World Bank Energy Study
Household and Enterprise Energy Diaries

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Research Project Update

Points


Summary of the research
Based in communities
Changes across time
Research methodology
Preliminary Data
Next Steps

Summary of the research

Baseline Phase (COMPLETED)	Quantitative: Diary Phone Surveys	Qualitative: Seasonal Case Studies
• Community Profiles (30 across 5 provinces) • 3050 Household Surveys • 250 business and institution survyes • 30 Focus Group Discussions	• Calling back all participants every month, for 12 months -- up to 39,600 surveys • Asking key questions for seasonality and ongoing/changing usage	• Deep dive into 10 households (2 per province) • 1 per season (4 total) • Explore themes including seasonality, education, health, gender, aspirations

- Community profiles in December 2017 and January 2018
- Baseline phase in April and May 2018 (report submitted, presentation at previous AESC Meeting
- Ongoing longitudinal study from July 2018 to June 2019 – 8 more months

5 Provinces, 30 Communities

Provinces

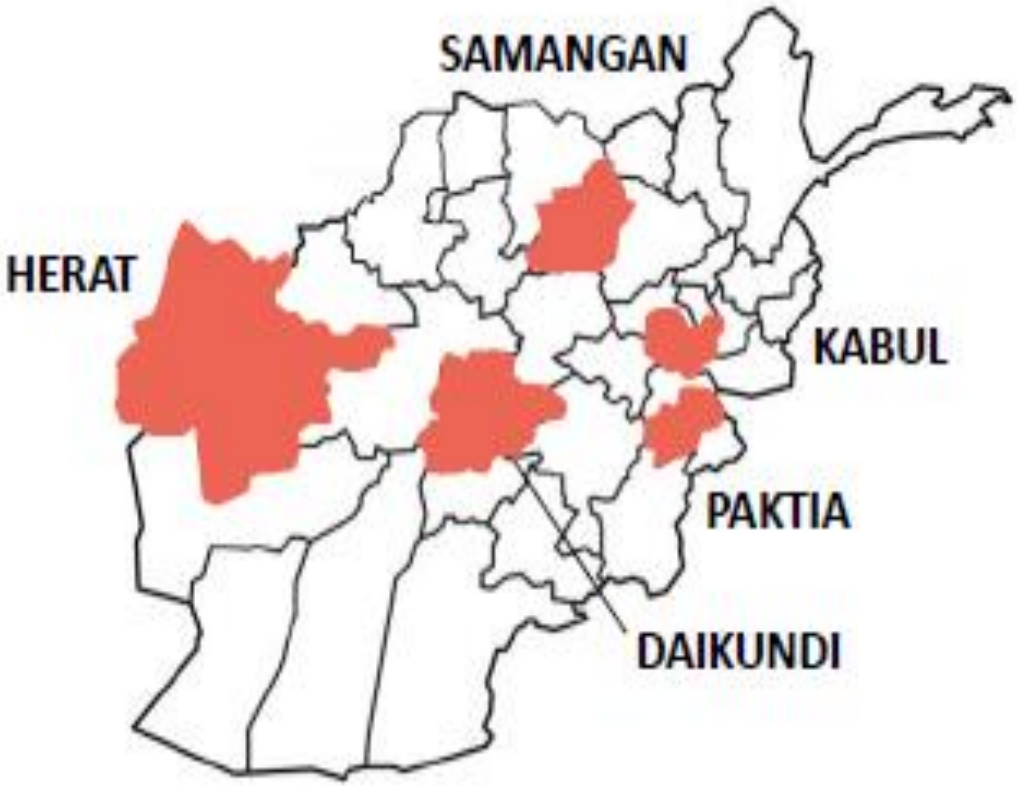
- Cover a range of energy profiles

Communities

- Urban / peri-urban / rural
- Different districts within the provinces

Kabul Example

- Langar in Qarabagh District (rural village)
- Sar-e Tapa, Karte Naw (urban)



Daikundi

Chamkani District, Paktia

Langar, Kabul

Jebraeel, Herat

Dynamic Change

Micro-grids?

