Energy Efficiency for Energy Access: Latest Trends and Innovations (Webinar)

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Introduction

- First a bit about me.
- Fosera background:
  - German based manufacturer of solar home systems
  - Manufacturing plant in Thailand, we also have assembly lines in Ethiopia, Keny and soon Liberia
  - Also manufacture LED lamps, accessories and efficient DC appliances such as fans, televisions, radios, torches and lanterns
- Foseras vision is to enable people all around the world to have access to the same energy services that we do, this requires low cost and efficient appliances.

DC Appliance Market

- DC appliances have conventionally been used by a limited number of niche off-grid applications.
- According to the GOGLA Off-Grid Solar Market Trends 2018 report, since 2010 there have been approximately 130 million solar off grid devices sold.
- And there is huge potential in this market for DC appliances. Occurring as consumers naturally start to seek out more complex energy services after basic lighting needs have been met.

R&D Efforts

- Fosera offers DC plug and play SHSs.
- To offer customers energy services that are low cost, we have been focusing efforts on designing highly efficient and smart appliances.
- For example or award winning 12 V, DC television consumes only 6.5 W for the 11 inch screen and only 12 W power consumption for the 24 inch size.
- Trend is to redesign appliances with aim of maximising efficiency **and** keeping costs low.

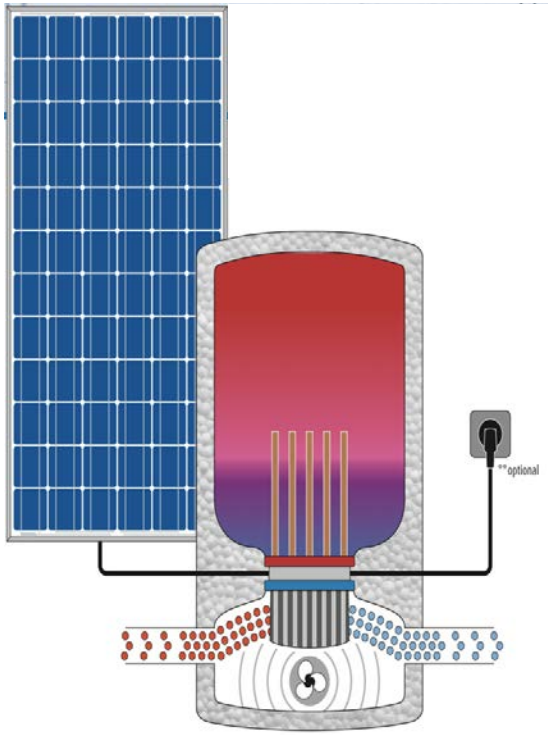
2015-16 Global LEAP Awards Finalist

CoolSun 60 Fridge

- The CoolSun 60 is a 54L DC powered fridge with a power rating of 45 W.
- To keep costs low, it has been designed with thermal storage integrated in the form of a phase change material (patent pending).
- Maximises use of solar energy and keeps energy drawn from battery at night to a minimum.
- Fridge has two modes:
  - A smart mode when combined with the fosera solar home system, maximises benefit of PCM
  - Manual mode for constant cooling to between 2°C and 8°C

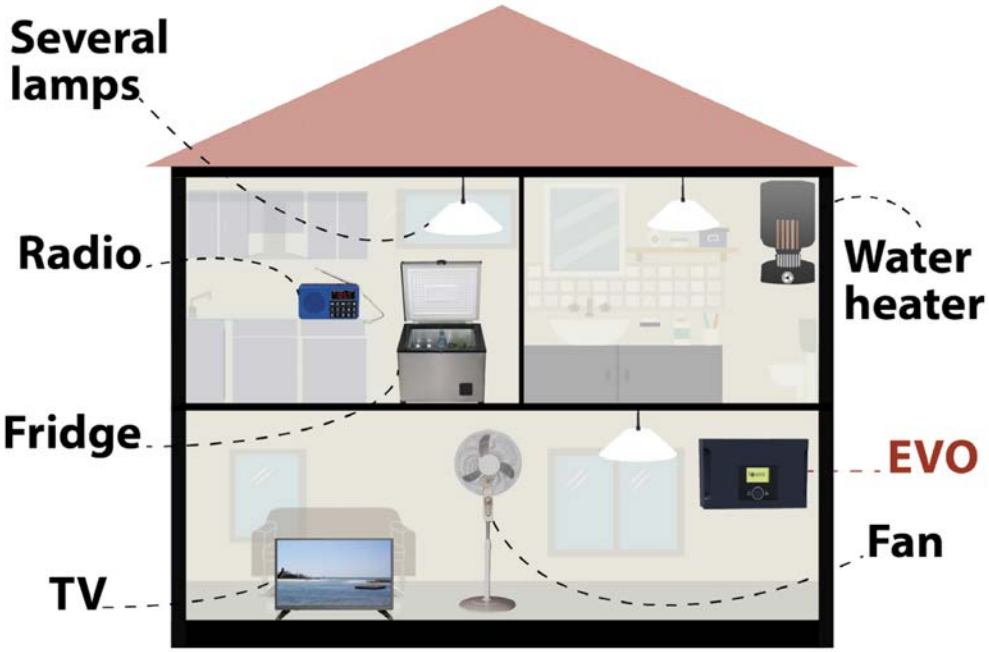
Clever Solar Hot Water

- Example of innovative solution from our partner company is Peltier element based solar hot water system.
- Semiconductor takes electricity as input (from solar)and produces heat cheaply!
- Insulated tank stores heat energy throughout night.
- Trend is to use novel methods of storing energy to reduce battery size and cost.



Evolution

- New range that is designed to intelligently manage appliances and smart loads such as fridges plus ability to scale in size.
- Evo range is made up of a hybrid lead acid and lithium ion battery.
- Option to grow and extend the system in several steps providing power supply similar to Western households with lower risk of debt defaults.



Productive Use and Cooking

- Increasingly important to focus on integration of productive use appliances with solar home systems such as sowing machines and solar water pumping and irrigation.
- The problem of cooking efficiently with solar power still needs to be solved.

Conclusion

Thanks for your attention!

Further information can be found at:

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