

## CAPE ELIZABETH HS POOL ELECTRICAL PV

### -Download a weather file from the NREL NSRDB-

Click Download and type a street address or latitude and longitude to download a weather file from the NREL NSRDB for United States and some international locations. SAM adds the downloaded file to the solar resource library so it will appear in the list below.

[NSRDB Map](#)

### -Choose a weather file from the solar resource library-

Click a name in the list to choose a file from the library. Type a few letters of the name in the search box to filter the list. If your location is not in the library, try downloading a file (see above).

Search for:  Name Name v

Name	Station ID	Latitude	Longitude	Time zone	Elevation	^
USA MA Worchester (TMY2)	94746	42.2667	-71.8667	-5	301	
USA MA Worchester Regional Arpt (TMY3)	725095	42.267	-71.883	-5	300	
USA MD Andrews Afb (TMY3)	745940	38.817	-76.867	-5	86	
USA MD Baltimore (TMY2)	93721	39.1833	-76.6667	-5	47	
USA MD Baltimore Blt-washngtn Int'l (TMY3)	724060	39.167	-76.683	-5	45	
USA MD Hagerstown Regl Bldg (TMY3)	724066	39.7	-77.733	-5	220	v

City	<input type="text" value="Portland Intl Jetport"/>	Time zone	<input type="text" value="GMT -5"/>	Latitude	<input type="text" value="43.65 °N"/>
State	<input type="text" value="ME"/>	Elevation	<input type="text" value="14 m"/>	Longitude	<input type="text" value="-70.3 °E"/>
Country	<input type="text" value="USA"/>	Data Source	<input type="text" value="TMY3"/>	Station ID	<input type="text" value="726060"/>
Data file	<input type="text" value="C:\SAM\2016.3.14\solar_resource\USA ME Portland Intl Jetport (TMY3).csv"/>				

#### -Tools-

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### -Annual Weather Data Summary-

Global horizontal	<input type="text" value="3.88"/>	kWh/m <sup>2</sup> /day	Average temperature	<input type="text" value="7.4"/>	°C
Direct normal (beam)	<input type="text" value="4.01"/>	kWh/m <sup>2</sup> /day	Average wind speed	<input type="text" value="3.6"/>	m/s
Diffuse horizontal	<input type="text" value="1.68"/>	kWh/m <sup>2</sup> /day			

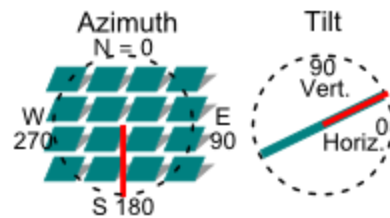
[Visit SAM weather data website](#)

### -Use a specific weather file on disk-

### System Parameters

System nameplate size  kWdc  
Module type   
DC to AC ratio   
Rated inverter size  kWac  
Inverter efficiency  %

### Orientation



Array type   
Tilt  degrees  
Azimuth  degrees  
Ground coverage ratio

### Losses

Soiling	<input type="text" value="2"/> %	Connections	<input type="text" value="0.5"/> %
Shading	<input type="text" value="3"/> %	Light-induced degradation	<input type="text" value="1.5"/> %
Snow	<input type="text" value="0"/> %	Nameplate	<input type="text" value="1"/> %
Mismatch	<input type="text" value="2"/> %	Age	<input type="text" value="0"/> %
Wiring	<input type="text" value="2"/> %	Availability	<input type="text" value="3"/> %

User-specified total system losses  %

Total system losses  %

#### -Shading

Edit shading losses

#### -Curtailment and Availability

Curtailment and availability losses

**Direct Capital Costs**

Module	<input type="text" value="1"/> units	<input type="text" value="150.0"/> kWdc/unit	<input type="text" value="150.0"/> kWdc	<input type="text" value="0.71"/> \$/Wdc	<input type="text" value="\$ 106,500.00"/>
Inverter	<input type="text" value="1"/> units	<input type="text" value="136.4"/> kWac/unit	<input type="text" value="136.4"/> kWac	<input type="text" value="0.21"/> \$/Wdc	<input type="text" value="\$ 31,500.00"/>

	\$	\$/Wdc		\$
Balance of system equipment	<input type="text" value="0.00"/>	<input type="text" value="0.57"/>		<input type="text" value="\$ 85,500.00"/>
Installation labor	<input type="text" value="0.00"/>	<input type="text" value="0.15"/>	=	<input type="text" value="\$ 22,500.00"/>
Installer margin and overhead	<input type="text" value="0.00"/>	<input type="text" value="0.75"/>		<input type="text" value="\$ 112,500.00"/>

