Extrapolation based on Breshna data on residential customers and population data from the Central Statistics Office. If kuchi are excluded from this extrapolation (on assumption that kuchi would not consume power from public supply), the access rate becomes 11.9%.
Second, in the years of reconstruction, efforts by the Government of Afghanistan and Breshna to increase access have yielded some results in urban Afghanistan, and rural Afghanistan has seen a modest increase in access primarily thanks to the National Solidarity Program.

Third, the private efforts of individuals and domestic entrepreneurs have also contributed to the increased access to electricity and other energy services.

Finally, some part of the discrepancy between the Breshna data and the survey data may be accounted for by unregistered connections to the public supply and/or poor record-keeping by the utility. In this regard, the case of Kabul is of particular note: the percentage of households that reported access to Breshna in the World Bank KHEWS survey is twice the percentage of households with access according to the data from Breshna.

The analysis of the KHEWS data also considered the possibility that so-called “minor consumers” might account for the discrepancy between the estimates of access to electricity derived from the survey as opposed to the utility data. “Minor” consumers (in Dari, “far” meaning “branch”) are those who legally receive electricity through “main” consumers (in Dari, “asli” meaning “trunk”) who have the account with Breshna. Because Breshna does not keep records on the number of “minor” consumers, theoretically a large number of “minor” consumers could explain the discrepancy that has been described. However, the data from the KHEWS show that “minor” consumers account for only about 1.5% of the households that participated in the survey. Thus, this is not an important factor in explaining the discrepancy.

The analysis also considered the possibility that people participating in the survey did not completely understand what was meant by “public supply” and “Breshna” as opposed to other sources of electricity. However, it was clear from discussions with the interviewers and the researchers that Breshna is well known in Afghanistan (indeed, it is essentially a household word) and that people understand well the difference between the relatively low-cost public supply of electricity and other sources of electricity that are much more expensive to the individual household.

Finally, the analysis considered whether people would have any incentive to overstate their access to electricity through Breshna. However, there is no credible reason for people to do this, indeed, the opposite incentive would seem to prevail (i.e., people underreporting access to Breshna in order to keep unregistered connections from coming to the attention of the authorities).

In conclusion, considering all the facets of the analysis as presented above and the fact that the two surveys gave results that are very similar, it seems likely that the survey results more accurately reflect the actual level of access to electricity in Afghanistan and particularly in Kabul. At the very least, it would seem reasonable to conclude that the estimate based on Breshna data represents the minimum boundary of the estimate of access to electricity, while the survey data represent the maximum boundary, with the actual level somewhere in between and likely closer to the survey results.

**Recommendations**

It is impossible to manage a power system efficiently and effectively without accurate information on the number of consumers in the system and their demand characteristics (quantity and time of power consumption). The reasons for this are obvious: in the short run, in addition to making the already weak financial condition of Breshna worse (by not being part of the company’s formal billing and payment system), a high percentage of unregistered consumers causes demand to significantly exceed supply, resulting in voltage fluctuations, outages, equipment failure, and generally poor quality of electricity supply for all consumers. In the medium-to-longer term, a poor knowledge of its customer base will make it impossible for Breshna to forecast its electricity demand (including willingness and ability of different customer groups to pay for electricity services) and to generate or contract sufficient power supply to meet this demand.

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