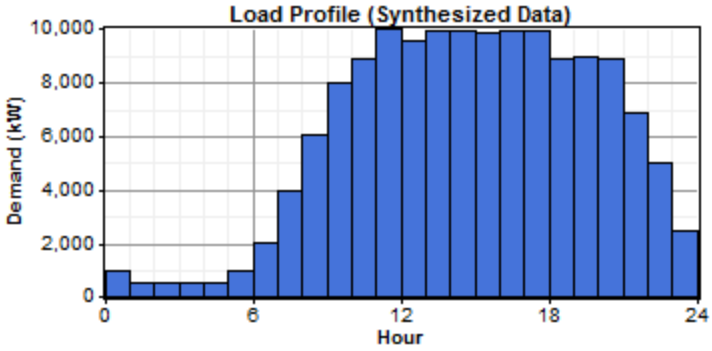
WWW.MWFTR.COM

HOMER Input Summary

File name: GreenCampusKU_costdiff.hmr
File version: 2.68 beta
Author: James
Notes: Green Campus in KU

AC Load: Primary Load 1

Data source: Synthetic
Daily noise: 14%
Hourly noise: 10%
Scaled annual average: 143,001 kWh/d
Scaled peak load: 15,445 kW
Load factor: 0.386



PV

Size (kW)	Capital ($)	Replacement ($)	O&M ($/yr)
10,000.000	25,000,000	2,500,000	25,000

Sizes to consider: 0, 10,000 kW
Lifetime: 20 yr
Derating factor: 80%
Tracking system: No Tracking
Slope: 37.6 deg
Azimuth: 0 deg
Ground reflectance: 20%

Solar Resource

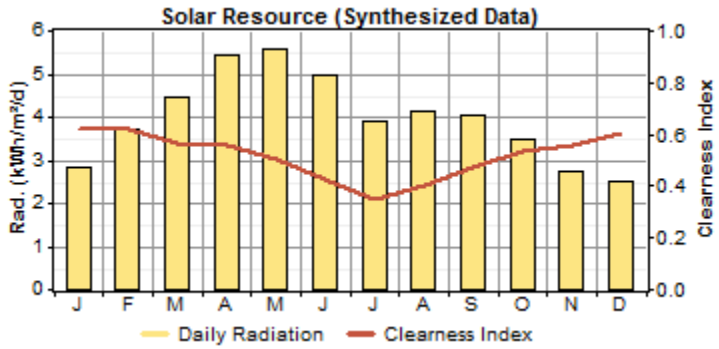
Latitude: 37 degrees 59 minutes North
Longitude: 127 degrees 4 minutes East
Time zone: GMT +9:00

Data source: Synthetic

Month	Clearness Index	Average Radiation (kWh/m^2/day)
Jan	0.618	2.830
Feb	0.622	3.700
Mar	0.565	4.450
Apr	0.555	5.420
May	0.506	5.600

Jun	0.429	4.970
Jul	0.348	3.930
Aug	0.405	4.140
Sep	0.475	4.040
Oct	0.535	3.480
Nov	0.559	2.730
Dec	0.608	2.530

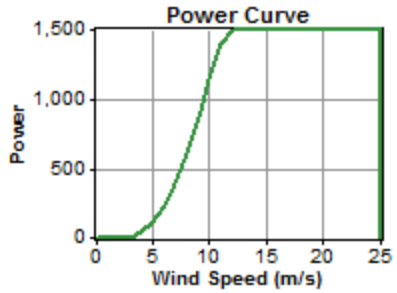
Scaled annual average: 3.98 kWh/m²/d



AC Wind Turbine: GE 1.5sl

Quantity	Capital ($)	Replacement ($)	O&M ($/yr)
5	30,000,000	3,000,000	150,000

Quantities to consider: 0, 5, 10
Lifetime: 20 yr
Hub height: 50 m

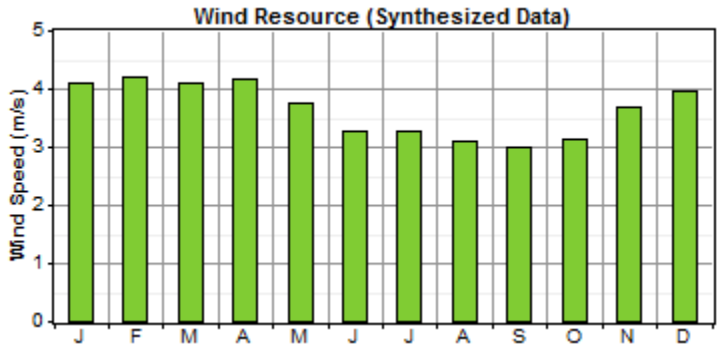


Wind Resource

Data source: Synthetic

Month	Wind Speed (m/s)
Jan	4.09
Feb	4.19
Mar	4.12
Apr	4.17
May	3.75
Jun	3.29
Jul	3.27
Aug	3.09

Sep	3.00
Oct	3.14
Nov	3.70
Dec	3.96



Weibull k:	2.00
Autocorrelation factor:	0.850
Diurnal pattern strength:	0.250
Hour of peak wind speed:	15
Scaled annual average:	3.7, 7.0, 11.0 m/s
Anemometer height:	50 m
Altitude:	0 m
Wind shear profile:	Logarithmic
Surface roughness length:	0.01 m

Converter

Size (kW)	Capital ($)	Replacement ($)	O&M ($/yr)
20,000.000	0	0	0

Sizes to consider:	0, 20,000 kW
Lifetime:	20 yr
Inverter efficiency:	90%
Inverter can parallel with AC generator:	Yes
Rectifier relative capacity:	100%
Rectifier efficiency:	90%

Grid

Rate	Power Price	Sellback Rate	Demand Rate	Applicable
	$/kWh	$/kWh	$/kW/mo.	
Rate W_2	0.04, 0.50, 1.00, 2.00, 3.00	0.25	0	Jan-Dec All week 00:00-24:00

CO2 emissions factor:	632 g/kWh
CO emissions factor:	0 g/kWh
UHC emissions factor:	0 g/kWh
PM emissions factor:	0 g/kWh
SO2 emissions factor:	2.74 g/kWh
NOx emissions factor:	1.34 g/kWh
Interconnection cost:	$ 0
Standby charge:	$ 0/yr
Purchase capacity:	1,000 kW
Sale capacity:	1,000 kW

Economics

Annual real interest rate:	6%
Project lifetime:	20 yr
Capacity shortage penalty:	$ 0/kWh
System fixed capital cost:	$ 1,000
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:	100%
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:	100%
Operating reserve as percentage of wind power output:	0%