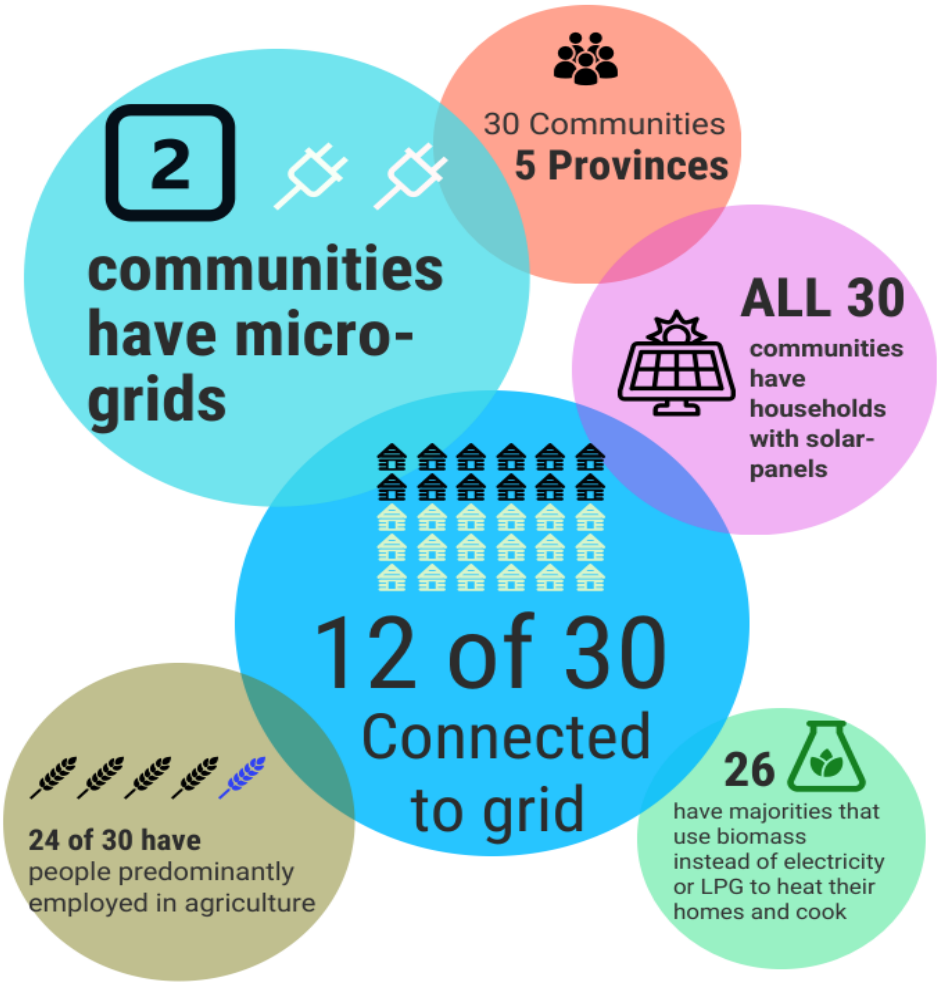
- Parts of Dasht-e Barchi connecting to the grid meaning the mini-grid provider there (big diesel generators) has ceased
- Deh Yahya also connected during the last 4 months

Seasonality, solar, appliance usage

- Quality of the solar in Afghanistan right now? We know from IFC Lighting Afghanistan presentation at a previous AESC meeting that it is not high
- Early findings on asset usage

Heating and cooking?

- Biomass, LPG (stoves), fuel purchases



Call Center – Diary Phone Surveys

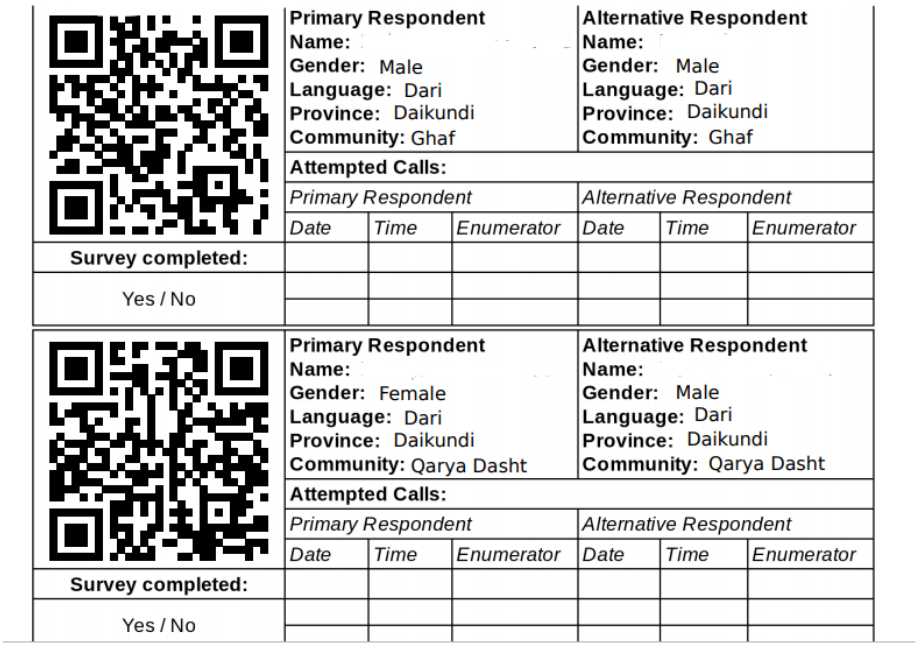
- Up to 3300 surveys per month, data on previous week's usage
- Overall, attrition has remained low with response rates exceeding 85% across provinces and demographics
- 1 Community Focal Point (CFP) in each community – explaining the benefits of ongoing participation to understanding energy patterns in Afghanistan, also contextual reports from the field (e.g. Samangan CFP reporting on increased gas prices during protests in July)
- Samuel Hall set up call center. Hired and trained 8 full-time enumerators making calls to participants. 1 call center manager.

Call Center – Diary Phone Surveys

- **QR codes**
  Using QR codes and pre-loaded survey information for a tailored and detailed survey

- **Pre-loaded info:**
  (a) the electricity source from previously (solar, grid, generator).
  (b) appliances (whether they have a fridge, tv)

- **Linking**
  Directly links survey into the database so we can track changes over time



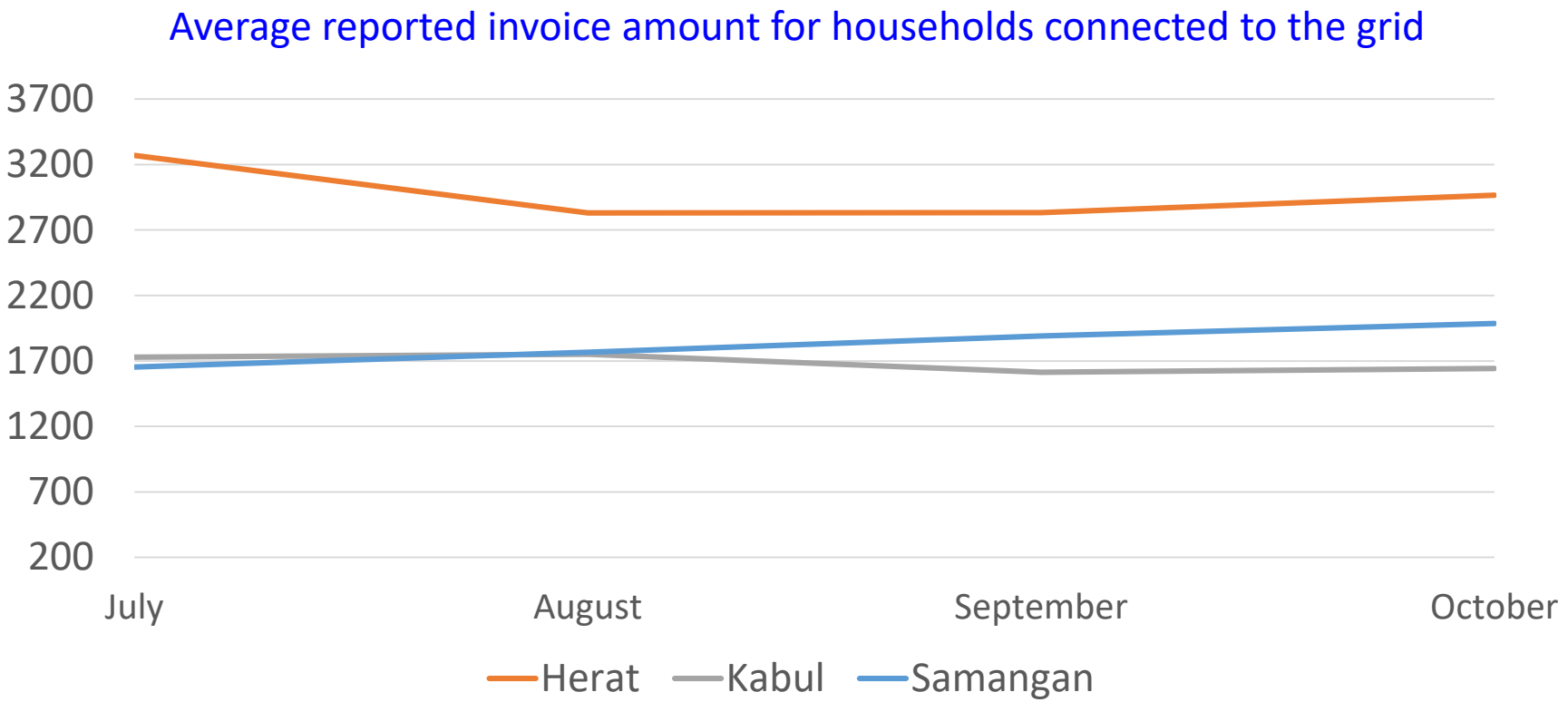
	Primary Respondent **Name:** **Gender:** Male **Language:** Dari **Province:** Daikundi **Community:** Ghaf			**Alternative Respondent** **Name:** **Gender:** Male **Language:** Dari **Province:** Daikundi **Community:** Ghaf		
	Attempted Calls:					
	Primary Respondent			*Alternative Respondent*		
	Date	*Time*	*Enumerator*	*Date*	*Time*	*Enumerator*
Survey completed:						
Yes / No						

