



Sunergise International - A Pacific Story

Manila 2017

Company Profile

Sunergise designs, builds, owns and operates solar power systems for businesses and communities.

Our customers get cheaper energy immediately, and see long-term savings grow as electricity costs rise

In four years, we have deployed 13MW of solar in the Pacific region. In 2014 we acquired Clay Energy, a Suva-based EPC provider with 15 years expertise in the region.

Area of Focus



SunAccess



The renewable, cost-efficient energy solution.



sunergise™



CLAYenergy



SunAccess.

	Reliability	Typical power limits / day	Range of electricity services	Maintenance
Solar Home System	> 4-5 hours/day depending on intensity of use	480 wh/day (no scale-ability as demand increases)	<ul style="list-style-type: none"> •4-5 lights only plus small DC appliance (e.g. TV/DVD) 	<p>Medium: Batteries are highly heat sensitive; risk thermal runaway in abusive charging conditions.</p> <p>Revenue collection challenging.</p>
SunAccess Microgrid	Up to 24 hours/day based on tariff level	100 wh 500 wh 1500 wh 2000 wh + (can upsize easily if demand increases)	<ul style="list-style-type: none"> •4-5 lights only •above + tv/radio •Above+ fridge •Above+ freezer 	<p>Low: <5% of capex per year; basic maintenance can be carried out by local with training</p> <p>Revenue collection and remote management taken care of by SunAccess</p>

SunAccess

SunAccess is a unique pay-as-you-go electricity solution for rural households that are currently supplied by village based diesel micro-grids

- SunAccess is a full service offering which involves retrofitting village micro-grids by financing, building, operating and maintaining a solar system and batteries that are coupled to an existing generator.
- Average system is capable of providing power 24/7, with approximately 87% generated by solar and batteries and 13% from diesel.
- Sunergise will retail power to households from the solar-battery portion of the grid at a pre-agreed daily rate, which on a per unit basis will be cheaper than diesel generation.
- SunAccess requires no upfront down payment on equipment - instead households pay a fixed daily rate.



Key projects

Nasau Village, Koro Island, Fiji

- 92 Households
- 9kWp Solar Panels
- 12kW battery Inverters
- 43kWh Battery Capacity
- Spark Smart Meter prepay billing system

Nasoki Village, Moala Island, Fiji

- 53 Households
- 12kWp Solar Panels
- 18kW battery Inverters
- 40kWh Battery Capacity
- Spark Smart Meter prepay billing system

SunAccess - Community Engagement

An engaged community is more than a customer



No Business Model works without understanding the customer need

Factors we considered

- Commercial Activity
- Impact of Electrification
- Maintenance & Support
- Communications capability

Remote...



