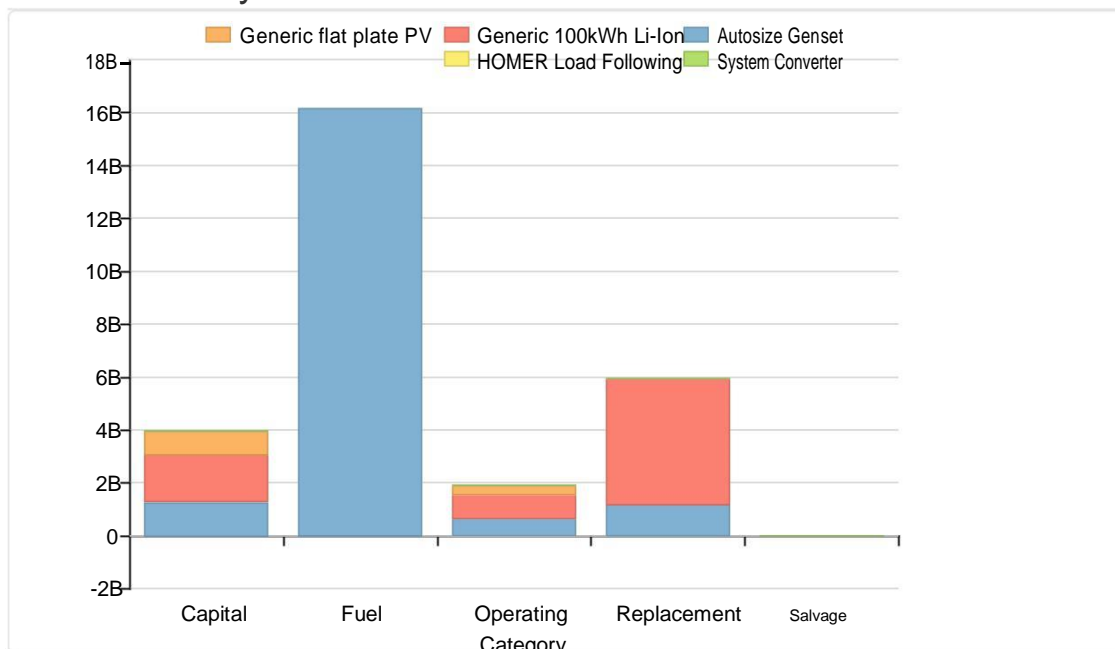


# Lampiran System Report

## System architecture

PV	Generic flat plate PV	350 kW
Generator	Autosize Genset	450 kW
Storage	Generic 100kWh Li-Ion	4 strings
Converter	System Converter	55 kW
Dispatch Strategy	HOMER Load Following	