	Primary Respondent **Name:** **Gender:** Female **Language:** Dari **Province:** Daikundi **Community:** Qarya Dasht			**Alternative Respondent** **Name:** **Gender:** Male **Language:** Dari **Province:** Daikundi **Community:** Qarya Dasht		
	Attempted Calls:					
	Primary Respondent			*Alternative Respondent*		
	Date	*Time*	*Enumerator*	*Date*	*Time*	*Enumerator*
Survey completed:						
Yes / No						

Seasonal Case Studies – In-depth qualitative tool

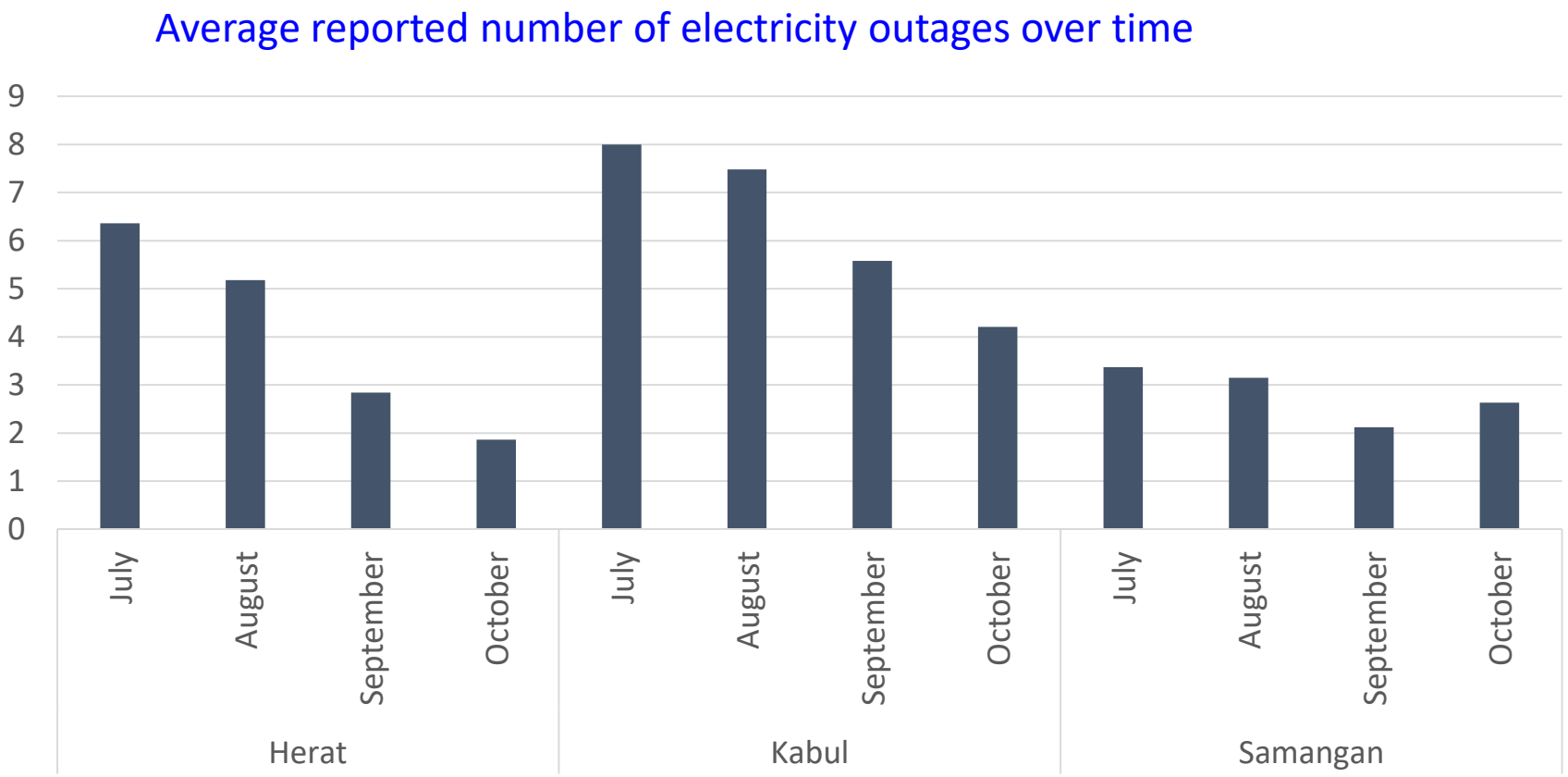
- Tool designed to derive a richer understanding of the social and health impacts of energy, as well as a clearer picture of household energy usage dynamics
- Revisiting the 10 households once per season, speaking with different members of the family on their energy pattern perspectives

