



Last Mile Learnings from the Philippines

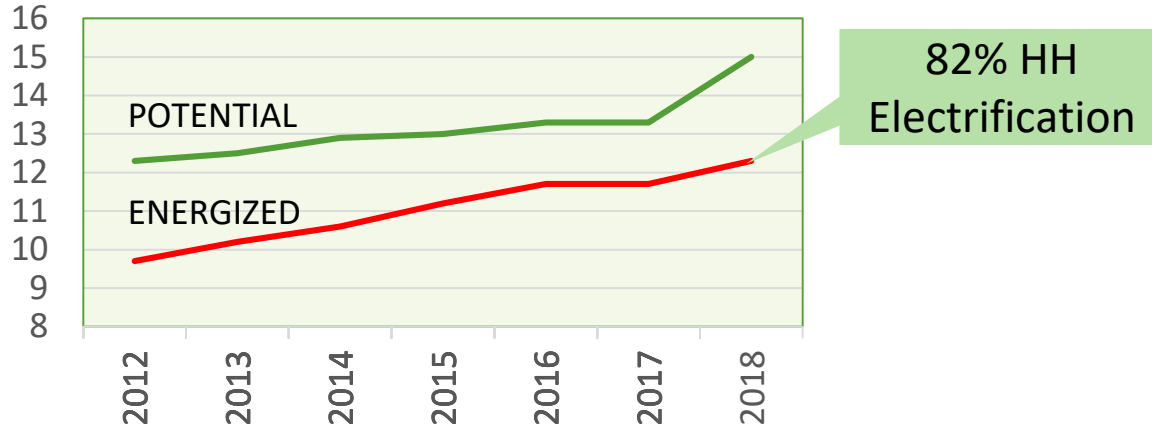
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Rural Household Electrification

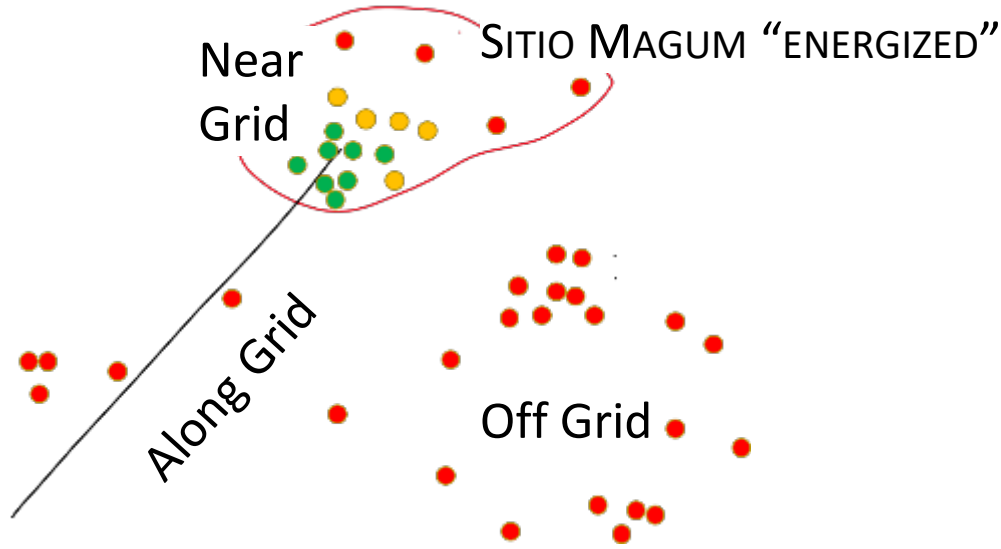
Millions



- Grid expansion under National Electrification Administration (NEA)/ Electric Cooperatives (ECs) Sitio Electrification Program (SEP)
- 37,000 sitios “energized”, 24,000 sitios remaining
- 2.7 million households still to electrify

