

HOMER Input Summary

File name: Project_Leodo.hmr

File version: 2.68 beta

Author:

AC Load: Primary Load 1

Data source: Synthetic

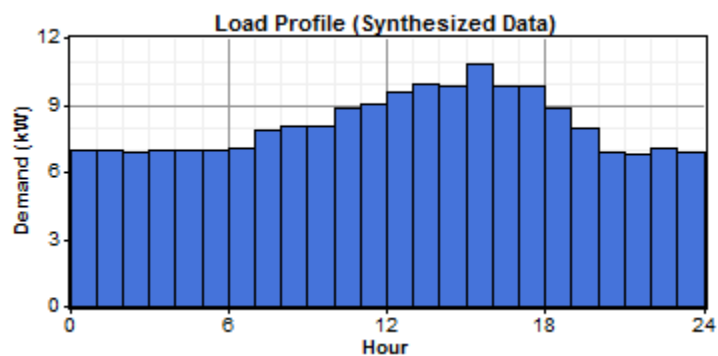
Daily noise: 15%

Hourly noise: 20%

Scaled annual average: 195 kWh/d

Scaled peak load: 20.6 kW

Load factor: 0.395



PV

Size (kW)	Capital (\$)	Replacement (\$)	O&M (\$/yr)
18.000	5,000	5,000	1

Sizes to consider: 0, 18 kW

Lifetime: 20 yr

Derating factor: 80%

Tracking system: No Tracking

Slope: 32.2 deg

Azimuth: 0 deg

Ground reflectance: 20%

Solar Resource

Latitude: 32 degrees 13 minutes North

Longitude: 125 degrees 19 minutes East

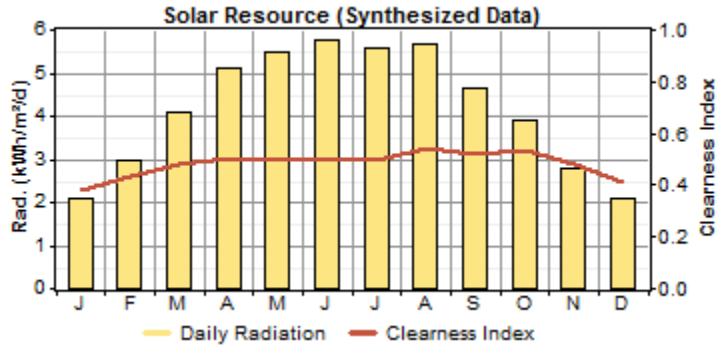
Time zone: GMT +8:00

Data source: Synthetic

Month	Clearness Index	Average Radiation
		(kWh/m ² /day)
Jan	0.380	2.110
Feb	0.434	2.960
Mar	0.477	4.070
Apr	0.507	5.130
May	0.493	5.480
Jun	0.502	5.760

Jul	0.497	5.600
Aug	0.542	5.660
Sep	0.516	4.670
Oct	0.535	3.910
Nov	0.482	2.810
Dec	0.410	2.110

