



Small is Sustainable, and [Off]-Grid is Good: Microgrids Here, There, and Everywhere

Liveable Cities Lab
10 November 2021



Our Experience and Expertise

Clean Energy Solutions: Hybrid Microgrid, Off-grid, and Rooftop PV Solar Systems

Our Differentiated Strengths

Engineering Design and R&D

Project Development Activities

Procurement & Supply Chain Management

Construction Management

Financial & legal structuring



Builders and operators of
Sabang Renewable Energy
Microgrid, Palawan



Reaching even the farthest
Communities in SEA

Thought leaders and policy advocates:
Congressional resource for
Microgrids



Joint Venture Partnerships

Set Up for Excellence in Renewable Energy Solutions and Power Grids

Operational Companies



Investment Partners



Technology Partners



Our Presence Across South East Asia

Promoting growth and improving communities through sustainable electrification

Myanmar
Business Development Office
Rural Electrification
(RE Hybrid Microgrids)

Thailand
Solar Street Lights

Singapore Company
HQ Floating Solar
Study

Indonesia
Business Development Office
Rural Electrification
(RE Hybrid Microgrids)

Vietnam
Island Electrification
(RE Hybrid Microgrids)

Laos
River Turbines Study

Philippines
Business Development Office
Multiple Rooftop Solar Installations
Rural Electrification
(RE Hybrid Microgrids)