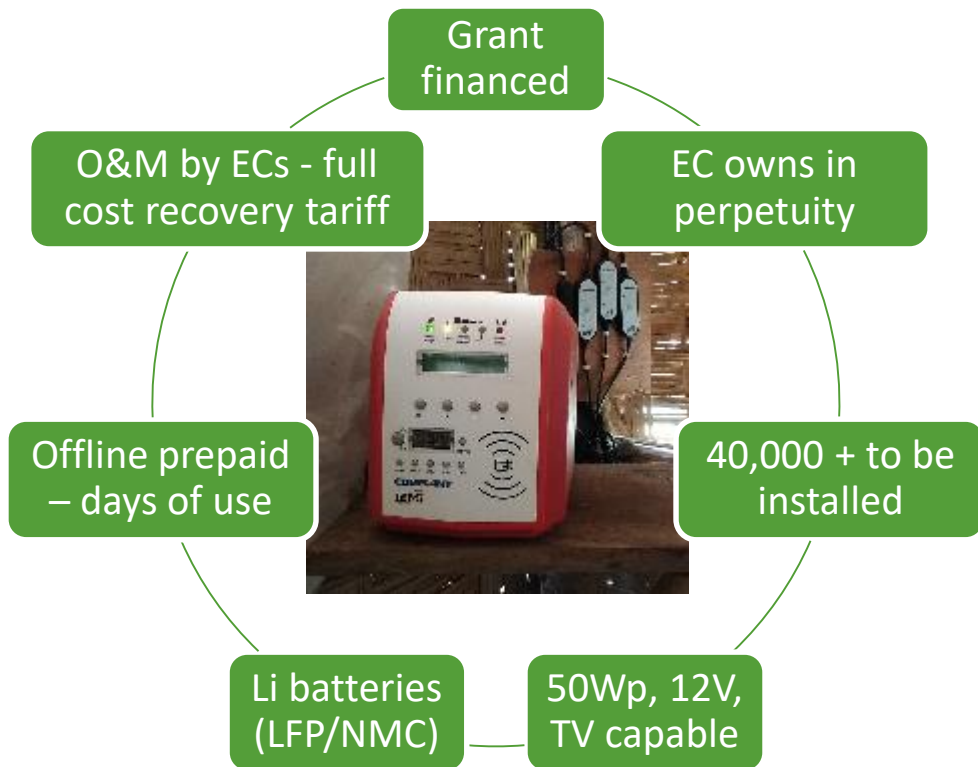


Unenergized Households

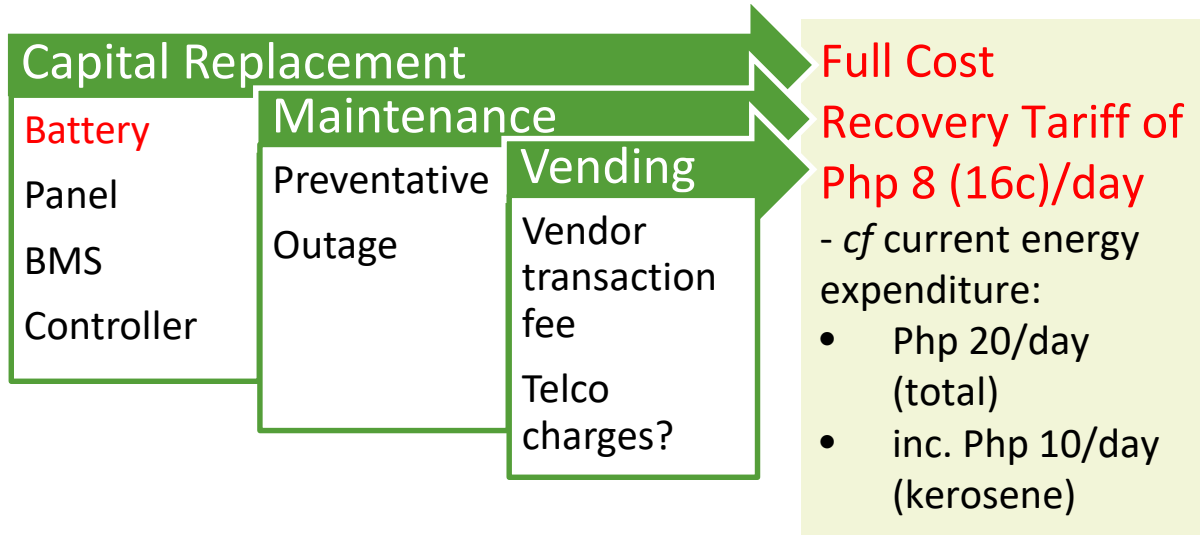


- How best to total household energize the sitio?
- Off grid standalone Solar Home Systems (SHS)
- Along and near grid SHS also
- Off grid mini-grid opportunities +/- productive use

EU/WB ASEP PV Mainstreaming



Solar as a Service (SaaS) Regulatory Model

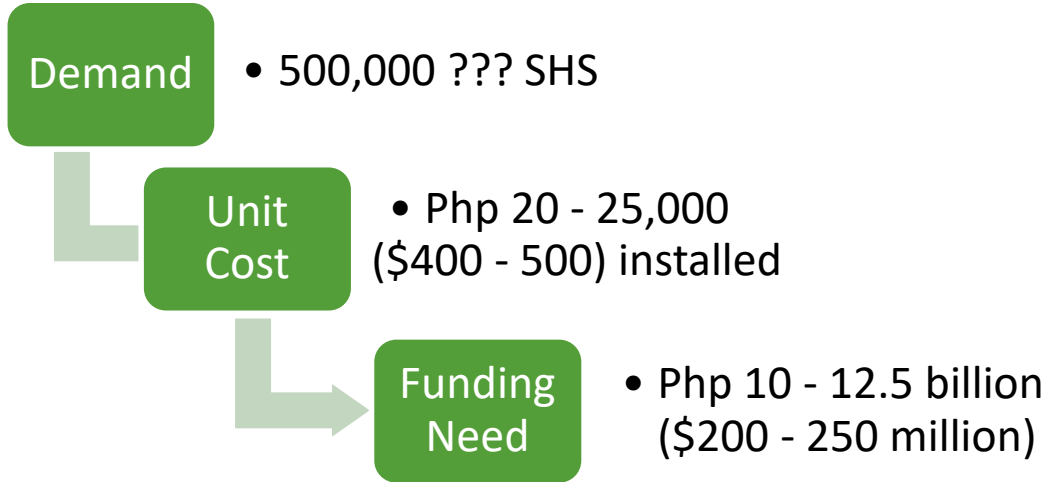


Rapid Technology Development

Critical Success Factor	Driver	Developments
Battery lifetime	Cell quality Cell matching Battery management	Cell chemistry Individual cell replacement
Low maintenance	Small component quality Community involvement	
Efficient 12V DC appliances	Consumer education Product channels	Global LEAP awards
Usage & condition monitoring	Consumer education Remote monitoring (GSM)	2-way RFID token LoRA