Preliminary data – Grid invoice amounts



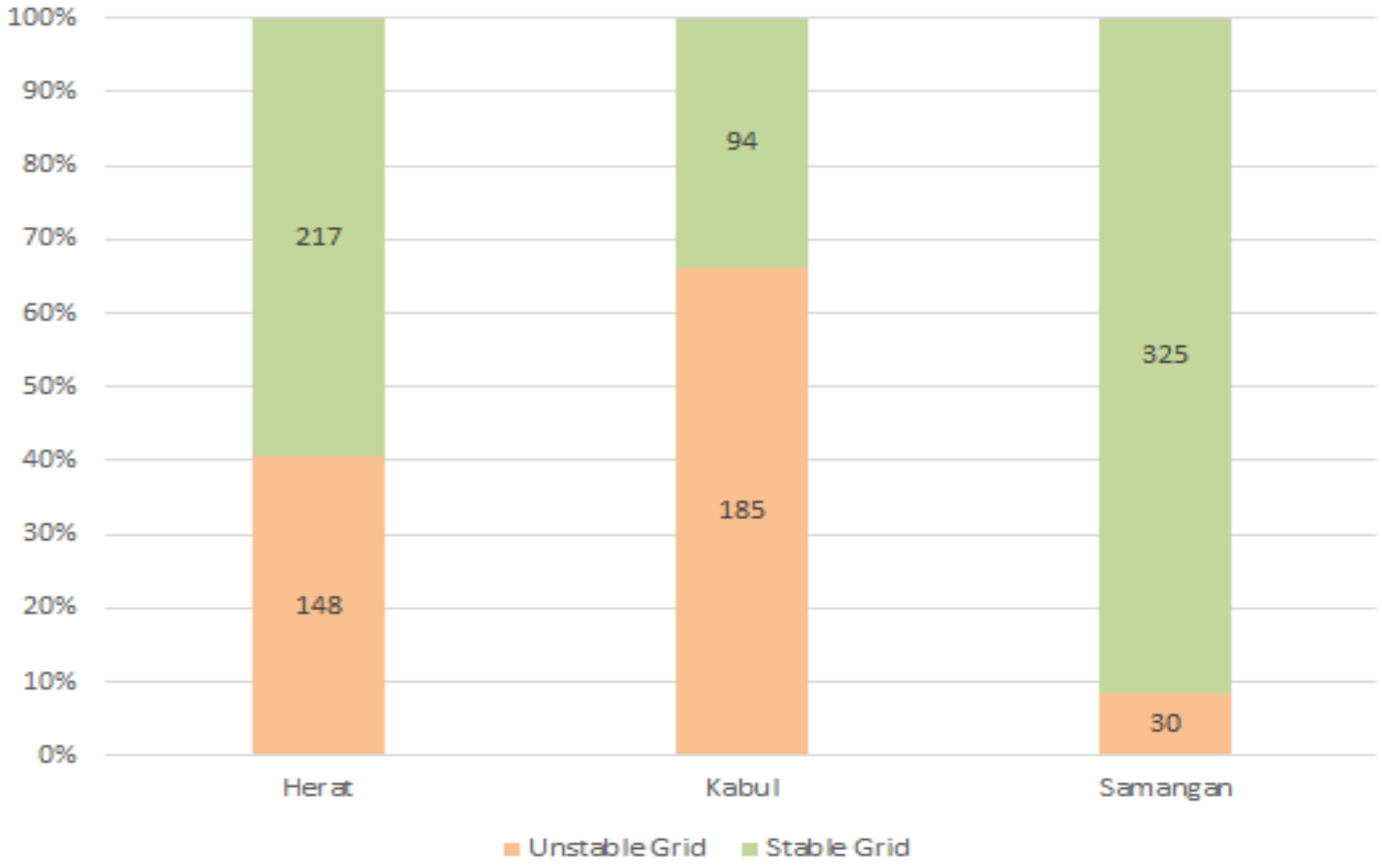
The mean across all three electrified provinces remains quite steady at AFN 2,260 in July, AFN 2,150 in August, AFN 2,130 in September and AFN 2,200 in October (approximately US $28-30 in all months) and an average of AFN 2,185 across all four months.

