

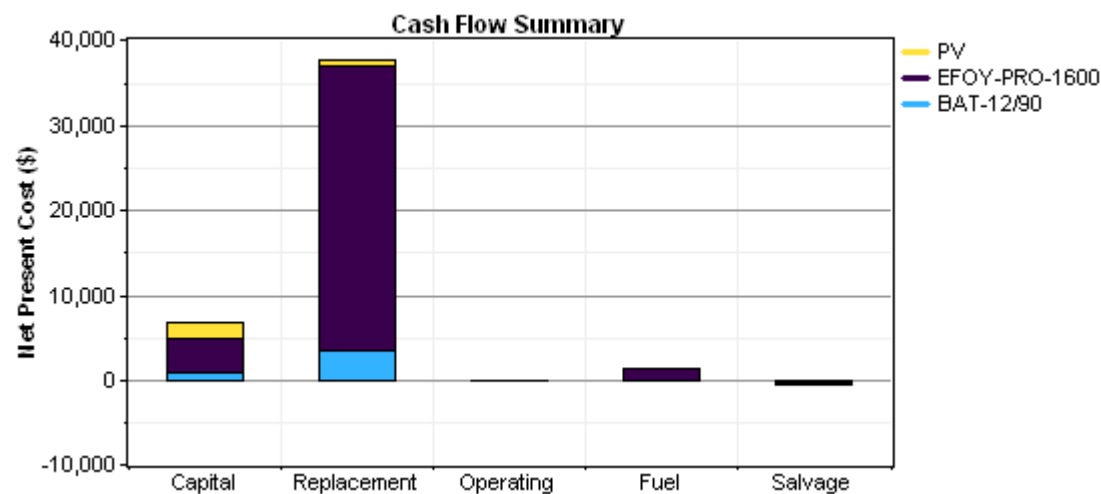
# System Report - udomi-brodinger-50Watt

## System architecture

PV Array	0.34 kW
EFOY-PRO-1600	0.065 kW
Battery	4 BAT-12/90
Dispatch strategy Cycle Charging	

## Cost summary

Total net present cost	\$ 45,183
Levelized cost of energy	\$ 8.070/kWh
Operating cost	\$ 3,000/yr

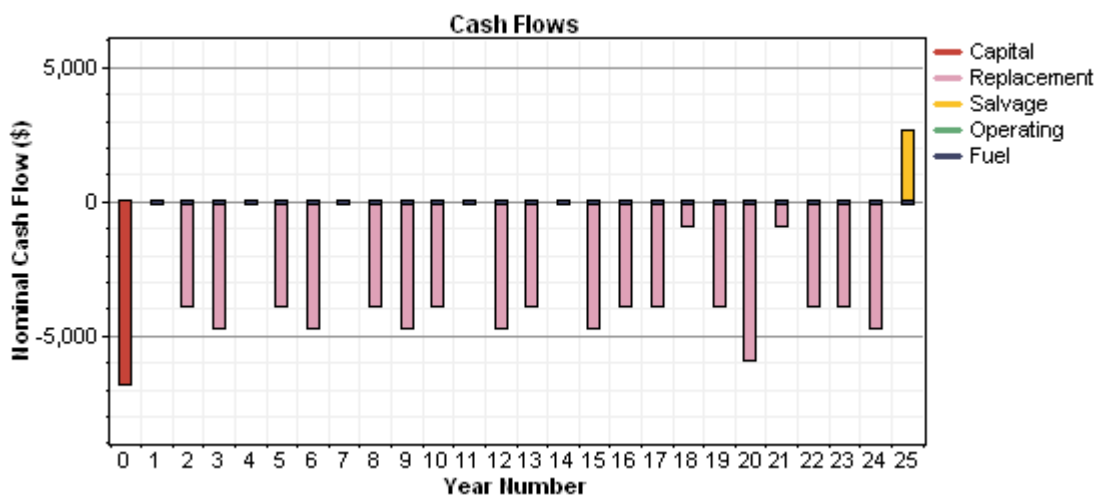


## Net Present Costs

Component	Capital	Replacement	O&M	Fuel	Salvage	Total
	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)
PV	2,020	630	0	0	-353	2,297
EFOY-PRO-1600	3,950	33,529	0	1,424	-133	38,770
BAT-12/90	860	3,390	0	0	-134	4,117
System	6,830	37,549	0	1,424	-619	45,183

