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System Report - GreenCampusKU_costdiff.hmr

Sensitivity case

Wind Data Scaled Average: 3.65 m/s

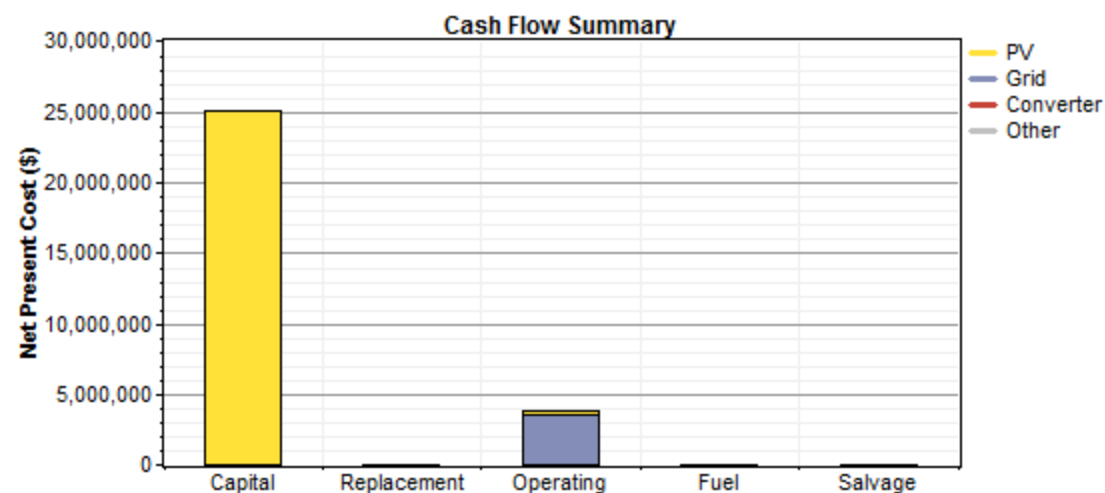
Rate W_2 Power Price: 0.04 \$/kWh

System architecture

PV Array	10,000 kW
Grid	1,000 kW
Inverter	20,000 kW
Rectifier	20,000 kW

Cost summary

Total net present cost	\$ 28,836,126
Levelized cost of energy	\$ 0.123/kWh
Operating cost	\$ 334,364/yr

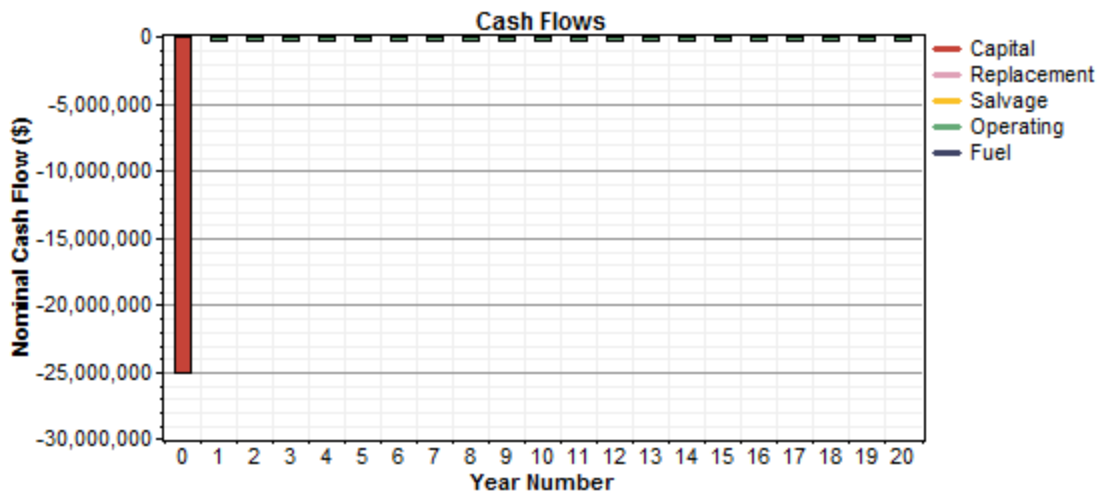


Net Present Costs

Component	Capital	Replacement	O&M	Fuel	Salvage	Total
	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)
PV	25,000,000	0	286,748	0	0	25,286,748
Grid	0	0	3,548,379	0	0	3,548,379
Converter	0	0	0	0	0	0
Other	1,000	0	0	0	0	1,000
System	25,001,000	0	3,835,127	0	0	28,836,128

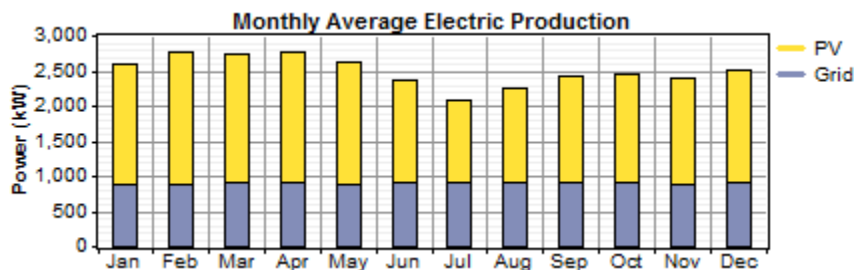
Annualized Costs

Component	Capital	Replacement	O&M	Fuel	Salvage	Total
	(\$/yr)	(\$/yr)	(\$/yr)	(\$/yr)	(\$/yr)	(\$/yr)
PV	2,179,614	0	25,000	0	0	2,204,614
Grid	0	0	309,364	0	0	309,364
Converter	0	0	0	0	0	0
Other	87	0	0	0	0	87
System	2,179,701	0	334,364	0	0	2,514,065