Preliminary data – Number of outages per day



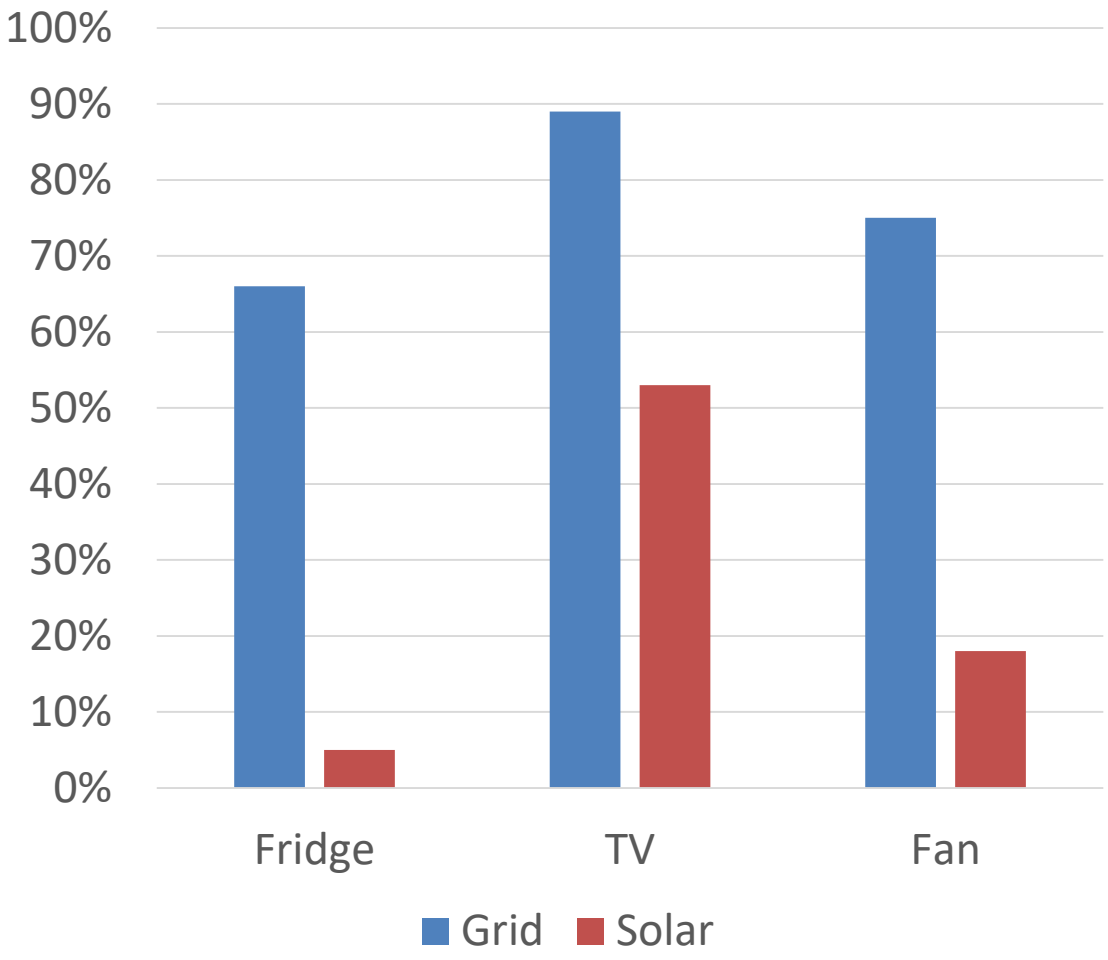
Preliminary data – Stability of grid

Stability of grid by province (# of interviewed households)



Preliminary data – Appliances by grid / solar

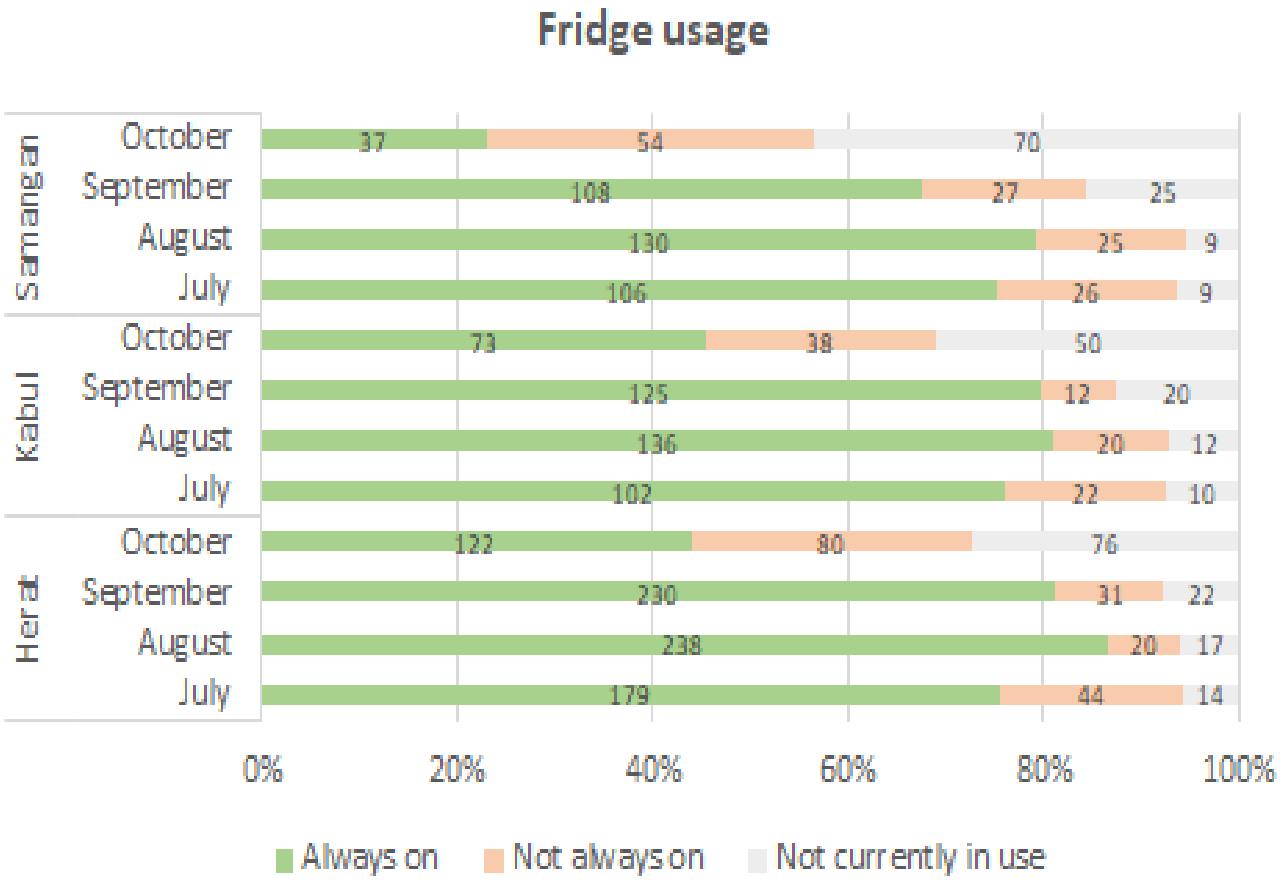
% of grid or solar connected households surveyed with different appliances.