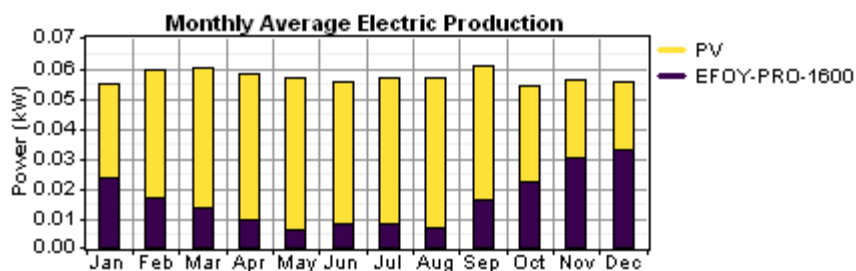
## Annualized Costs

Component	Capital	Replacement	O&M	Fuel	Salvage	Total
	(\$/yr)	(\$/yr)	(\$/yr)	(\$/yr)	(\$/yr)	(\$/yr)
PV	158	49	0	0	-28	180
EFOY-PRO-1600	309	2,623	0	111	-10	3,033
BAT-12/90	67	265	0	0	-10	322
System	534	2,937	0	111	-48	3,535



### Electrical

Component	Production	Fraction
	(kWh/yr)	
PV array	360	72%
EFOY-PRO-1600	139	28%
Total	499	100%



Load	Consumption	Fraction
	(kWh/yr)	
DC primary load	438	100%
Total	438	100%

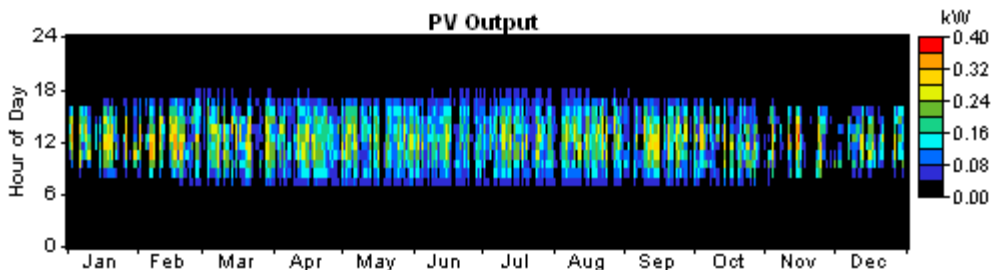
Quantity	Value	Units
Excess electricity	10.7	kWh/yr
Unmet load	0.00	kWh/yr
Capacity shortage	0.00	kWh/yr
Renewable fraction	0.721	

### PV

Quantity	Value	Units
Rated capacity	0.340	kW
Mean output	0.0411	kW
Mean output	0.986	kWh/d
Capacity factor	12.1	%
Total production	360	kWh/yr

Quantity	Value	Units
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Minimum output	0.00	kW
Maximum output	0.364	kW
PV penetration	82.2	%
Hours of operation	4,380	hr/yr
Levelized cost	0.499	\$/kWh

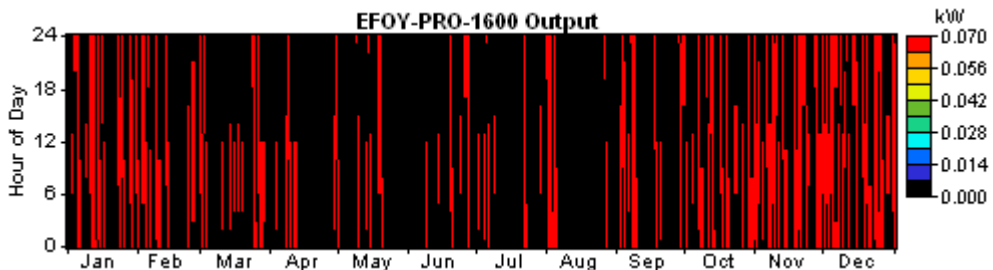


### EFOY-PRO-1600

Quantity	Value	Units
Hours of operation	2,142	hr/yr
Number of starts	93	starts/yr
Operational life	1.40	yr
Capacity factor	24.5	%
Fixed generation cost	1.27	\$/hr
Marginal generation cost	0.800	\$/kWh