Rooftop Projects

Converting Sunlight into Savings



Taguig rooftop PV project



St Louis La Union



St Louis College Tuguegarao



St Mary's University



RCI College Rodriguez



St Louis College Cebu



St Louis College Baguio



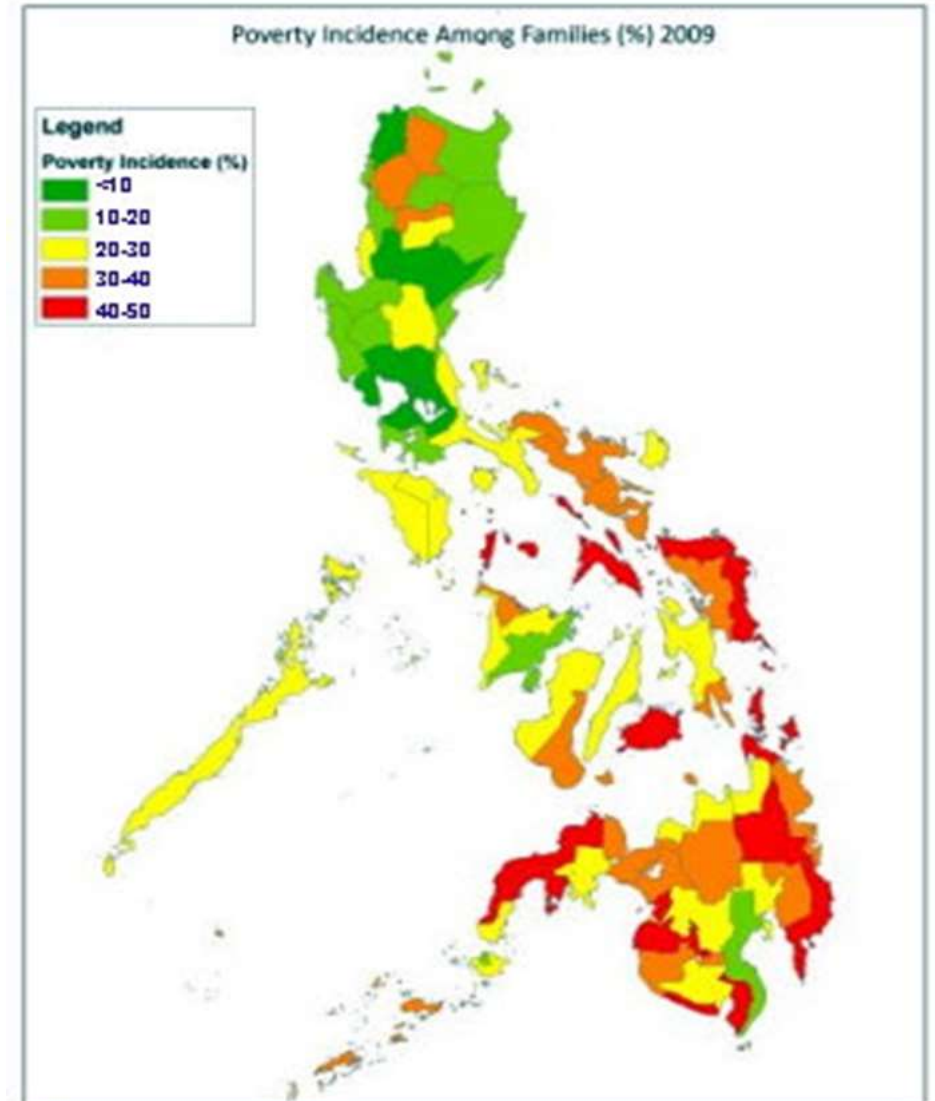
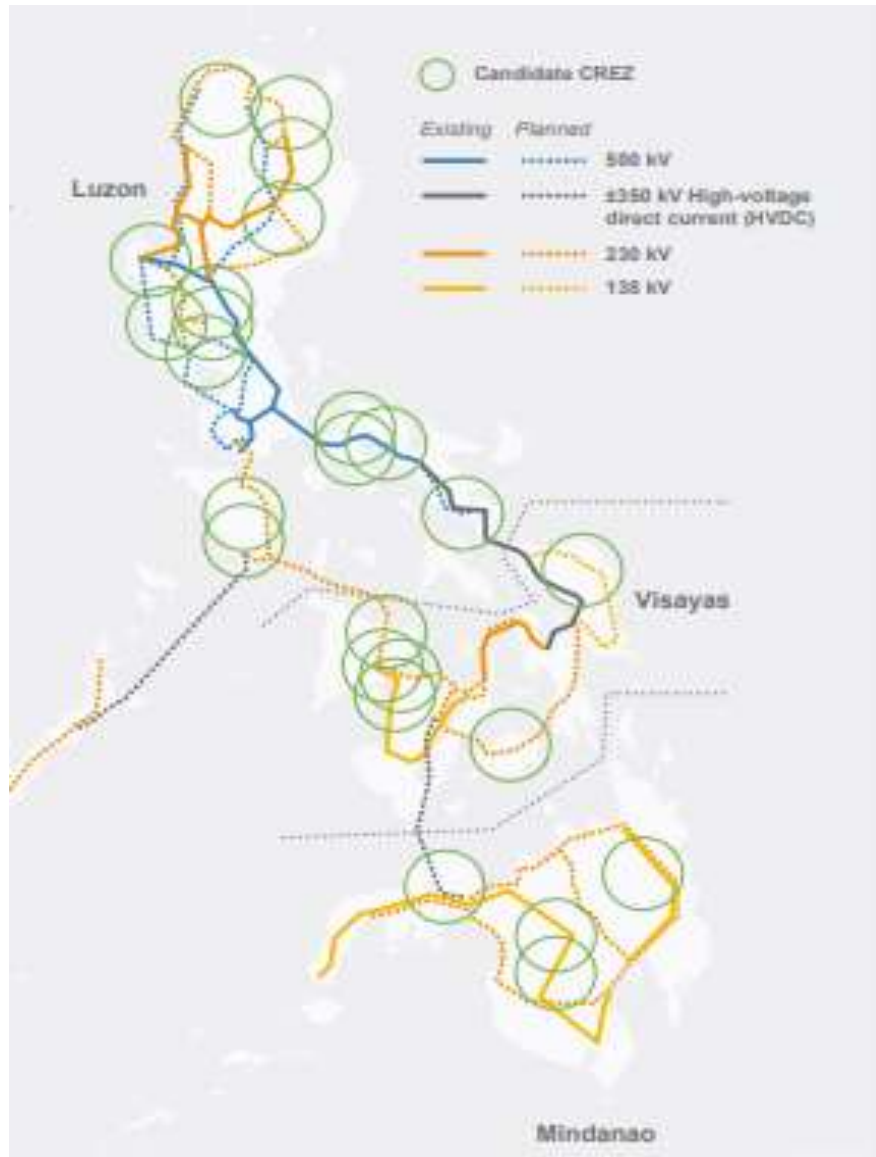
Baesa Warehouse Complex