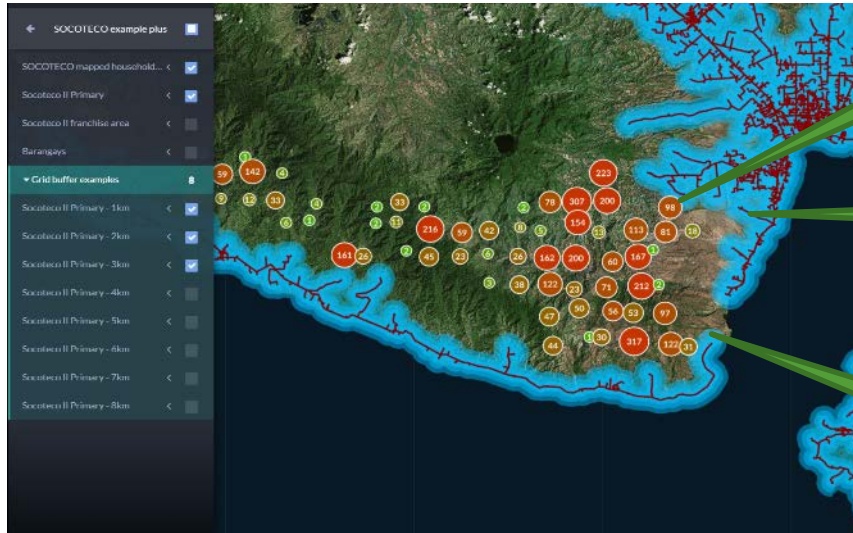


Sustaining PVM



- PAYG private sector as an option? (est. Php 20/day)
- Public private partnership needed
- Peru concession model (80% Government subsidized through trust fund)

RE4RE GIS Least Cost Planning Tool

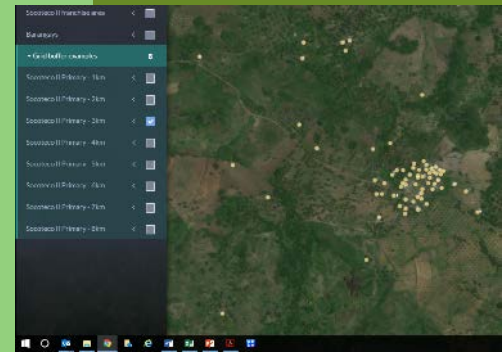
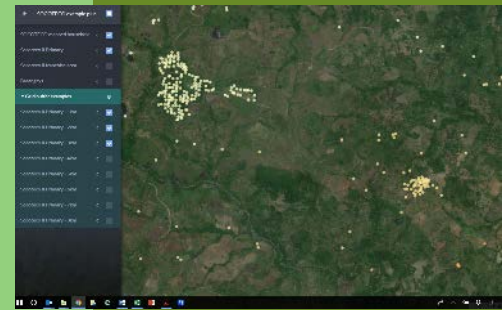
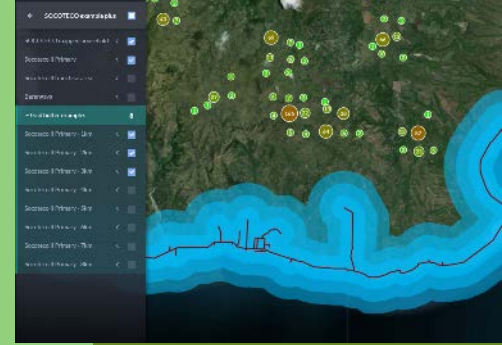


Household Clusters

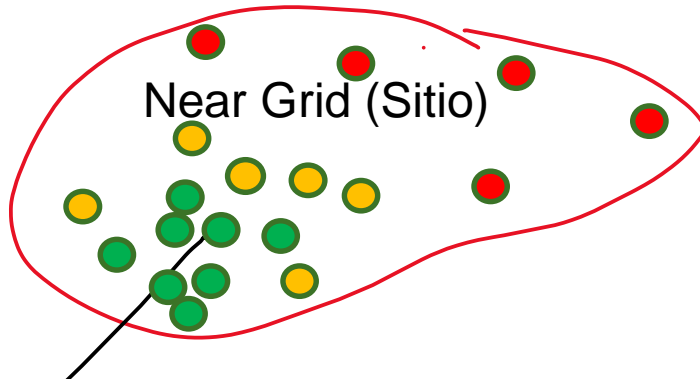
MV Grid

3km Grid Buffer Zone

- Overlay renewable resources (e.g. LIDAR, mini-hydro)
- Mini-grid opportunities abound – need standard replicable model – ideally with productive uses
- Distributed renewables for grid support



Sitio Lab – Grid Intensification



- Need mindset change – bottom up, customer centric, energy efficient appliance output needs approach
- Demonstrate innovative connection methods – e.g. ELV connection, juxtaposition of SHS, load limiters, prefabricated wiring looms
- Observe consumer reaction and adjust policy

Thanks!

Any questions?

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