

*One with Planet, People  
and Progress*

**HYBRID SOLAR MINI-GRID  
PILOT PROJECT  
MALALISON ISLAND, CULASI,  
ANTIQUE**

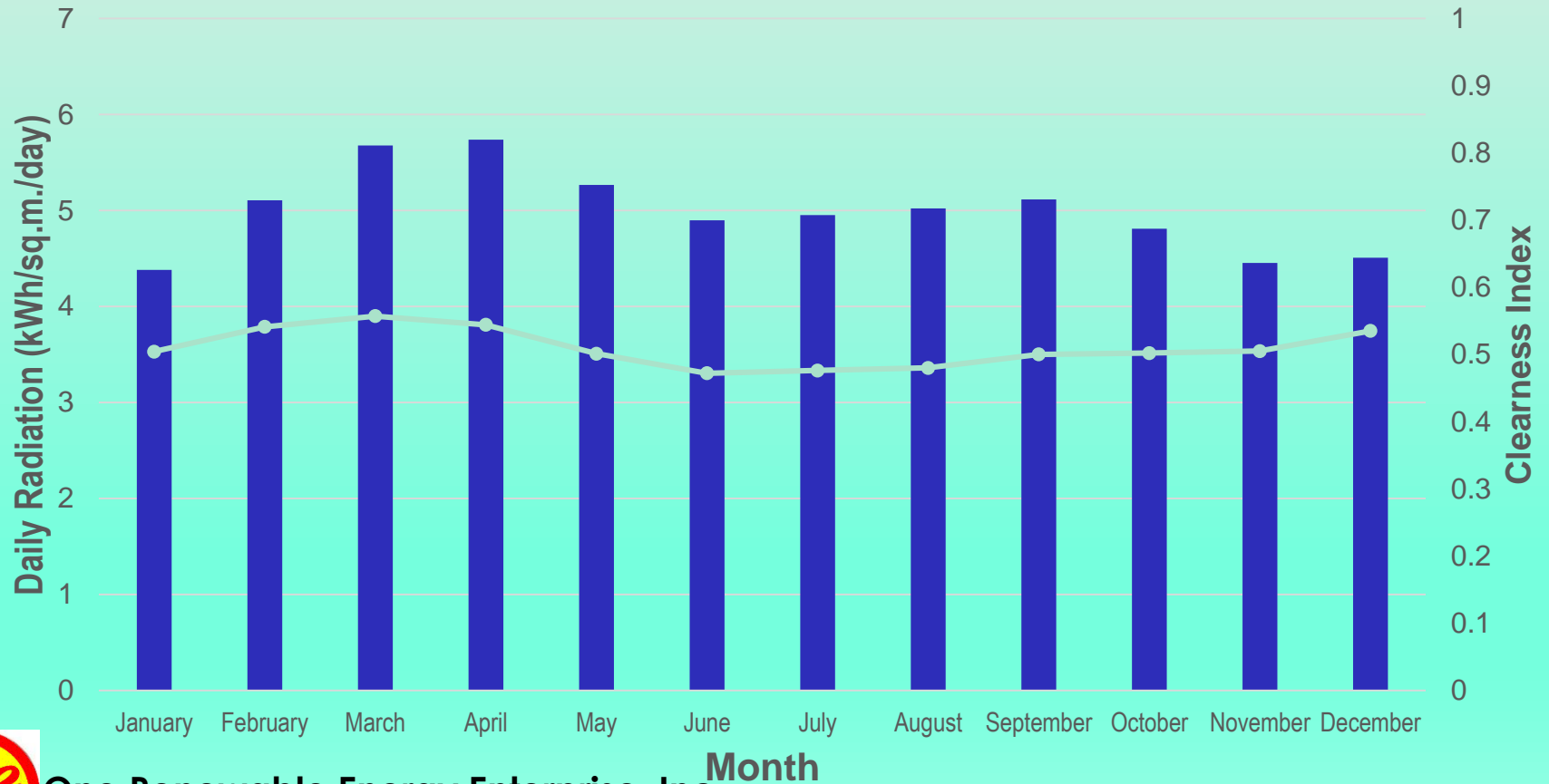


One Renewable Energy Enterprise, Inc.