Bounty Agro Ventures (ongoing)

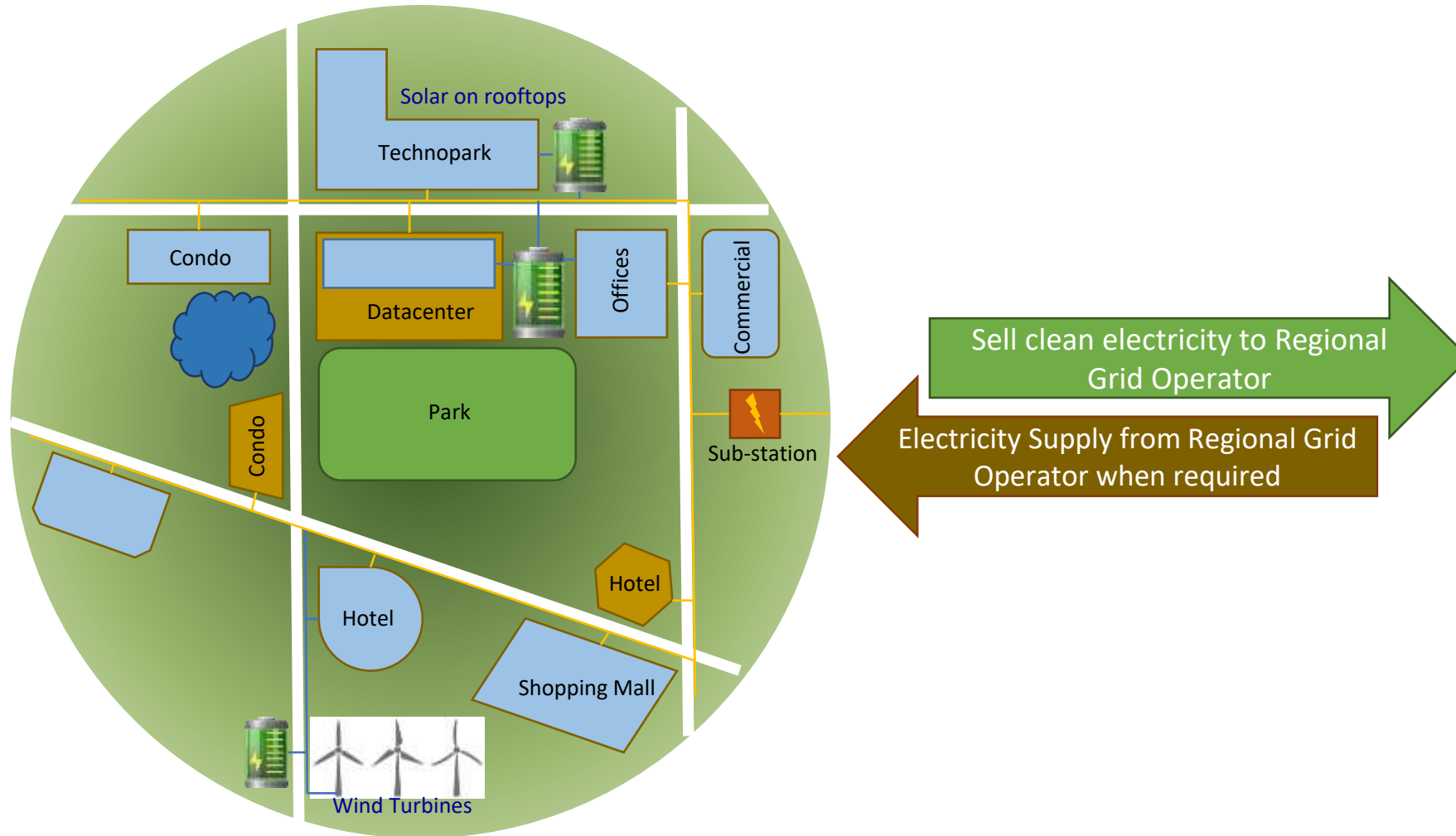


Ambitious Plans vs. Stark Reality



MICRO-GRID: NEW TOWNSHIPS AND INDUSTRIAL ESTATES

Distributed Solar PV – Battery Storage Systems – Diesel Generators – National/Local Grid Operators





Why not use this **free energy**

to generate clean electricity?



WEnergy
Powering Change

SUN, WATER, WIND AND ENERGY STORAGE: USE IT!

Micro/Meso Grids - Decentralize – Enhance Energy Resilience – Local/Global Management

Philippines

10 million people @ 400 – 500 islands/sites without access to power



Indonesia

50 million people or 12m households, > 1,000 islands/sites without access to power



