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To: [REDACTED]
From: [REDACTED]
Date: 100911
Re: A-0053 Review of ACEP Report

I have completed my first pass review of the Afghanistan Clean Energy Program (ACEP) Afghanistan Energy Efficiency Assessment Report, July 31, 2010.

Focus: The report can be edited to make it a good basis for implementing a Demand Side Management (DSM) Plan for Afghanistan. We need to confirm that that is the purpose. In its current state the focus of the document is fuzzy. The title would have to be revised to make this plain. I suggest, "ACEP: A Demand Side Management Plan".

Demand is power. It is not energy. The relationship is $\text{Energy} = \text{Demand} \times \text{Time}$ ($\text{kWhr} = \text{kW} \times \text{Hr}$). The authors of the report should always state this correctly even though in common verbal usage the terms are often confused. References to Energy Efficiency (EE) detract from the focus of the report and would have to be edited. EE seeks to reduce energy consumption, not necessarily demand. There are many instances where watts are incorrectly described as units of energy consumption.

Outline: The Table of Contents needs to be edited to make it a coherent outline for the report. A suggestion:

Executive Summary

Section 1 The Status of the Afghan Energy Sector

- A. Sector Organization
- B. Main Sector Characteristics
- C. The Power Supply Situation
- D. The Power Demand Situation

Section 2 Demand Side Management

- A. The Case for DSM

- B. DSM Program Element Selection: Assumptions, Limitations, Schedule, Methodology, Options, Screening, Results
- C. Constraints and Barriers
- D. Implementation Plan

Appendices

Executive Summary: An executive summary should never be more than two pages long. Currently, it runs on for five full pages. It should, in theory, have one paragraph for each of the major subheadings in the Table of Contents. The highlight of the executive summary should be the five DSM programs that are being suggested for implementation.

The transition from screened program elements to programs chosen for implementation is not clear in the report.

Footnotes: Sources for all quoted data should be footnoted. The body of the report starts off, “Afghanistan has one of the lowest...Congo...Rwanda” A footnote to document where that piece of data came from would add credibility to the report. There are many other examples. Embedding the sources in the document itself, “Based on the latest statistics, as provided by...”, makes for cumbersome reading and should be avoided.

Lamps: The report talks at length about lamps. It talks a lot about compact fluorescent lamps (CFLs). Cut sheets of the recommended CFLs should be included in an appendix. Information about a decent CFL has been added to the end page of this memo. Note the quad base, not an Edison screw base.

There are few technical errors in the report. I noticed that power factor (PF) correction to 0.98 is recommended. Given the block size of capacitors against a varying load and the economics of PF correction, correcting past 0.95 at the consumer side is never recommended. Correcting if the PF is already at 0.90 or better is never recommended.

A lot of basic editing is needed:

1. The document headings should be formatted and numbered. This will also allow for automatic TOC creation and updating.
2. Pages need be numbered and more complete headers and footers added. The report name, date and author should be on every page.
3. Exhibits, diagrams, tables, etc., should be named by Section and part; Table 1.A.1, and not sequentially through the entire report.

4. CFLs are lamps. The authors should not be describing them as bulbs despite common verbal usage.
5. Information is repeated more often than necessary and takes away from the impact of the report. It also makes it difficult to use the TOC to locate where in the report a piece of information was placed.
6. The math to arrive at results should be included as footnotes in the report. If 10,000 solar hot water heaters are expected to reduce electrical system demand by 10-MW then the calculation; $10,000\text{-SHW} \times 1\text{-kW/SHW} = 10\text{-MW}$ should be in the footnote. The footnote should go on to explain that to achieve this result all SHW installations would have to operate coincidentally at the time of peak demand. Otherwise, load coincident factors should be estimated.

I thought that a description of the major types of recommendations would be more useful than a 'track changes' file mark up at this point in the editing process. I would be happy to work with the reports authors to further refine the report and eventually work finer editing into a finished product.

I would like to discuss the timeline for working on the review of this report. The original work order timeline would need to be amended. Please call me at [REDACTED] at your convenience.



Philips 134874 PL-T 42W/830/4P/HTA Alto Triple Tube 4 Pin Base Compact Fluorescent Light Bulb

42 watt 120 volt PL-T 4-Pin (GX24q-4) Base 3,000K Triple Tube High Temperature Application ALTO Compact Fluorescent Light Bulb (Philips PL-T 42W/830/4P/HTA ALTO 134874)

<http://www.google.com/products/catalog?q=compact+fluorescent+lamps+four+pin+base&hl=en&cid=13561411059121322127&ei=skOLTIyHA4ju2ASFhuzWDQ&sa=title&ved=0CA8Q8wIwATgA#p>



C: