Afghanistan Energy Study: Activity 3 – Household and Enterprise Energy Diaries

Fanny Missfeldt-Ringius

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WORLD BANK GROUP
Energy & Extractives

Summary

- Main objective would be to assess energy consumption patterns of various fuels by rural and peri-urban households, community institutions and small scale enterprises and the financial implications and opportunities for scaling up energy services provision to the same.
- The overall survey is intended to provide information which could be used to derive the quantity of energy usage as well as willingness to pay, which in turn would support the evaluation of investments in energy supply.
- Data to be gathered from enterprises are intended to discover major sources of economic growth in rural and peri-urban areas, and how energy access plays a pivotal role for them.
- The data also are also expected to be useful for studies of the impact of energy usage patterns on health and well-being, as well as gender-related implications of fuel procurement.
- Information collected through the surveys will capture seasonal variations, which can then be used to derive the quantum of energy usage as well as willingness to pay, based on actual rather than recalled current household expenditures on various forms of energy.

Findings Based on NRVA (2013/14)

Electricity supply by type of generation	National	Rural	Urban
Access to electricity			
Yes	89.0	85.9	98.6
No	11.0	14.1	1.4
Source of Electricity			
Grid	29.7	10.9	88.8
Government Generator	0.7	0.2	2.2
Private Generator - Engine	0.8	0.7	1.0
Private Generator – Hydro	1.2	1.5	0.1
Community Generator – Engine	0.4	0.5	0.3
Community Generator - Hydro	7.4	9.7	0.1
Solar	46.4	57.9	10.2
Wind	0.4	0.6	0.1
Battery	11.6	14.3	3.3

What Scope?

The proposed assignment will be carried out in two phases. In Phase I, the survey will be piloted in the one of the provinces listed under each categories in table 2, amounting to 5 provinces in total.

Electrification rates	Provinces	Population (in Thousand)	Electrification Profile
1. Highest	5 provinces: Kabul, Herat, Balkh, Kandahar, Kunduz	Total: 9080.3; Kabul (3950.3); Herat (1780); Balkh (1245.1); Kandahar (1151.1); Kunduz (953.8)	Provinces that are projected to reach a load of more than 100 MW by 2032, and taken together account for 60% of total peak demand in Afghanistan (Masterplan 2013)
2. Expected to grow	12 provinces: Badakhashan, Baghlan, Faryab, Helmand, Jowzjan, Laghman, Nangarhar, Parwan Samangan, Sar-e-Pol, Takhar, and Wardak.	Total: 8536.2; Badakhashan (904.7); Baghlan (863.7); Faryab (482.4); Helmand (879.5); Jowzjan (512.1); Laghman (424.1); Nangarhar (1436); Parwan (631.6); Samangan (368.8); Sar-e-Pol (532); Takhar (933.7); Wardak (567.6)	Together with the 5 provinces mentioned above, these provinces are seen as those where network expansion will be possible and necessary from the demand point of view in the short-term (up to 2020)
3. Connection to the grid possible	13 provinces: Badghis, Bamyan, Ghazni, Ghor, Kapisa, Khost, Kunar, Logar, Paktia, Paktika Panjshir, Uruzgan, and Zabul	Total: 6199.6; Badghis (471.9); Bamyan (425.5); Ghazni (1168.8); Ghor (657.2); Kapisa (419.8); Khost (546.8); Kunar (428.8); Logar (373.1); Paktia (525); Paktika (413.8); Panjshir (146.1); Uruzgan (333.5); Zabul (289.3)	These provinces are expected to be connected to the electricity grid post 2020.
4. Connected to Iran	Nimruz	Total: 156.6	Nimruz is too far from the Afghan grid and already connected to the Iranian grid.
5. Off-grid solutions	Nuristan, Daykundi, Fayab	Total: 1527.4; Nuristan (140.9); Daykundi (438.5); Fayab (948)	These provinces are not densely populated and decentralized power supply solutions are recommended for these provinces.

Methodology

Three types of survey instruments will be developed for the comprehensive survey.

One-time settlement survey and household profiling

- *Household demography*
- *Living conditions*
- *Economic status* (Overall income and expenditure pattern in household)
- *Electricity access*

Household Diary

- Energy consumption and expenditure (on lighting, cooking, heating, transport, others)
  - Cost and consumption of off and on grid electricity services and willingness-to-pay for enhanced services
  - Household expenditure on electricity (by generation type) and other energy services,
  - Quantity and amount of household expenditure spent on fuel purchases,
  - Sources of refills

Enterprise and Institutions' Survey

- *Condition of electricity access in public institutions*
- *Energy Access for Small and Medium Enterprises*

Need Advice on…

- *How to be more effective when conducting surveys in rural areas (mainly in terms of tools and technologies used)*
- *Any suggestions on any Small and Medium enterprise database*
- *Any suggested survey companies that have done similar work in Afghanistan before*

THANK YOU

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