

HOMER Input Summary

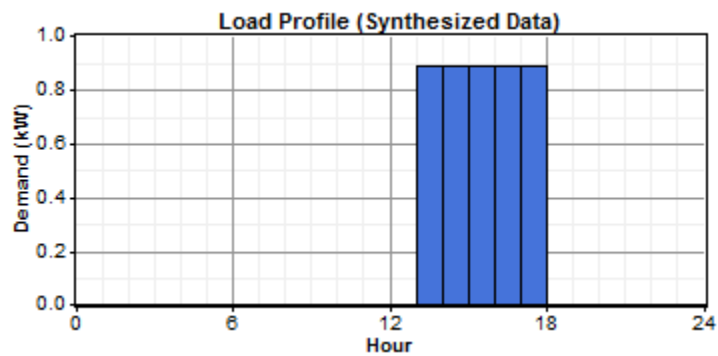
File name: Mongolia.hmr

File version: 2.68 beta

Author:

DC Load: Primary Load 1

Data source: Synthetic
 Daily noise: 15%
 Hourly noise: 20%
 Scaled annual average: 4.44 kWh/d
 Scaled peak load: 1.69 kW
 Load factor: 0.110



PV

Size (kW)	Capital (\$)	Replacement (\$)	O&M (\$/yr)
0.100	150	15	0

Sizes to consider: 0.0, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0 kW

Lifetime: 20 yr

Derating factor: 80%

Tracking system: No Tracking

Slope: 49 deg

Azimuth: 0 deg

Ground reflectance: 20%

Solar Resource

Latitude: 48 degrees 59 minutes North

Longitude: 91 degrees 28 minutes East

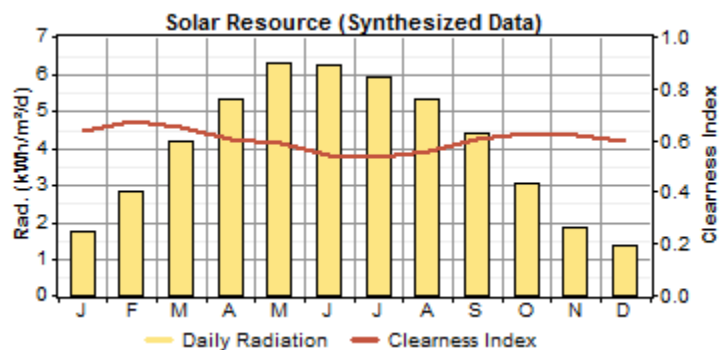
Time zone: GMT +8:00

Data source: Synthetic

Month	Clearness Index	Average Radiation
		(kWh/m ² /day)
Jan	0.638	1.730
Feb	0.672	2.800
Mar	0.655	4.190
Apr	0.601	5.320
May	0.588	6.310
Jun	0.540	6.240

Jul	0.532	5.920
Aug	0.559	5.330
Sep	0.606	4.380
Oct	0.627	3.020
Nov	0.618	1.870
Dec	0.597	1.370

Scaled annual average: 4.04, 5.00, 6.00, 7.00, 8.00 kWh/m²/d



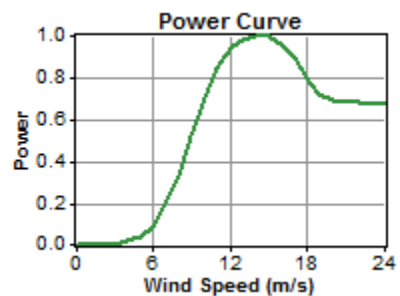
DC Wind Turbine: Generic 1kW

Quantity	Capital (\$)	Replacement (\$)	O&M (\$/yr)
1	9,500	950	0

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

Lifetime: 15 yr

Hub height: 25 m

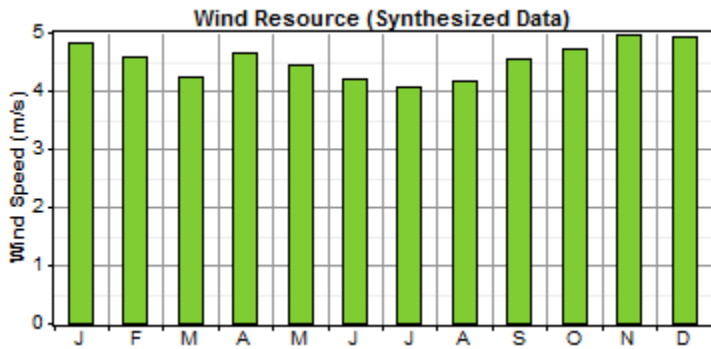


Wind Resource

Data source: Synthetic

Month	Wind Speed
	(m/s)
Jan	4.82
Feb	4.57
Mar	4.24
Apr	4.66
May	4.46
Jun	4.20
Jul	4.08
Aug	4.18
Sep	4.55

Oct	4.74
Nov	4.98
Dec	4.94



Weibull k: 2.00
 Autocorrelation factor: 0.850
 Diurnal pattern strength: 0.250
 Hour of peak wind speed: 15
 Scaled annual average: 4.54, 5.00, 6.00, 7.00, 8.00 m/s
 Anemometer height: 50 m
 Altitude: 0 m
 Wind shear profile: Logarithmic
 Surface roughness length: 0.01 m

Battery: Vision 6FM200D

Quantity	Capital (\$)	Replacement (\$)	O&M (\$/yr)
1	484	48	0.00

Quantities to consider: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

Voltage: 12 V
 Nominal capacity: 200 Ah
 Lifetime throughput: 917 kWh

Converter

Size (kW)	Capital (\$)	Replacement (\$)	O&M (\$/yr)
1.000	330	33	0

Sizes to consider: 0, 1, 2, 3, 4, 5 kW
 Lifetime: 15 yr
 Inverter efficiency: 80%
 Inverter can parallel with AC generator: Yes
 Rectifier relative capacity: 100%
 Rectifier efficiency: 85%

Economics

Annual real interest rate: 6%
 Project lifetime: 25 yr
 Capacity shortage penalty: \$ 0/kWh
 System fixed capital cost: \$ 0
 System fixed O&M cost: \$ 0/yr

Generator control

Check load following: No

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: \$ 0/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%