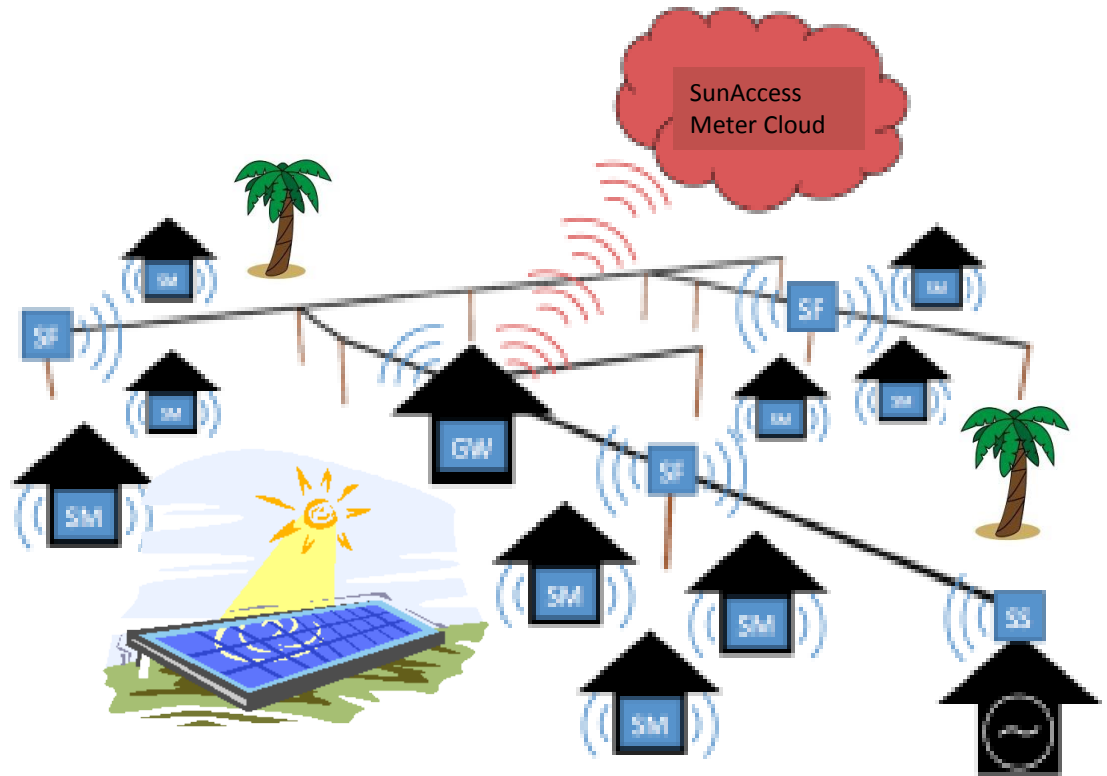
SunAccess: A Smart Solar Micro-Grid

Gateway (GW): Centrally located network controller and data backhaul to the cloud

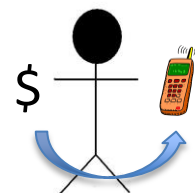
Signal Forwarders (SF): Mounted at the top of utility poles to increase range of local network and enable communication between gateway and meters

Smart Sensors (SS): Transmit power flow and state variable measurements

Smart Meters (SM): measure and actuate customer loads; communicate bi-directionally with the gateway



Vendor



Prepaid Metering Platform

1. Flexibility is key.

Pre vs Post Paid. In our case we currently use it only as pre-paid .

Tariff composition

Static Load limit

Remote monitoring, connect and disconnect

Locally autonomous

SunAccess offers a range of tariff and service levels on a pre-payment basis, using a daily fee.

SunAccess sells credits to local vendors through our remote management interface, who in turn sell to customers.

Customers pay vendors (in cash or electronically) for an agreed-upon number of credits, and the vendor transfers those credits from his vendor account to the customer's account.

Customers are free to transfer credits amongst themselves by jointly visiting a vendor and requesting that the transfer be made.

Challenges - Rate Structure -

Month 1 : 53 Users

Month 3 : 25 Users

20% of the Users account for 80% of the consumption

Initial rate structure was flat fee of FJD\$22 per month – High user drop off

New rate structure : Designed to be inclusive and reduce drop offs

	\$ per month	Max Watt
Light	\$10.00	100
Med	\$22.00	500
Heavy - Cons	\$30.00	1000
Heavy - Bus	\$60.00	1500

Challenges - Economic

1. Low consumption – lag between electrification and consumption capability – not enough
2. Inefficient devices – No LED lights, antiquated appliances
3. Leading to a viability Gap for operators/ Developers

PPP approach

1. Grants lead to low lifespan of equipment
2. Operators / Developers have a vested interest in ensuring that the Systems continue to operate

Radisson Fiji

Fiji, Denarau Island

460 kW



Host: Carlson Rezidor Hotel Group, one of the world's largest and most dynamic hotel groups

Impact: The system will produce 597 MWh of renewable electricity annually, and help avoid the importation of 175,000 litres of diesel per year

Milestone: This installation is the Pacific Islands' largest roof mounted solar power system for a resort

REGULATORY ENVIRONMENT

Uncertain – Still in its infancy in the Pacific Utilities initial reactions are :

1. **Fear of loss of revenue**
2. **Guardianship**

“Every year we monitor our carbon footprint and energy usage as we improve on it. Collaborating with Sunergise gives us the opportunity to put our commitments into action. We are now able to enjoy savings on our total power bill, and to share our solar credentials with our guests.”

Gerard Knight

General Manager of Radisson Blu Resort Fiji Denarau Island

Capability Gap

Port Vila, Vanuatu



Client: Vanuatu Government

Funding UAE Pacific Partnership Fund

Diesel Annual Savings: 324,537 litres (est)

CO2 Avoided Annually: 896 tonnes

Capability

13MW in 5 year local pacific staff, survived two cyclones
50 pacific based f stafworking in 6 countries
Focus on growing more capability

FREE FLOW OF CAPITAL

560_{kw}

Client: Roosters Poultry

Funding: Sunergise

Diesel Annual Savings: 324,537 litres (est)

CO2 Avoided Annually: 896 tonnes



Access to Finance

Enabling environment to encourage FDI

Free flow of funds

1. Debt Markets
2. Guardianship
3. Renewables have a longterm impact on balance of payments

Development Benefits

Diesel Displacement : For every 50KW of SunAccess projects, we directly offset 30,000 liters of diesel per year

Employment creation : Local maintenance team, vendors, installers, supply chain service providers and logistics

Upscale of the pilots will enable SunAccess to turn hundreds of village-based diesel microgrids into solar hybrids, with extended cost savings

Local expertise can be leveraged to create **opportunities for employment** throughout the region. Solar is a growth industry worldwide

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