Myanmar

40 million people @ 1,000 sites/islands without access to power

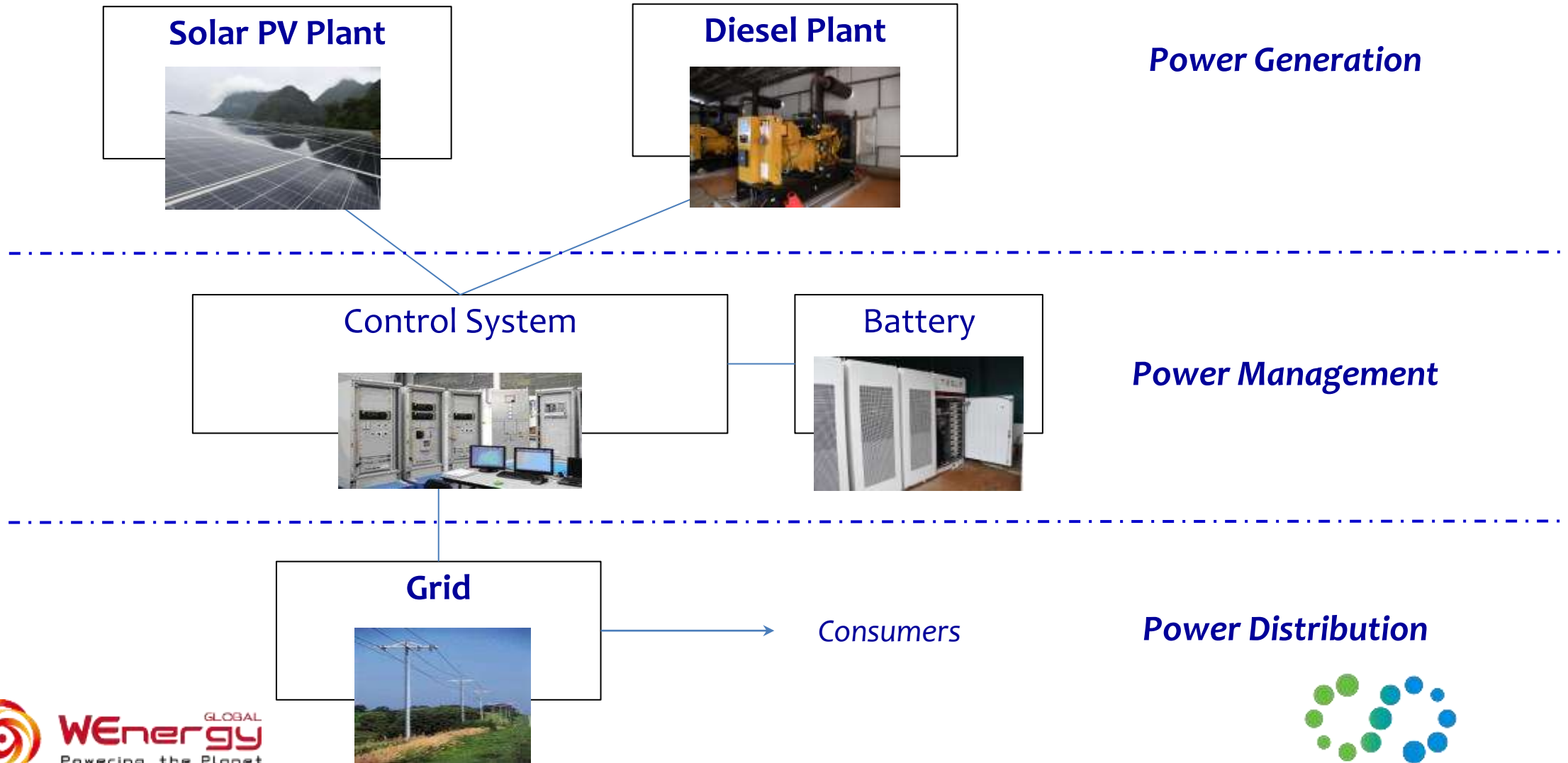


Benefits of mini-grid-based rural electrification