# SOLAR RESOURCE

## Monthly Averaged Insolation Incident On A Horizontal Surface (kWh/m<sup>2</sup>/day)

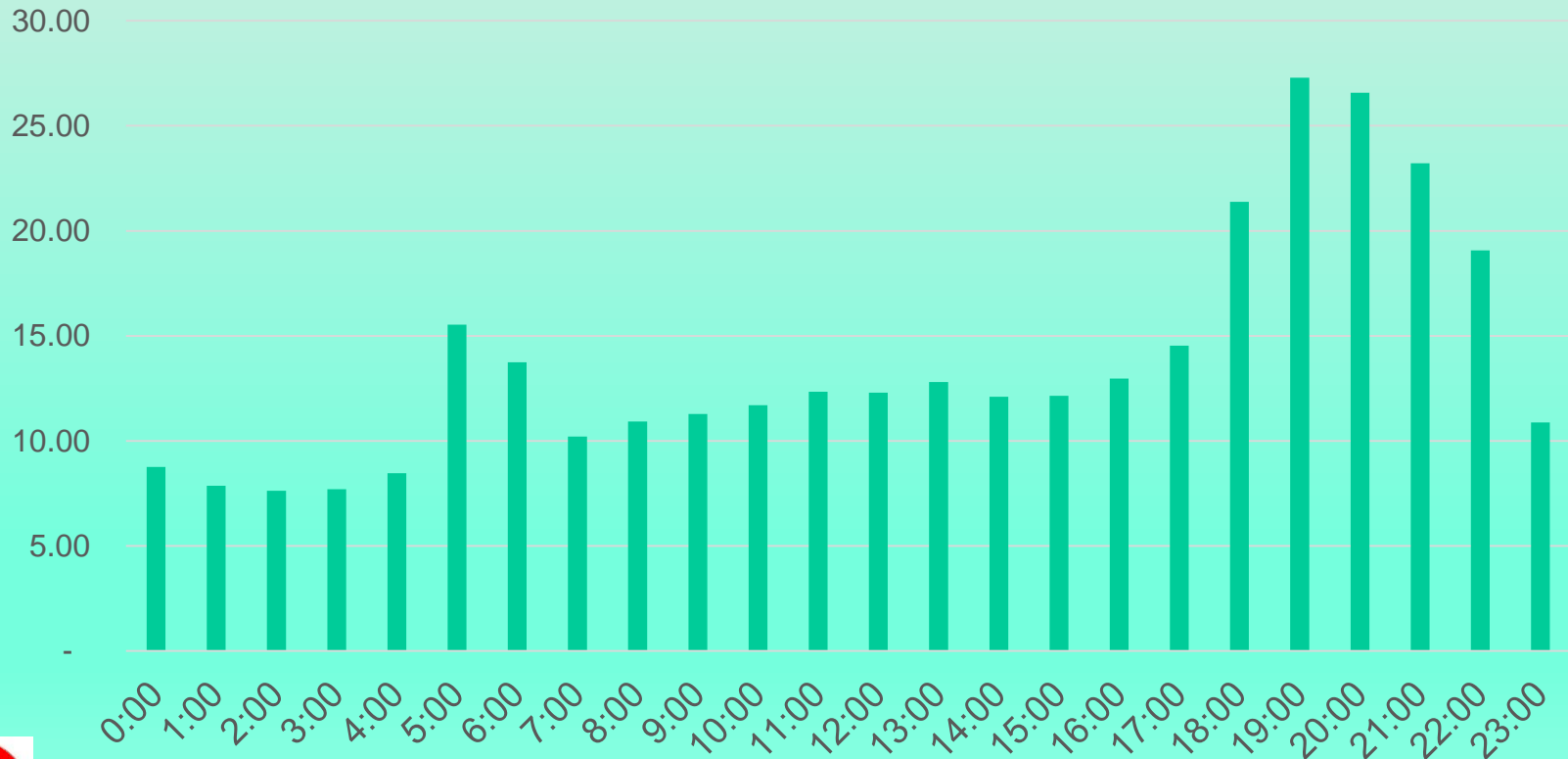
Island	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	ANNUAL
Malalison Island, Culasi, Antique	4.71	5.4	6.11	6.49	5.73	4.95	4.59	4.55	4.81	4.72	4.48	4.28	5.06



# LOAD PROFILE:

- **0.3 kwhr/day/HH** (current 144 connections, ave 4 hrs/day, ANTECO data 2015)
- **1.0 kwhr/day/HH** (projected 24hrs/day)
- **200 kwhr/day** (Ave projected total daily energy reqt for Malalison Island)
- **73,000 kwhr – Annual Energy Demand**