Quantity	Value	Units
Electrical production	139	kWh/yr
Mean electrical output	0.0650	kW
Min. electrical output	0.0650	kW
Max. electrical output	0.0650	kW

Quantity	Value	Units
Fuel consumption	139	L/yr
Specific fuel consumption	1.000	L/kWh
Fuel energy input	602	kWh/yr
Mean electrical efficiency	23.1	%



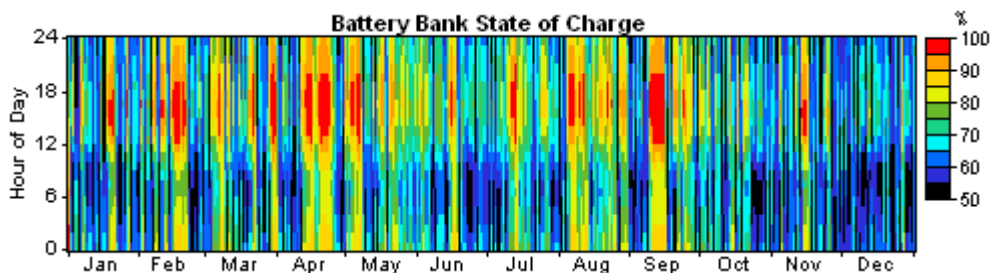
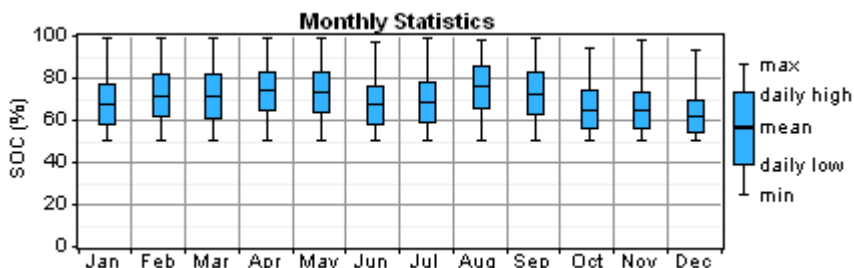
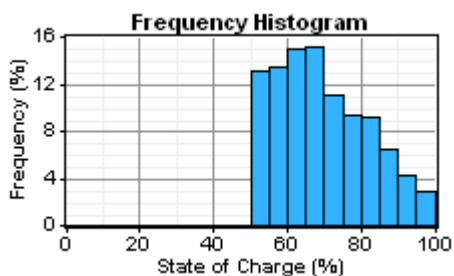
### Battery

Quantity	Value
String size	1
Strings in parallel	4
Batteries	4

Bus voltage (V)	12
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Quantity	Value	Units
Nominal capacity	4.32	kWh
Usable nominal capacity	2.16	kWh
Autonomy	43.2	hr
Lifetime throughput	3,498	kWh
Battery wear cost	0.275	\$/kWh
Average energy cost	0.000	\$/kWh

Quantity	Value	Units
Energy in	257	kWh/yr
Energy out	207	kWh/yr
Storage depletion	1.35	kWh/yr
Losses	49.0	kWh/yr
Annual throughput	232	kWh/yr
Expected life	3.00	yr



### Emissions

Pollutant	Emissions (kg/yr)
Carbon dioxide	209
Carbon monoxide	0.905
Unburned hydrocarbons	0.1
Particulate matter	0.0682
Sulfur dioxide	0.711
Nitrogen oxides	8.08