MICRO-GRID POWERED BY RE/DIESEL OR FULL RE

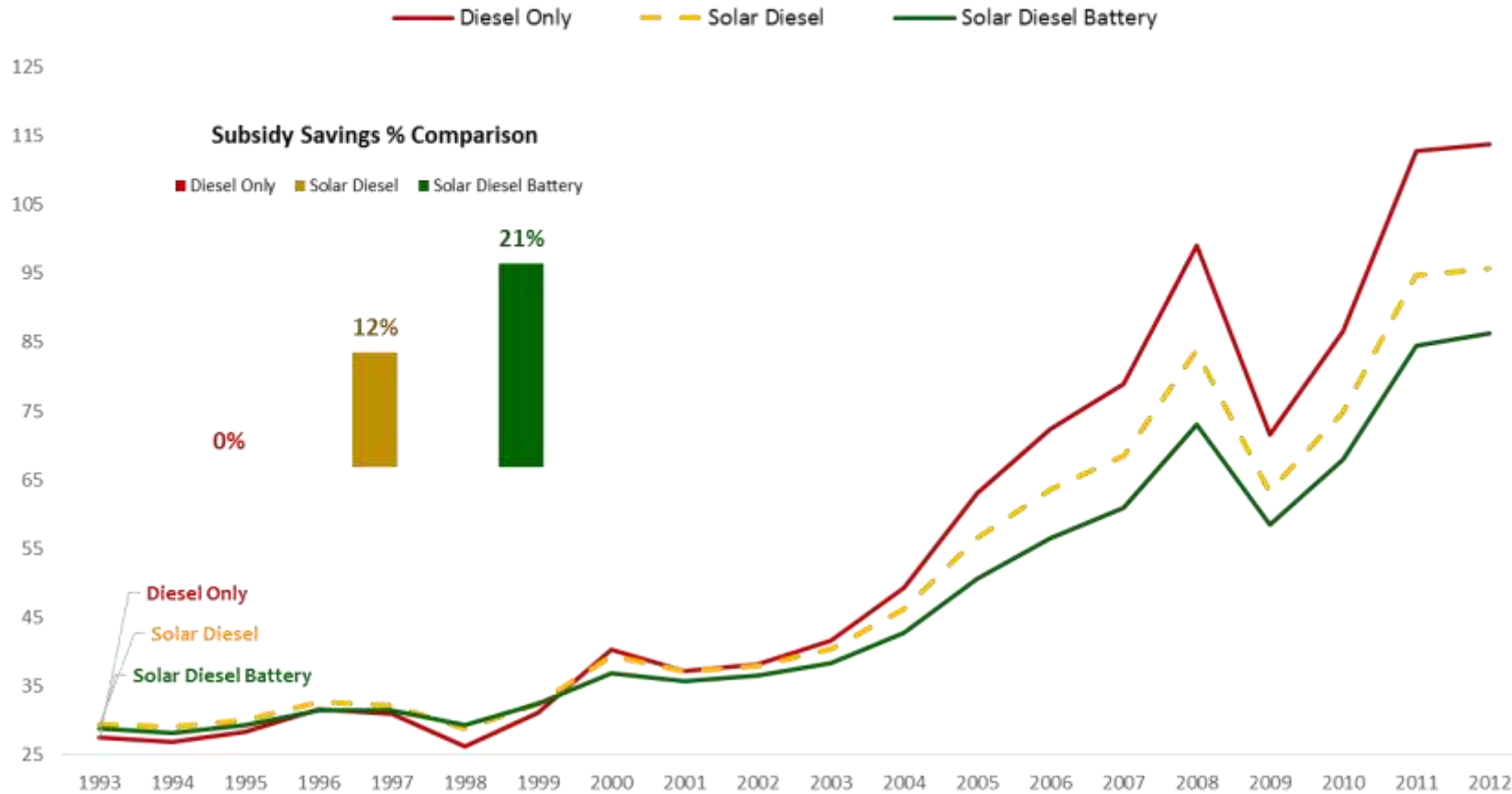
Decentralized, Replicable, Quick Power to Local Economy