"With good electricity, we can use washing machines, we can use refrigerator to keep our foods fresh in summer, in hot weather we can use air conditioners, fans and we can use water boilers too. And also, in winter we can use electronic heaters instead of Sandali which can keep the temperature for long time. But now since we don't have good and enough electricity we can't use such things."

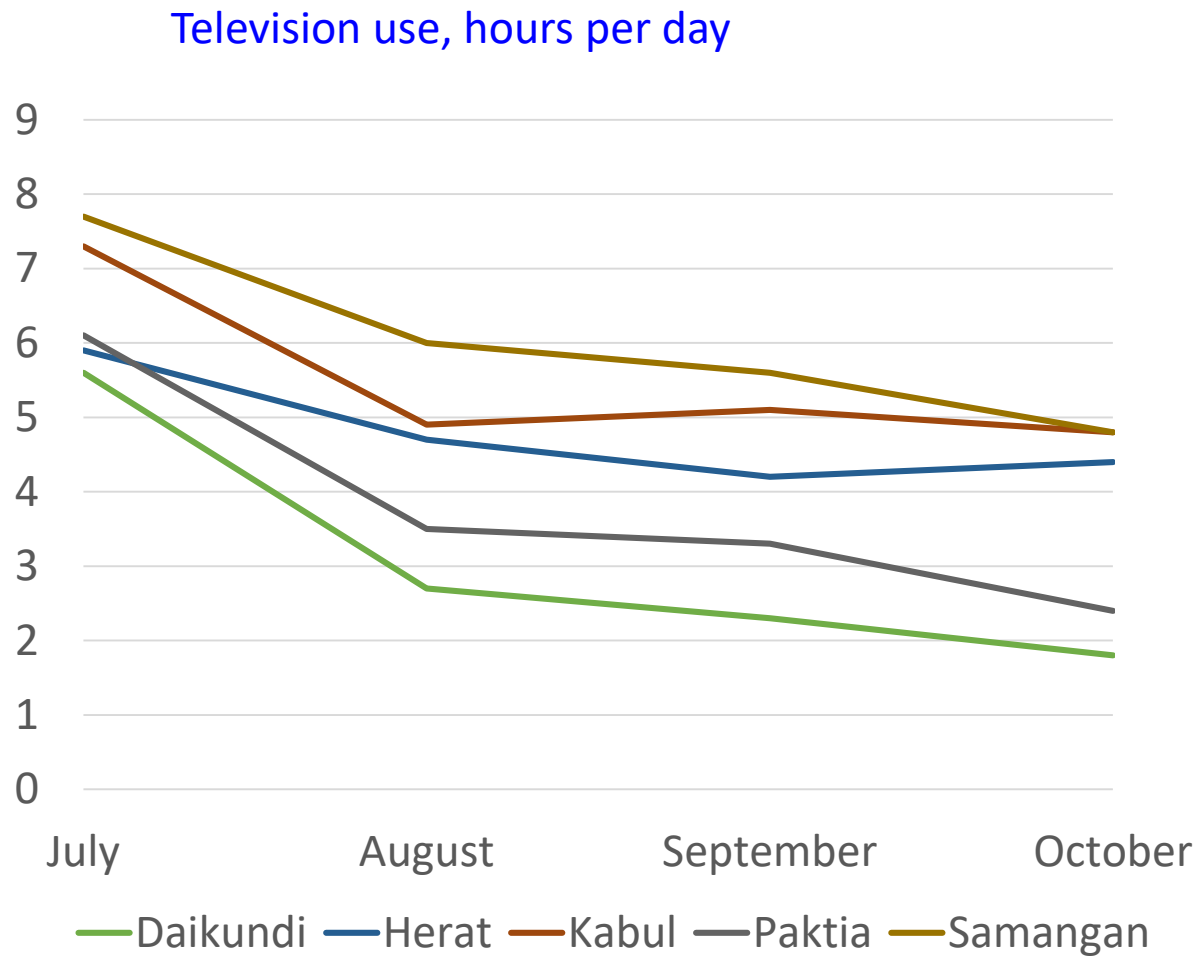
Female community members in Langar Village, Qarabagh District, Kabul Province