Electrical

Component	Production	Fraction
	(kWh/yr)	
PV array	13,973,497	64%
Grid purchases	7,893,502	36%
Total	21,867,000	100%



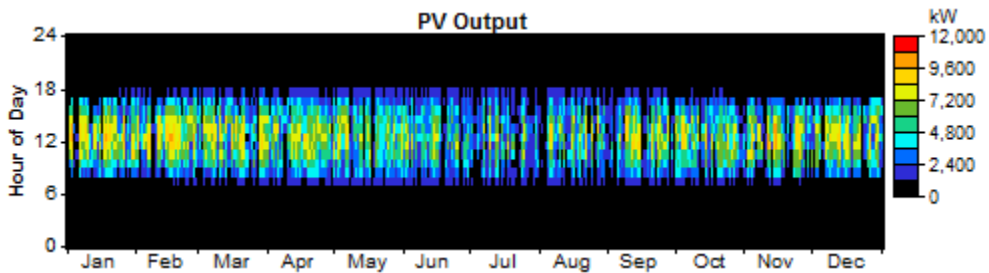
Load	Consumption	Fraction
	(kWh/yr)	
AC primary load	20,437,010	100%
Grid sales	25,505	0%
Total	20,462,516	100%

Quantity	Value	Units
Excess electricity	7,851	kWh/yr
Unmet load	31,758,310	kWh/yr
Capacity shortage	49,344,960	kWh/yr
Renewable fraction	0.639	

PV

Quantity	Value	Units
Rated capacity	10,000	kW
Mean output	1,595	kW
Mean output	38,284	kWh/d
Capacity factor	16.0	%
Total production	13,973,497	kWh/yr

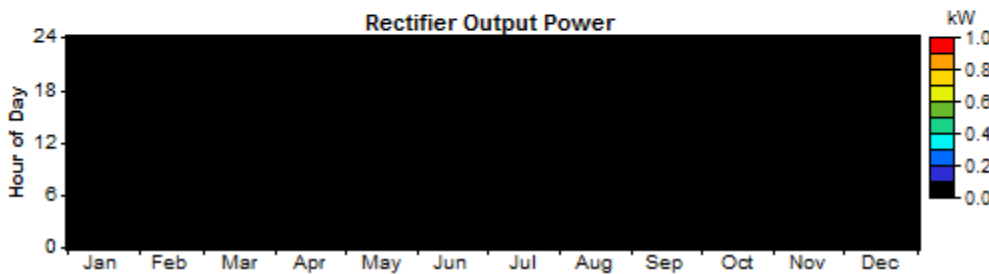
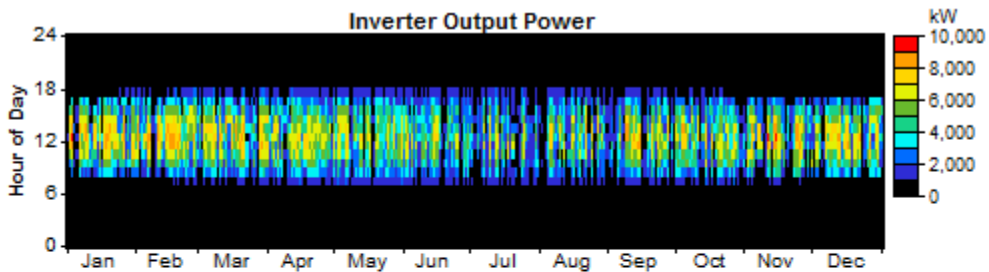
Quantity	Value	Units
Minimum output	0.00	kW
Maximum output	10,407	kW
PV penetration	26.8	%
Hours of operation	4,383	hr/yr
Levelized cost	0.158	\$/kWh



Converter

Quantity	Inverter	Rectifier	Units
Capacity	20,000	20,000	kW
Mean output	1,435	0	kW
Minimum output	0	0	kW
Maximum output	9,366	0	kW
Capacity factor	7.2	0.0	%

Quantity	Inverter	Rectifier	Units
Hours of operation	4,383	0	hrs/yr
Energy in	13,965,648	0	kWh/yr
Energy out	12,569,060	0	kWh/yr
Losses	1,396,588	0	kWh/yr



Grid

Rate: Rate W_2

Month	Energy Purchased	Energy Sold	Net Purchases	Peak Demand	Energy Charge	Demand Charge
	(kWh)	(kWh)	(kWh)	(kW)	(\$)	(\$)

Jan	659,870	8,281	651,589	1,000	24,325	0
Feb	600,606	2,325	598,280	1,000	23,443	0
Mar	671,435	3,538	667,896	1,000	25,973	0
Apr	652,331	1,536	650,795	1,000	25,709	0
May	665,470	2,574	662,897	1,000	25,975	0
Jun	652,974	0	652,974	1,000	26,119	0
Jul	676,050	0	676,050	1,000	27,042	0
Aug	677,447	1,452	675,994	1,000	26,735	0
Sep	652,209	679	651,530	1,000	25,919	0
Oct	671,406	1,774	669,632	1,000	26,413	0
Nov	642,925	3,235	639,690	1,000	24,908	0
Dec	670,779	111	670,668	1,000	26,803	0
Annual	7,893,502	25,505	7,867,997	1,000	309,364	0

Emissions

Pollutant	Emissions (kg/yr)
Carbon dioxide	4,972,574
Carbon monoxide	0
Unburned hydrocarbons	0
Particulate matter	0
Sulfur dioxide	21,558
Nitrogen oxides	10,543