Scaled annual average: 4.19 kWh/m²/d



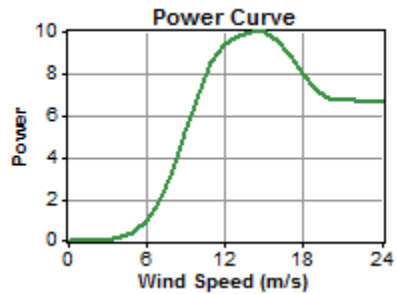
DC Wind Turbine: Generic 10kW

Quantity	Capital (\$)	Replacement (\$)	O&M (\$/yr)
2	30,000	25,000	500

Quantities to consider: 0, 1, 2, 3, 4, 5

Lifetime: 15 yr

Hub height: 25 m

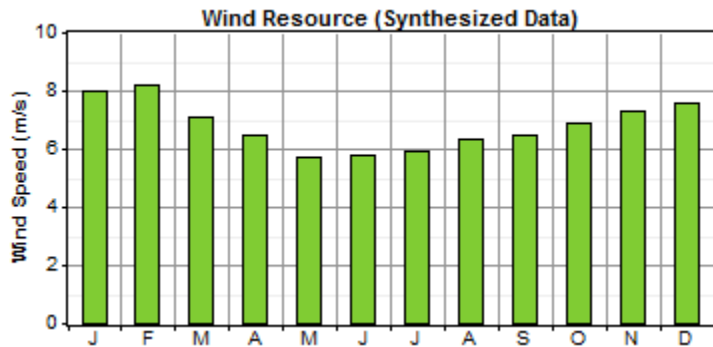


Wind Resource

Data source: Synthetic

Month	Wind Speed
	(m/s)
Jan	8.02
Feb	8.21
Mar	7.10
Apr	6.48
May	5.75
Jun	5.81
Jul	5.93
Aug	6.35
Sep	6.48

Oct	6.87
Nov	7.32
Dec	7.59

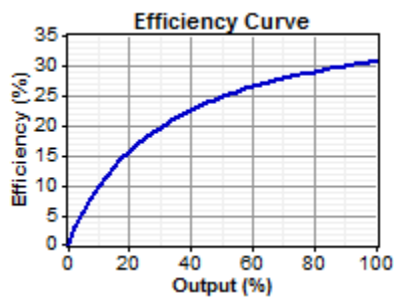


Weibull k: 2.00
 Autocorrelation factor: 0.850
 Diurnal pattern strength: 0.250
 Hour of peak wind speed: 15
 Scaled annual average: 6.83 m/s
 Anemometer height: 50 m
 Altitude: 0 m
 Wind shear profile: Logarithmic
 Surface roughness length: 0.01 m

AC Generator: Generator 1

Size (kW)	Capital (\$)	Replacement (\$)	O&M (\$/hr)
25.000	7,800	7,800	0.020

Sizes to consider: 0, 10, 20, 30, 40 kW
 Lifetime: 15,000 hrs
 Min. load ratio: 30%
 Heat recovery ratio: 0%
 Fuel used: Diesel
 Fuel curve intercept: 0.08 L/hr/kW
 Fuel curve slope: 0.25 L/hr/kW



Fuel: Diesel

Price: \$ 0.8/L
 Lower heating value: 43.2 MJ/kg
 Density: 820 kg/m³
 Carbon content: 88.0%
 Sulfur content: 0.330%

Battery: Hoppecke 12 OPzS 1500

Quantity	Capital (\$)	Replacement (\$)	O&M (\$/yr)
30	1,200	1,100	50.00

Quantities to consider: 0, 20, 30, 40, 50

Voltage: 2 V

Nominal capacity: 1,500 Ah

Lifetime throughput: 5,136 kWh

Converter

Size (kW)	Capital (\$)	Replacement (\$)	O&M (\$/yr)
30.000	12,500	12,500	100

Sizes to consider: 0, 10, 20, 30 kW

Lifetime: 15 yr

Inverter efficiency: 90%

Inverter can parallel with AC generator: Yes

Rectifier relative capacity: 100%

Rectifier efficiency: 85%

Economics

Annual real interest rate: 8%

Project lifetime: 25 yr

Capacity shortage penalty: \$ 0/kWh

System fixed capital cost: \$ 6,000

System fixed O&M cost: \$ 0/yr

Generator control

Check load following: Yes

Check cycle charging: Yes

Setpoint state of charge: 80%

Allow systems with multiple generators: Yes

Allow multiple generators to operate simultaneously: Yes

Allow systems with generator capacity less than peak load: Yes

Emissions

Carbon dioxide penalty: \$ 1.0, 0.8, 0.6, 0.4, 0.2/t

Carbon monoxide penalty: \$ 0/t

Unburned hydrocarbons penalty: \$ 0/t

Particulate matter penalty: \$ 0/t

Sulfur dioxide penalty: \$ 0/t

Nitrogen oxides penalty: \$ 0/t

Constraints

Maximum annual capacity shortage: 0%

Minimum renewable fraction: 0%

Operating reserve as percentage of hourly load: 10%

Operating reserve as percentage of peak load: 0%

Operating reserve as percentage of solar power output: 25%

Operating reserve as percentage of wind power output: 50%