Preliminary data – fridge usage



Participants noted food not spoiling as easily stating that the colder weather, especially at night, meant they no longer had to store food in the fridge.

Preliminary data – Television usage

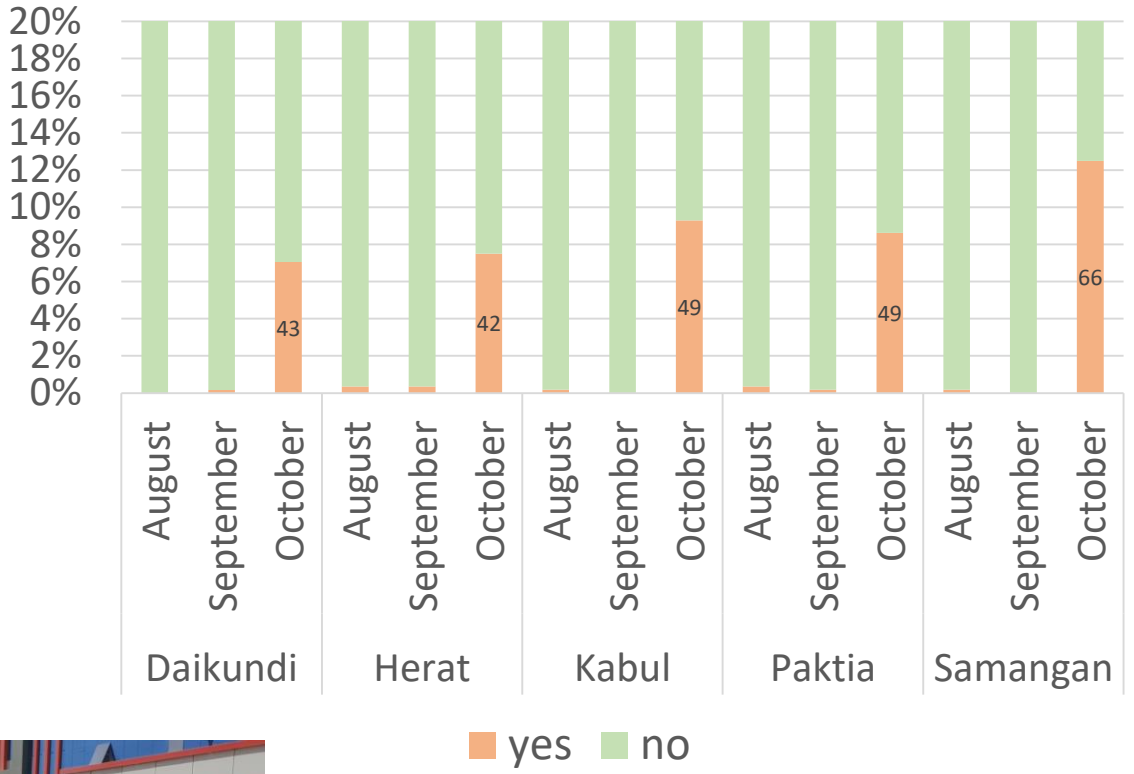


Herat and Samangan, with high grid penetration rates still held higher numbers of television hours with 4.4 hours and 4.8 hours in October respectively. In contrast, Daikundi, with only solar electricity supplied households, fell from 5.6 hours of television usage in July down to 1.8 hours in October.

This indicates significant unmet demand. The low capacity solar generation means that households with solar cannot run appliances that households with grid can, and the appliances they can run are used far less in October than in July

Preliminary data – Fuel for heating

% of households spending money on fuel for heating



Twigs and brush for fuel – Aybak, Samangan

Looking forward, next steps

- 8 more rounds (months) of the call centre diary phone surveys. Looking for trends through winter, and then in the warmer months
  - More collaboration e.g. with DABS and MEW. 1 example = kWh usage for grid
- 2 more seasonal case studies (winter and spring)
- Analysis of the large amounts of data
- Key results, findings → In-depth and contextual understanding of the energy sector in Afghanistan

Month	December 2018	January 2019	February 2019	March 2019	April 2019	May 2019	June 2019	July 2019	August 2019
Data Collection									
Call Center									
Seasonal Case Studies									
Analysis and Report Writing									
Final Report									
Key Deliverables									
Submission of Data								x	
Final Report Submission								x	
Dissemination									x

Thank you!