The Hybrid Plant saves the most!

If the plant was built 20 years ago

FCRR Evolution 1993-2012 (Actual Historical Data)



Integration of Agriculture in SREC Power Plant

Converting existing non-productive land to produce clean electricity and food



Agri-Voltaics

Food Security, Land Productivity, Inclusive Development



- | | | | |
|---------------|---|-----------------|---|
| Ampalaya - | — | Pechay - | — |
| Bell Pepper - | — | Raddish - | — |
| Cucumber - | — | Siling Haba - | — |
| Eggplant - | — | Siling Labuyo - | — |
| Lettuce - | — | Sitao - | — |
| Okra - | — | Tomato - | — |
| Papaya - | ○ | | |

Project site: total of 4,030 m²
(3,536 m² along the panel and 494 m² on the surroundings) for food crop planting.

Philippines is ON!

SREC Project at COD since 21 August 2019 – meanwhile 560+ Consumers Connected to date!



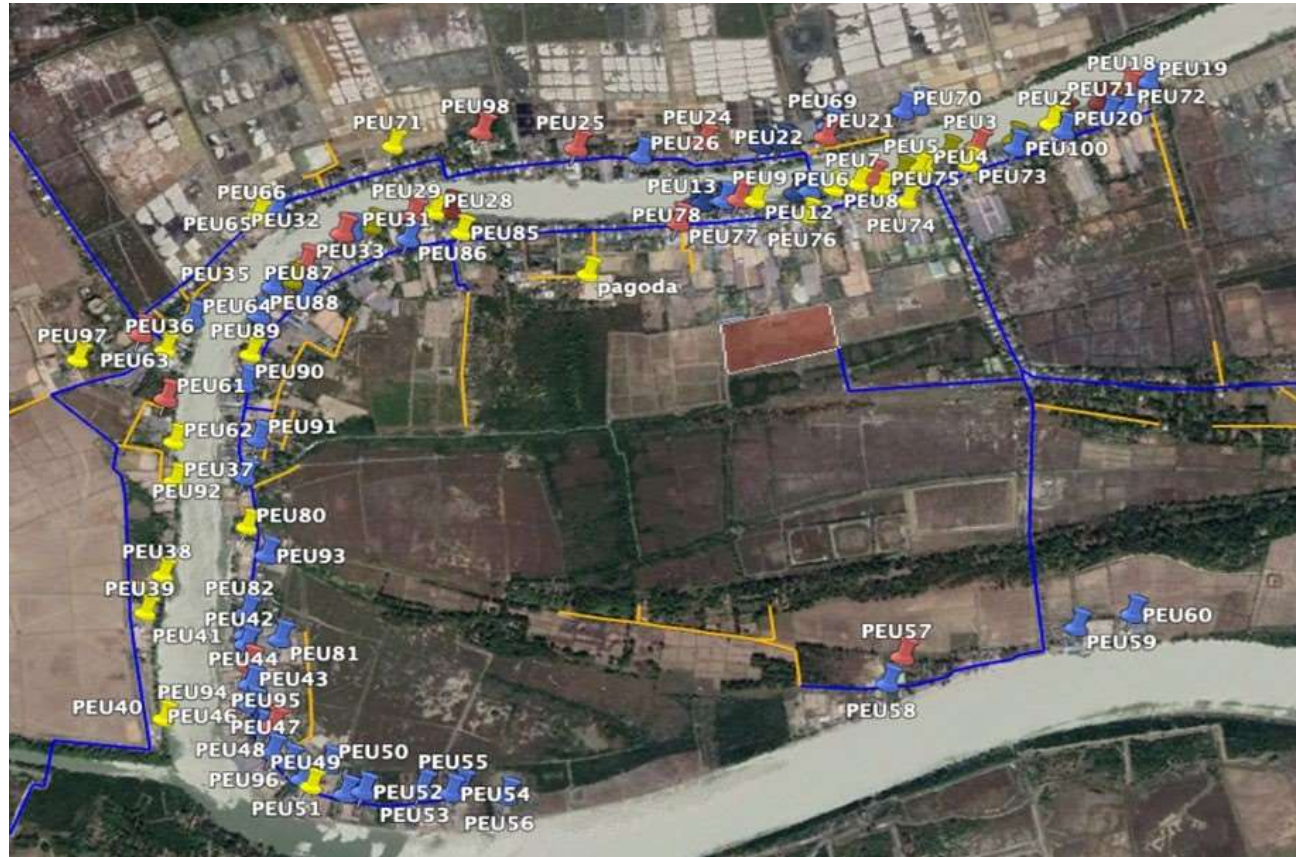
Pipeline In Development In Philippines

21 identified sites, of which 13 new microgrid projects likely for investments @ USD 40-45m



Opening Up in Myanmar

4 microgrids planned – 5,000 HHs – 500 SMEs – 13 MW Installed Capacity



Opening Up in Indonesia

Total of 33 MWp solar PV and 5,000 kWh BSS – saving 15 million liter diesel/year

Status of Project Development

- September 2017 – Pre-Feasibility study done with GGGI for 8 townships in NTT
- February 2020 – MOU with PT Adhi Karya to develop 8 townships signed
- November 2021 – Proposal submitted to PLN as initiator for 4 selected towns

	Site 1	Site 2	Site 3	Site 4
Solar PV	4.41 MWp	3.92 MWp	4.41 MWp	4.97 MWp
Battery Storage	669 kWh	669 kWh	669 kWh	669 kWh
Layout				



CREATING AN ENABLING ENVIRONMENT

For acceleration of micro-grids and private sector engagement

Government
Agencies



- ✓ Write new laws and regulations based on dialogue
- ✓ Facilitate reduction of transaction cost – better processes
- ✓ Provide effective project evaluation capacity
- ✓ Enhance competition/innovation for consumer's benefit

Financing
Institutions



- ✓ Update Technical Appraisal Framework and Risk Framework
- ✓ Review financing thresholds to enable small scale/big portfolio
- ✓ Build sufficient expertise and capacity
- ✓ Open up for multiple financing partners

Industry and
Technology



- ✓ Manufacturing: Minimum Order Quantity (MoQ) / back-end software
- ✓ Developers: enhance capacity to work in complex decision-making
- ✓ Technology System Integrators: stretch to get more RE in the mix, low cost
- ✓ Contractors: craftsmanship/accuracy, better supervision and safety





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