## Cost summary



Cost Summary

Total net present cost	27926941874 Rp
Levelized cost of energy	4347.972 Rp/kWh

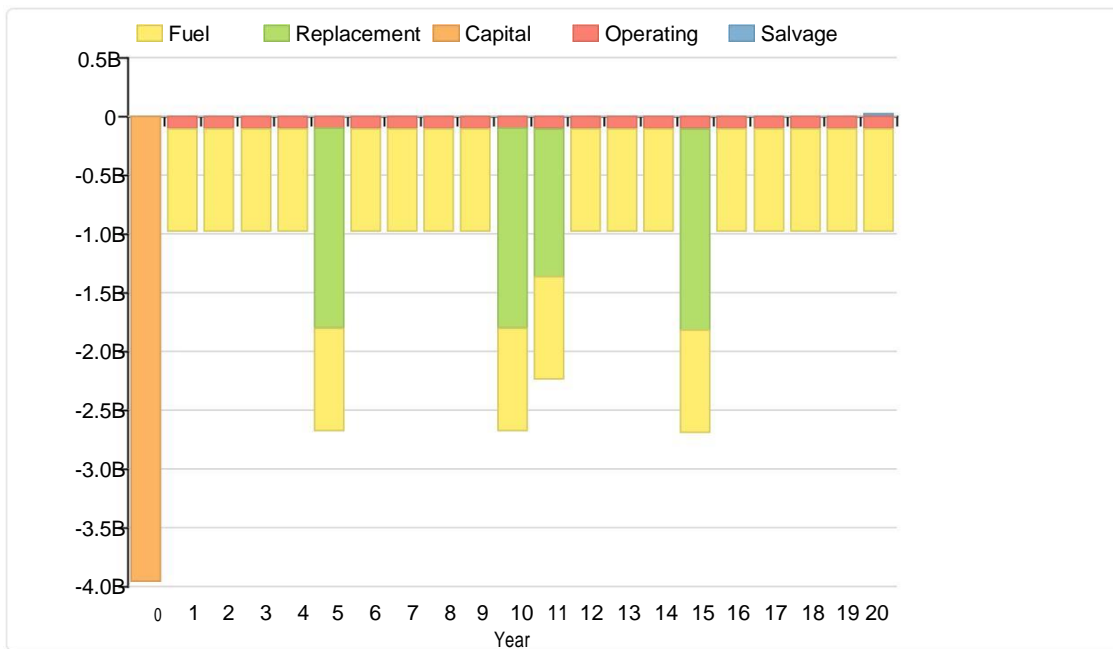
## Net Present Costs

Component	Capital	Replacement	O&M	Fuel	Salvage	Total
Generic flat plate PV	875,000,000	0	324,843,001	0	0	1,199,843,001
Autosize Genset	1,260,000,000	1,172,411,800	624,812,308	16,153,305,335	-5,820,435	19,204,709,009
HOMER Load Following	0	0	0	0	0	0
Generic 100kWh Li-Ion	1,800,000,000	4,748,430,668	928,122,859	0	0	7,476,553,526
System Converter	19,250,000	17,283,049	20,418,703	0	-11,115,414	45,836,338
System	3,954,250,000	5,938,125,516	1,898,196,871	16,153,305,335	-16,935,848	27,926,941,874

## Annualized Costs

Component	Capital	Replacement	O&M	Fuel	Salvage	Total
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Component	Generic flatplate PV	Capital	Replacement	O&M	Fuel	Salvage	Total
		47,138,156	0	17,500,000	0	0	64,638,156
Autosize Genset		67,878,944	63,160,377	33,660,000	870,213,743	-313,559	1,034,599,505
HOMER Load Following		0	0	0	0	0	0
Generic 100kWh Li-Ion		96,969,921	255,808,303	50,000,000	0	0	402,778,224
System Converter		1,037,039	931,075	1,100,000	0	-598,812	2,469,303
System		213,024,061	319,899,756	102,260,000	870,213,743	-912,371	1,504,485,188

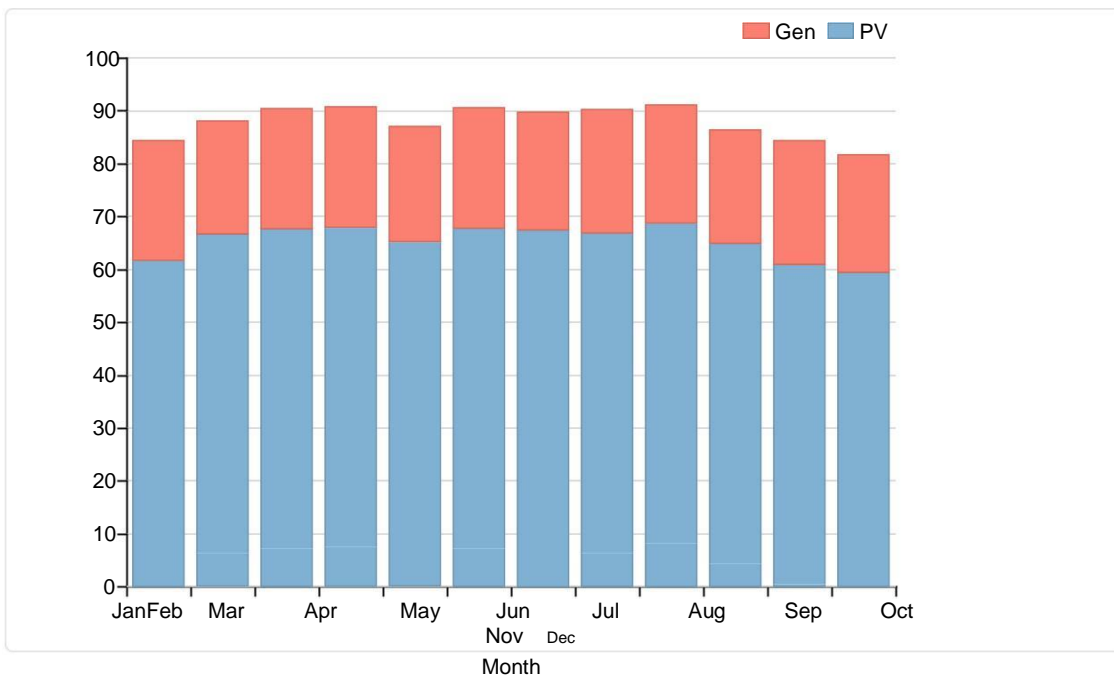


## Electrical

Quantity	Value	Units
Excess electricity	397727	kWh/yr
Unmet load	0	kWh/yr
Capacity shortage	0	kWh/yr
Renewable percent	43	%

