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How to Create Meteonorm Weather Files for EnergyPlus

Over the last few years, a number of users have needed weather data to use with EnergyPlus but cannot find measured data on the EnergyPlus web site. When possible, we have created weather data using the Meteonorm software. Meteonorm extrapolates hourly data from statistical data for a location. Where statistical data aren't available, Meteonorm interpolates from other nearby sites. Generally a statistical approach is a last resort--weather files generated from statistics will not demonstrate the normal hour-to-hour and day-to-day variability seen in measured data.
To help users create a Meteonorm weather file for EnergyPlus, we developed these guidelines:

Step	Directions
1	Start Meteonorm.
2	Click the Site button.
3	Next click the WMO/OMM button and select the continent. (WMO usually means there's a weather station recording hourly data.)
4	In the search site box, enter the first one or two characters of the desired location name and a '*' and click on the >> button.
5	Select the site (if available) from the list and click OK. If there isn't a WMO site available, go to step A.
6	If the location is there, click on the name and Meteonorm will give any warnings about the data. Write down the warnings (in a text file) and note that you used WMO, Station or City data, and the version of Meteonorm used.
7	Click the Format button, select TMY2, and click OK.
8	Click the Hourly Values button, then click the Save button and gave the TMY2 a name when prompted. (Use the ISO 3-letter country abbreviation followed by the city and the format. For example, for Kathmandu, Nepal, this would be: NPL_Kathmandu_MN5.tm2)
9	Convert to EPW using the EnergyPlus WeatherConverter.
10	Post a .ZIP on the EnergyPlus_Support YahooGroup under Files/Meteonorm_Weather_files. The .ZIP should include the .EPW, .DDY, .STAT, and the warnings text file you created (give it a .INFO extension). Save the TMY2 source and the .AUDIT in a separate .ZIP but do not post it to the YahooGroup.

Each .ZIP includes these

- .STAT (EnergyPlus weather data statistics)
- .EPW (EnergyPlus weather file), and
- .INFO (Information about the source data and limitations from Meteonorm).

In all cases, you should review the .stat file for the location before using any of these files to ensure that it represents the climate of the location as you understand it. In many cases, a nearby location with measured
data will be more appropriate than one derived from statistics. Use these files at your own risk.

If no WMO data are available, try this:

A.	Click the Station button and select the continent again.
B.	In the search site box, enter the first one or two characters of the desired location name and a '*' and click on the >> button.
C.	Select the site (if available) from the list and click OK. If there isn't a site available, go to step Z. If there is a site, go back to step 6.

Finally as a last resort, try this:

Z.	Click the Cities button and select the continent again.
Y.	In the search site box, enter the first one or two characters of the desired location name and a '*' and click on the >> button.
X.	Select the site (if available) from the list and click OK. If there isn't a site available, you are out of luck. If there is a site, go back to step 6.

NOTE: Quality of data declines exponentially if no WMO or Station data is available. Steps Z-X should be used if when no other data are available.

Please note that Meteotest significantly updated the wind and other calculations [hourly wind direction in TMY2, which we use, was constant ... the update makes them variable]. If you received a file from the EnergyPlus team before early December 2004, we strongly recommend that you download the new file. We are working on getting data for another 200 locations over the next few months; targets include Italy (60+ files), Brazil, Ghana, Kenya, Ethiopia, Nepal, Bangladesh, and China. All except Italy are from the UNEP SWERA project (so we're waiting on the data to become available on the SWERA web site **swera.unep.net/swera/**). As always, if you know of sources of weather data that we might be able to share with the EnergyPlus community, please contact **Dru Crawley.**