## PROJECTED AVERAGE HOURLY KILOWATT DEMAND



# HOMER™ SIMULATION RESULTS

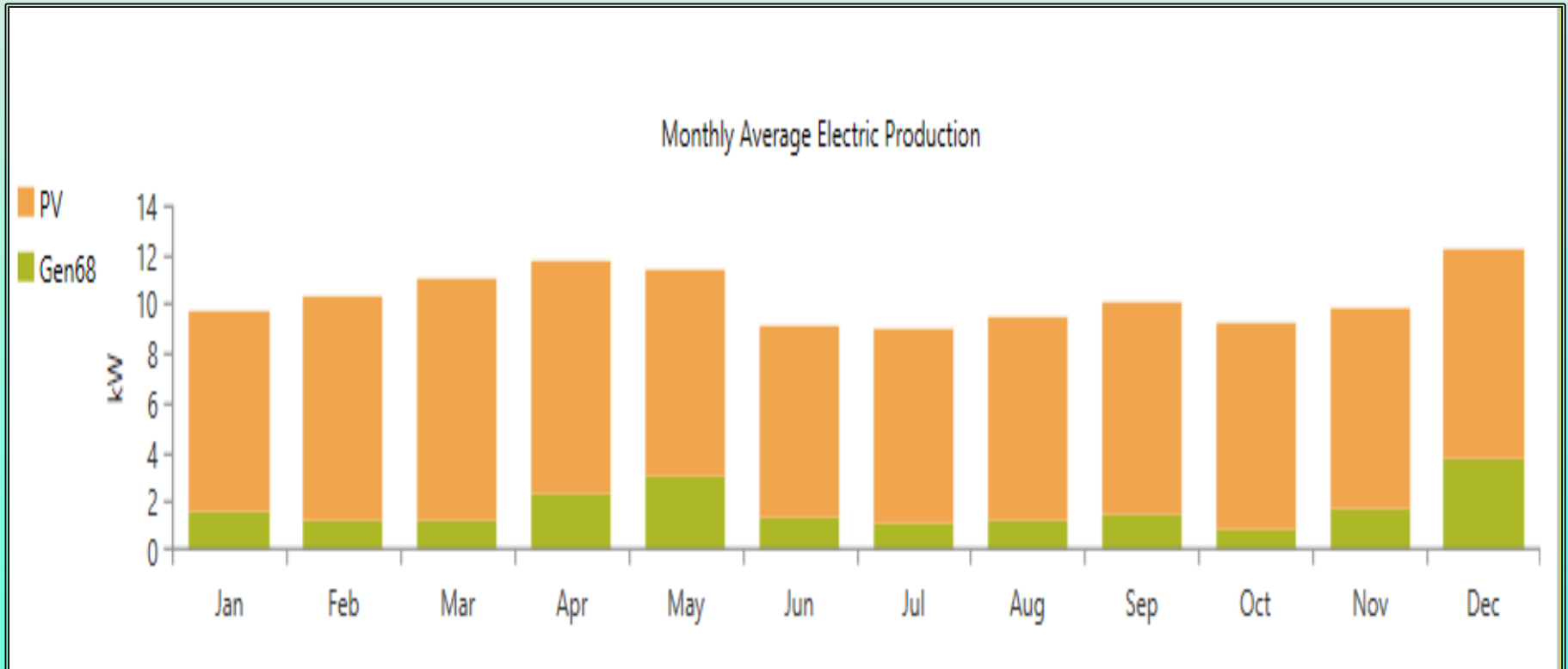
## ENERGY PRODUCTION:

**SOLAR PV PLANT**

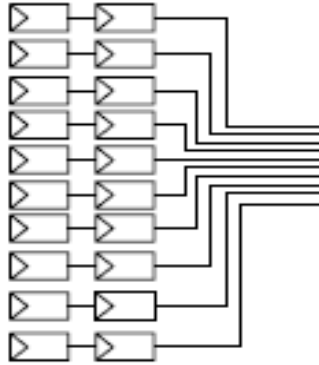
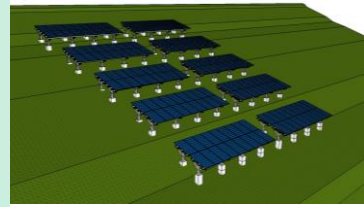
**: 82%**

**DIESEL GENERATOR**

**: 18%**



# SYSTEM ARCHITECTURE:



SOLAR PV ARRAY, 50KWp



DIESEL GENERATOR, 68KVA



POWER CONVERSION SYSTEM (PCS) 50KW

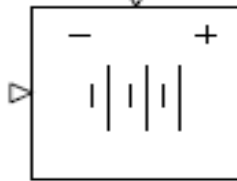


STEP-UP TRANSFORMER



LOADS

STEP-DOWN TRANSFORMER



LITHIUM BATTERY, 273KWH



# SOCIO-ECONOMIC BENEFITS OF THE PROJECT

- **Benefits to the LGU and Community**

- Reliable and continuous full 24/7 service
- Increase level of connection/service to more HHs
- Increased consumer satisfaction
- Increase and support livelihood and income generation activities (homestay, fishing, load retailing for pre-payment loads)
- Increased tourism industry (better accommodations, food services and amenities to guests)
- Availability of cold storage/refrigeration, increased safety/security and utilization of other appliances
- Increased employment
- Provide convenience and Improve standard of living