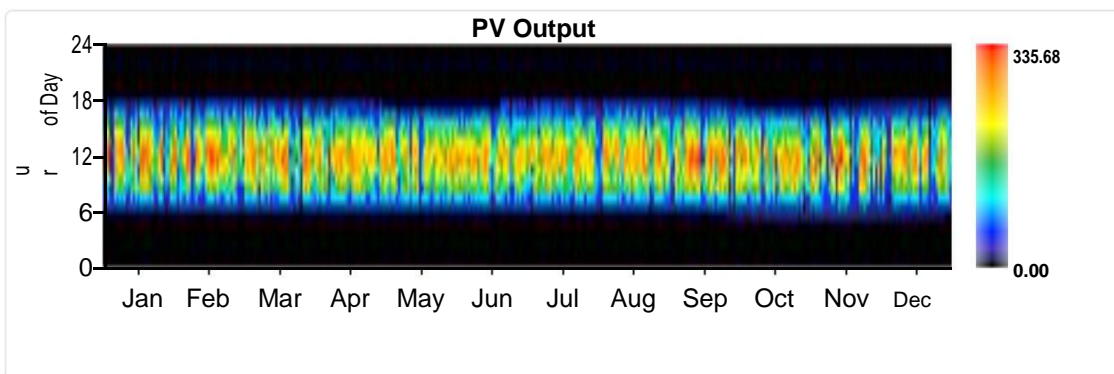
Component	Production(kWh/yr)	Percent (%)
PV	572,790	74
Generator	196,631	26
Total	769,421	100

Load	Consumption(kWh/yr)	Percent (%)
AC primary load	346,020	100
DC primary load	0	0
Total	346,020	100



### PV:Generic flat plate PV

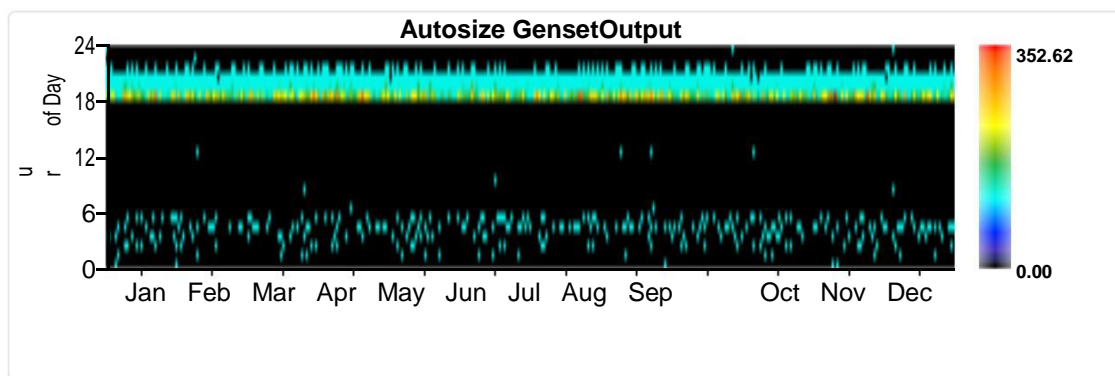
Quantity	Value	Units
Rated capacity	350	kW
Mean output	65	kW
Mean output	1569.29	kWh/d
Capacity factor	18.68	%
Total production	572790	kWh/yr
Minimum output	0.00	kW
Maximum output	335.68	kW
PV penetration	165.54	%
Hours of operation	4388	hrs/yr
Levelized cost	112.848	Rp/kWh



### Generator:Autosize Genset

Quantity	Value	Units
Hours of operation	1496	hrs/yr
Number of starts	656	starts/yr

Operational life Quantity	Value	10 yr Units
Fixed generation cost	225952.14	Rp/hr
Marginal generation cost	3516.80	Rp/kWh
Electrical production	196631	kWh/yr
Mean electrical output	131	kW
Min. electrical output	113	kW
Max. electrical output	353	kW
Fuel consumption	62158	L/yr
Specific fuel consumption	0.32	L/kWh
Fuel energy input	611636	kWh/yr
Mean electrical efficiency	32	%

