System Advisor Model Report

Photovoltaic System	3.00 kW Nameplate	Townsville Aero, QLD
Residential	$1.55/W Installed Cost	-19.25 N, 146.77 E GMT +10

Performance Model

[542]: reference to unassigned variable: nm

[541]: eval error in statement list

[422]: eval error in statement list

[327]: eval error in statement list

[1]: eval error in statement list

Modules	
User-specified parameters	
Cell material	multiSi
Module area	1.6 m²
Module capacity	249.9 DC Watts
Quantity	12
Total capacity	3 DC kW
Total area	19 m²

Inverters	
Growatt New Energy: GROWATT 3000HF-US (240V) 240\	
Unit capacity	3 AC kW
Input voltage	250 - 480 VDC DC V
Quantity	1
Total capacity	3 AC kW
DC to AC Capacity Ratio	1.00
AC losses (%)	1.0

Array	
Strings	1
Modules per string	12
String voltage (DC V)	372.0
Tilt (deg from horizontal)	15.0
Azimuth (deg E of N)	0
Tracking	no
Backtracking	-
Self shading	no
Rotation limit (deg)	-
Shading	no
Snow	no
Soiling	yes
DC losses (%)	4.4

Performance Adjustments	
Availability/Curtailment	none
Degradation	0.5 %/yr
Hourly or custom losses	none

Annual Results (in Year 1)	
GHI kW/m²/day	5.6
POA kW/m²/day	5.0
Net to inverter	5,180 DC kWh
Net to grid	4,880 AC kWh
Capacity factor	18.60
Performance ratio	0.77

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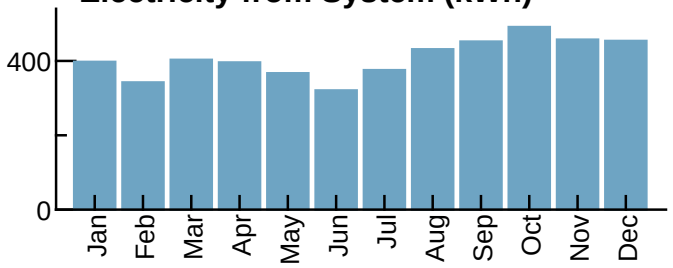
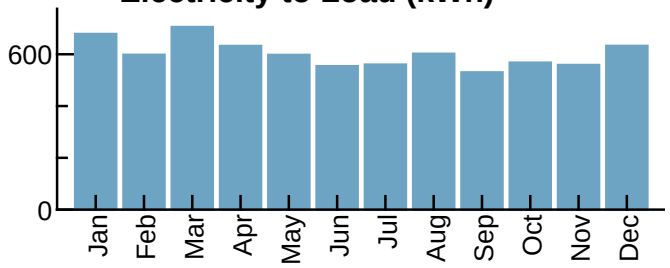
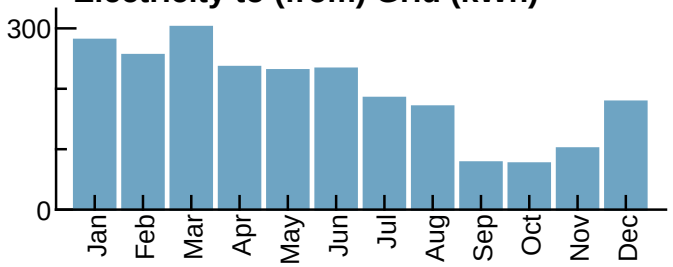
Electricity from System (kWh)



Electricity to Load (kWh)



Electricity to (from) Grid (kWh)



No Net Metering Credits

Monthly Electricity Purchases and Savings (Year 1 $)

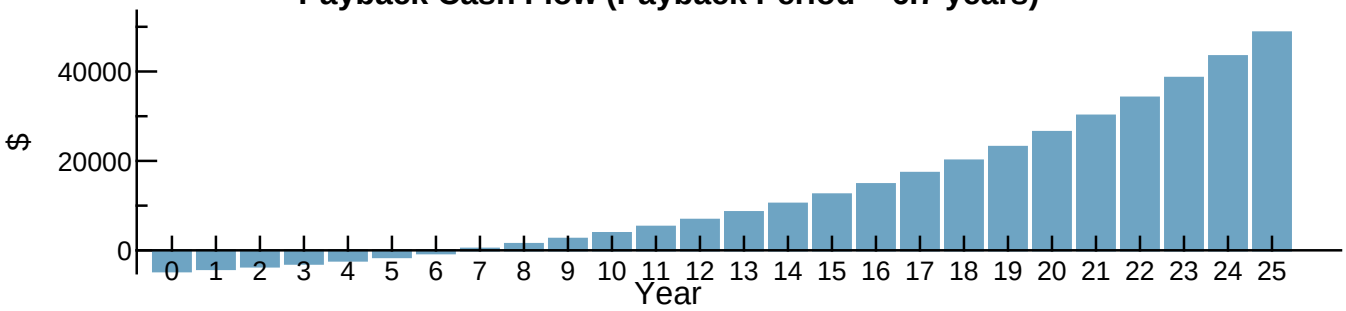
Month	Without System	With System	Savings
Jan	208	147	61
Feb	189	135	54
Mar	215	153	62
Apr	197	142	55
May	189	138	50
Jun	178	137	41
Jul	180	135	44
Aug	190	137	52
Sep	173	123	49
Oct	182	127	54
Nov	180	124	55
Dec	197	135	62
Annual	2,283	1,637	645

NPV Approximation using Annuities

Annuities, Capital Recovery Factor (CRF) = 0.0827		
Investment	$0	Sum:
Expenses	$-400	$1,300
Savings	$0	NPV = Sum / CRF:
Energy value	$1,700	$15,000

Investment = Installed Cost - Debt Principal - IBI - CBI
Expenses = Operating Costs + Debt Payments
Savings = Tax Deductions + PBI
Energy value = Tax Adjusted Net Savings
Nominal discount rate = 6.6%

Payback Cash Flow (Payback Period = 6.7 years)



Nominal POA (kWh)
41,535

- Shading
  -0 %
- Soiling
  -4.999 %

Nominal DC energy (kWh)
6,012

- Snow
  -0 %
- Module
  -9.758 %
- Inverter MPPT clipping
  -0 %
- Module mismatch
  -1.973 %
- Diodes and connections
  -0.493 %
- DC wiring
  -1.973 %
- Tracking error
  -0 %
- Nameplate
  -0 %
- DC power optimizer
  -0 %

Net DC energy (kWh)
5,184

- Inverter power clipping
  -0 %
- Inverter power consumption
  -1.49 %
- Inverter nighttime consumption
  -0.012 %
- Inverter efficiency
  -3.344 %

Gross AC energy (kWh)
4,935

- AC wiring
  -1 %
- Step-up transformer
  -0 %
- Availability and curtailment
  -0 %

Annual energy (kWh)
4,886