Subtotal

**-Contingency**

Contingency  % of subtotal

**Total direct cost**

**Indirect Capital Costs**

	% of direct cost	\$/Wdc	\$
Permitting and environmental studies	<input type="text" value="0"/>	<input type="text" value="0.06"/>	<input type="text" value="\$ 9,000.00"/>
Engineering and developer overhead	<input type="text" value="0"/>	<input type="text" value="0.00"/>	<input type="text" value="\$ 0.00"/>
Grid interconnection	<input type="text" value="0"/>	<input type="text" value="0.00"/>	<input type="text" value="\$ 0.00"/>

**-Land Costs**

Land purchase	<input type="text" value="0"/>	<input type="text" value="0.00"/>	<input type="text" value="\$ 0.00"/>
Land prep. & transmission	<input type="text" value="0"/>	<input type="text" value="0.00"/>	<input type="text" value="\$ 0.00"/>

**-Sales Tax**

Sales tax basis, percent of direct cost  % Sales tax rate  %

**Total indirect cost**

**Total Installed Cost**

**Total installed cost**

Total installed cost per capacity

### Project Term Debt

Debt percent  %  
Loan term  years  
Loan rate  %/year

Net capital cost   
Debt   
WACC  %

The weighted average cost of capital (WACC) is displayed for reference. SAM does not use the value for calculations.

For a project with no debt, set the debt percent to zero.

### Analysis Parameters

Analysis period  years

Inflation rate  %/year

Real discount rate  %/year

Nominal discount rate  %/year

### Tax and Insurance Rates

Federal income tax rate  %/year  
State income tax rate  %/year  
Sales tax  % of total direct cost  
Insurance rate (annual)  % of installed cost

#### -Property Tax-

Assessed percentage  % of installed cost  
Assessed value   
Annual decline  %/year  
Property tax rate  %/year

### Salvage Value

Net salvage value  % of installed cost

End of analysis period value

### Depreciation

#### Federal

- No depreciation  
 5-yr MACRS  
 Straight line  years  
 Custom  percentages

#### State

- No depreciation  
 5-yr MACRS  
 Straight line  years  
 Custom  percentages

The depreciable basis is the sum of total installed cost from the System Costs page and total construction financing cost from the Financing page, less the sum of investment-based incentives (IBI) and 50% of any investment tax credits (ITC).

### OpenEI U.S. Utility Rate Database

Download rate structures for electric utility companies included in the OpenEI Utility Rate Database. After downloading a rate structure, compare the inputs below with a copy of the rate sheet to verify that the information is correct.

Search for rates...

[Go to Open EI Utility Rate Database website](#)

### Save / Load Rate Data

Save rate to file...

Load rate from file...

File

### Metering

- Single meter with monthly rollover credits in kWh
- Single meter with monthly rollover credits in \$
- Single meter with no monthly rollover credits
- Two meters with all generation sold and all load purchased

Year-end sell rate for net metering with kWh credits  \$/kWh

For net metering, choose one of the single-meter options. For two meters, all of the system output is sold to the grid and all of the load is supplied by the grid. See Help for details.

### Monthly Charge

Fixed monthly charge  \$

### Minimum Charges

Monthly minimum charge  \$

Annual minimum charge  \$

### Annual Electricity Cost Escalation

Electricity cost escalation rate  %/yr

In Value mode, SAM applies both escalation and inflation to the total first-year electricity cost to calculate the annual electricity cost in later years. In Schedule mode, inflation does not apply. See Help for details.





Input Time Series Load Data ▾

Electric Load Data

Energy usage  kW  Normalize supplied load profile to monthly utility bill data  
Scaling factor (optional)  Monthly energy usage  kWh

- Monthly Load Summary

	Energy (kWh)	Peak (kW)
Jan	<input type="text" value="493,720.81"/>	<input type="text" value="1,505.22"/>
Feb	<input type="text" value="485,226.50"/>	<input type="text" value="1,559.07"/>
Mar	<input type="text" value="580,314.94"/>	<input type="text" value="1,557.35"/>
Apr	<input type="text" value="601,906.88"/>	<input type="text" value="1,586.85"/>
May	<input type="text" value="688,796.44"/>	<input type="text" value="1,639.37"/>
Jun	<input type="text" value="760,530.00"/>	<input type="text" value="1,646.96"/>
Jul	<input type="text" value="801,503.63"/>	<input type="text" value="1,661.34"/>
Aug	<input type="text" value="814,901.00"/>	<input type="text" value="1,687.62"/>
Sep	<input type="text" value="720,793.63"/>	<input type="text" value="1,665.95"/>
Oct	<input type="text" value="664,864.06"/>	<input type="text" value="1,632.44"/>
Nov	<input type="text" value="566,944.44"/>	<input type="text" value="1,592.84"/>
Dec	<input type="text" value="466,793.09"/>	<input type="text" value="1,496.21"/>
Annual	<input type="text" value="7,646,295.50"/>	<input type="text" value="1,687.62"/>

- Annual Adjustment

Load growth rate  %/yr

In Value mode, the growth rate applies to the previous year's annual kWh load starting in Year 2. In Schedule mode, each year's rate applies to the Year 1 kWh value. See Help for details.