# SOCIO-ECONOMIC BENEFITS OF PROJECT

- **Benefits to ANTECO**

- Reliable and continuous full 24/7 service
- Cheaper operations
- Do away with cross-subsidies from mainland consumers
- Improved capacity to undertake other projects through hybrids in other island communities

- **Benefits to the country**

- Generate foreign exchange savings
- Example and model of an electric cooperative and private sector collaboration (PPP) for replication
- Increase local employment
- Environmentally-friendly; mitigate climate change



# Value Proposition

**Island Solar Power Source**  
**Independent renewable energy**

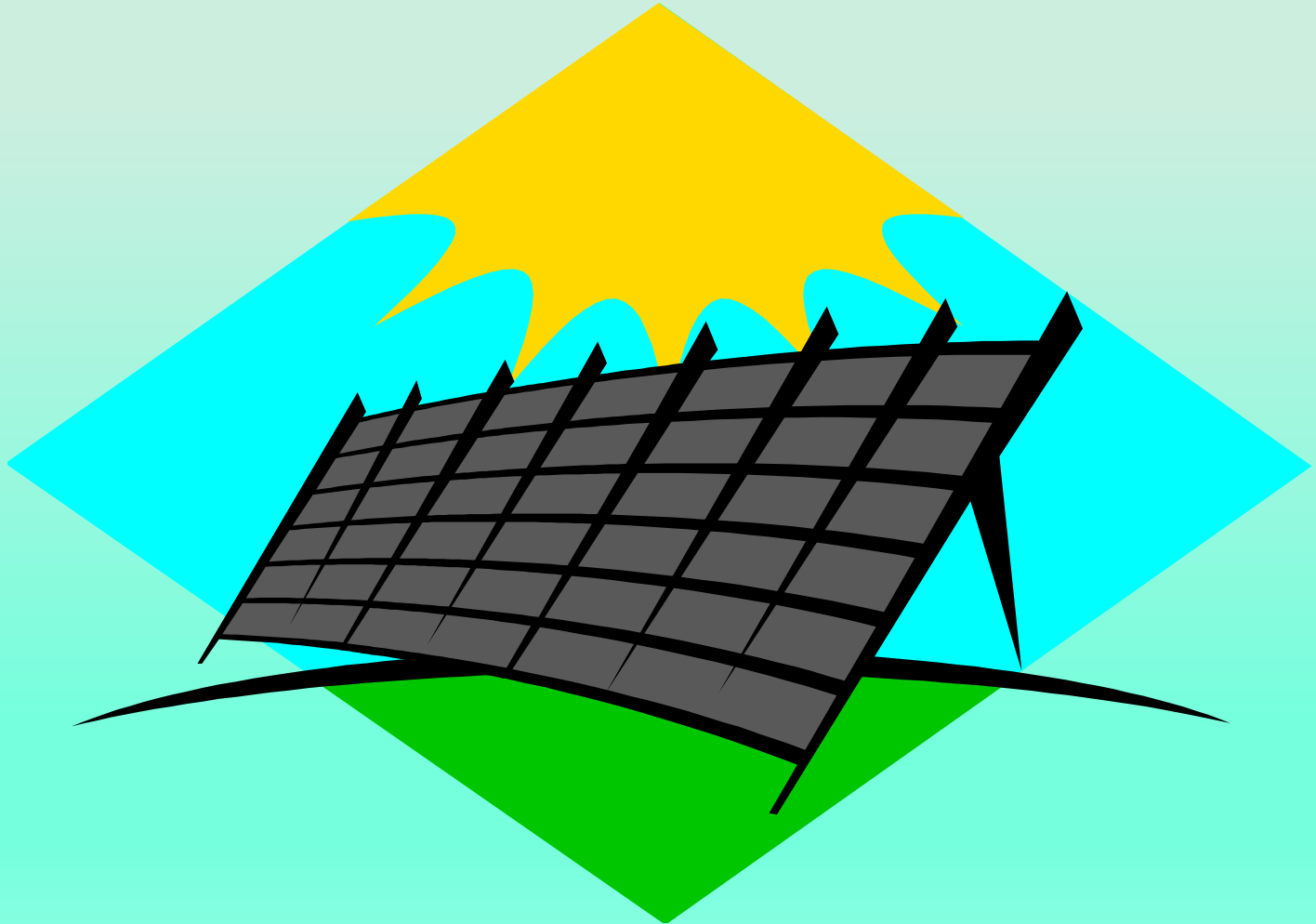


**Value Add : Prepaid Billing System**  
**100% collection & recovery of investment**





# Thank you for listening!!



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