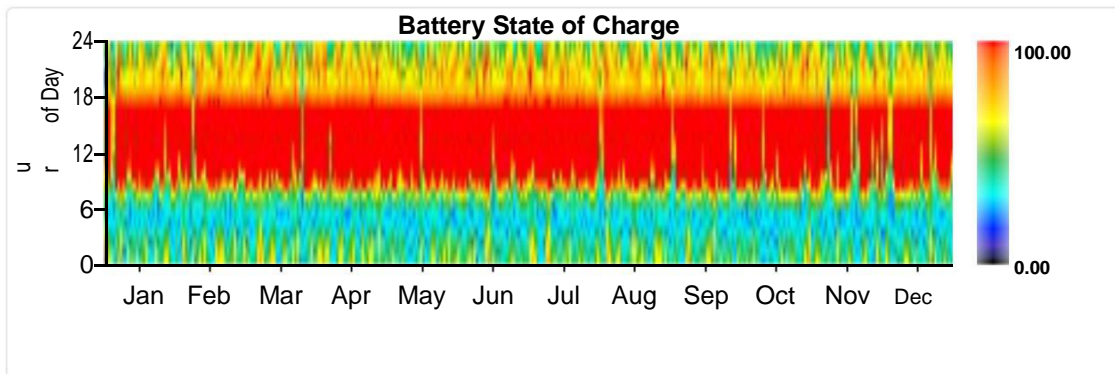


### Battery:Generic 100kWh Li-Ion

Quantity	Value
String size	1
Strings in parallel	4
Batteries	4
Bus voltage	600

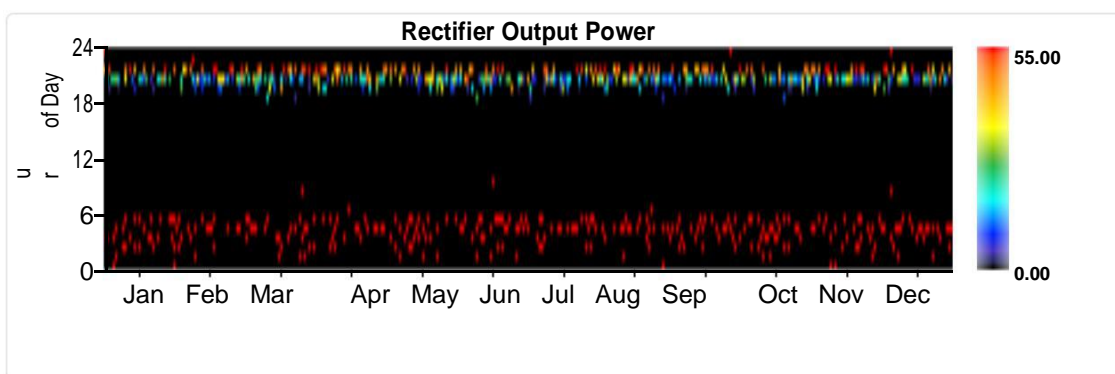
Quantity	Value	Units
Nominal capacity	400	kWh
Usable nominal capacity	320	kWh
Autonomy	8	hr
Battery wear cost	1493.298	Rp/kWh
Average energy cost	0.000	Rp/kWh
Energy in	130115	kWh/yr
Energy out	117325	kWh/yr

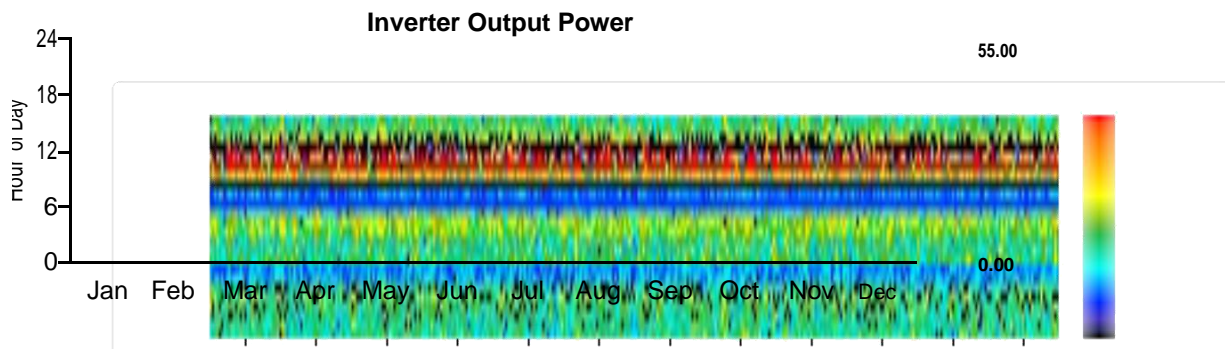
Quantity	Value	Units
Storage depletion	234	kWh/yr
Losses	12555	kWh/yr
Annual throughput	123672	kWh/yr



### Converter

Quantity	Inverter	Rectifier	Units
Capacity	55	52	kW
Mean output	21	3	kW
Minimum output	0	0	kW
Maximum output	55	55	kW
Capacity factor	39	6	%
Hours of operation	8,049	705	hrs/yr
Energy in	197,055	30,321	kWh/yr
Energy out	187,202	27,289	kWh/yr
Losses	9,853	3,032	kWh/yr





## Emissions

Pollutant	Emissions	Units
Carbon dioxide	162706	kg/yr
Carbon monoxide	1026	kg/yr
Unburned hydrocarbons	45	kg/yr
Particulate matter	6	kg/yr
Sulfur dioxide	398	kg/yr
Nitrogen oxides	963	kg/yr