HOW TO GUIDE

Adjusting time zone and daylight saving time settings

energyPRO

EMD International A/S
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About energyPRO

energyPRO is a Windows-based modeling software package for combined techno-economic analysis and optimisation of complex energy projects with a combined supply of electricity and thermal energy from multiple different energy producing units.

The unique programming in energyPRO optimises the operations of the plant including energy storage (heat, fuel, cold and electrical storages) against technical and financial parameters to provide a detailed specification for the provision of the defined energy demands, including heating, cooling and electricity use.

energyPRO also provides the user with a detailed financial plan in a standard format approved by international banks and funding institutions. The software enables the user to calculate and produce a report of the emissions by the proposed project.

energyPRO is very user-friendly and is the most advanced and flexible software package for making a combined technical and economic analysis of multi-dimensional energy projects.

For further information concerning the applications of energyPRO please visit www.emd.dk.

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EMD International A/S, June 2016

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Introduction

Time series is a fundamental data format in energyPRO, consisting of a set of values each connected to a specific date and time. Depending on the type of data, some time series are be in daylight saving time and some are not. Typically, time series with meteorological data is in standard time while time series with wholesale prices such as electricity prices are in daylight saving time. Furthermore, some time series are stated in a different time zone than the project.

This means that the selection of time zone and daylight saving time is important when it comes to correct use of time series and this guide therefore shows you how to change these in energyPRO.

Setting the project time zone

When creating a new project file, the time zone will automatically be the same as the time zone used by the computer. In order to change the time zone one must right-click on the "External conditions"-folder in the Input data-window and click "open". This will open the window shown in Figure 1.

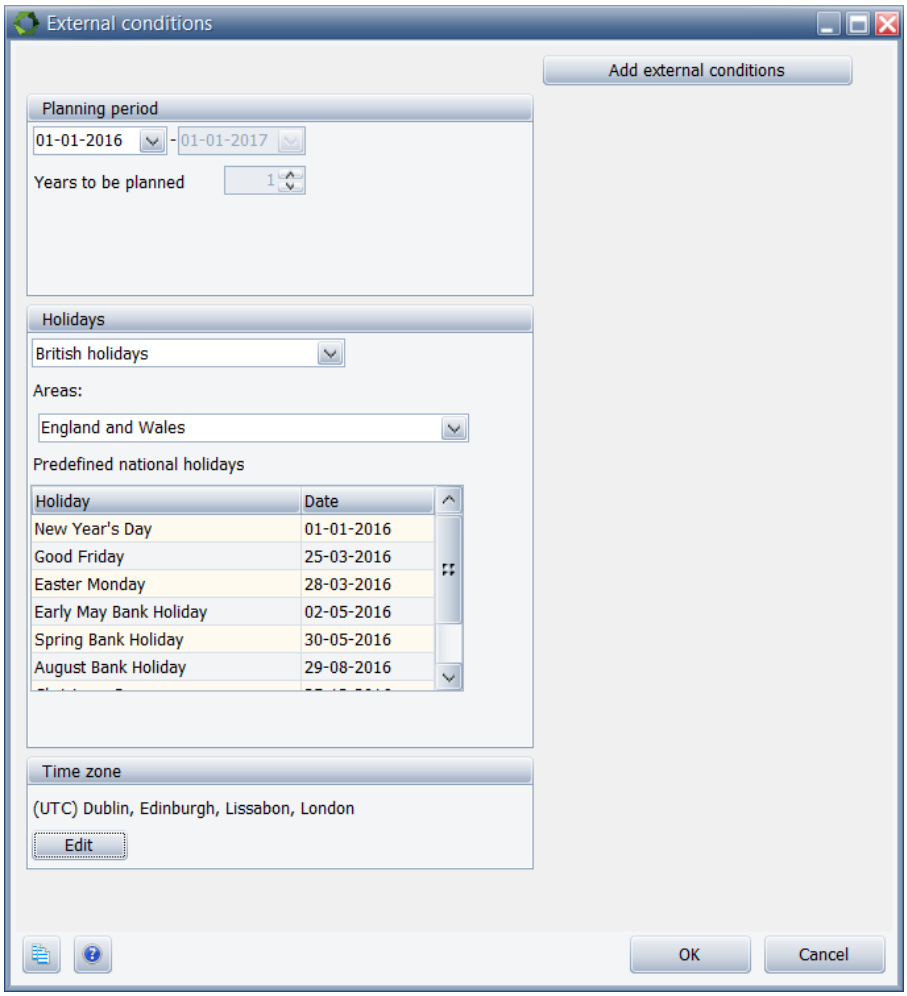

Figure 1. Appearing window when opening "External conditions"

If you wish to work on a project located in a different time zone press "Edit" and change the time zone accordingly.

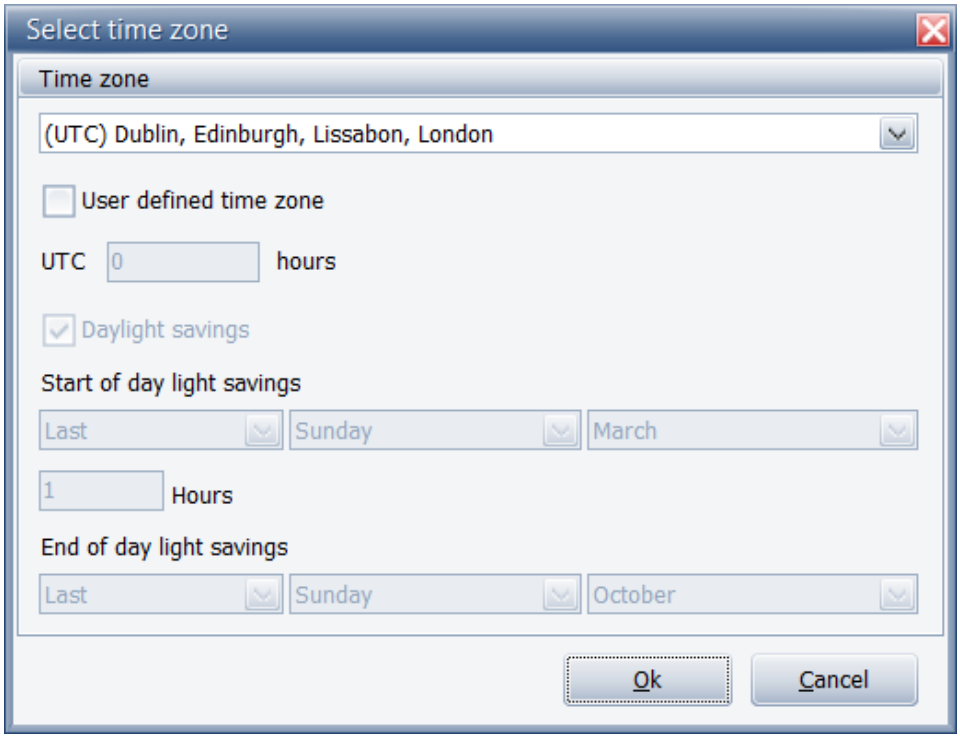

Figure 2. Window for time zone and daylight saving settings

To change the time zone, press on the arrow in the right upper corner where a number of options appear as seen on Figure 3.

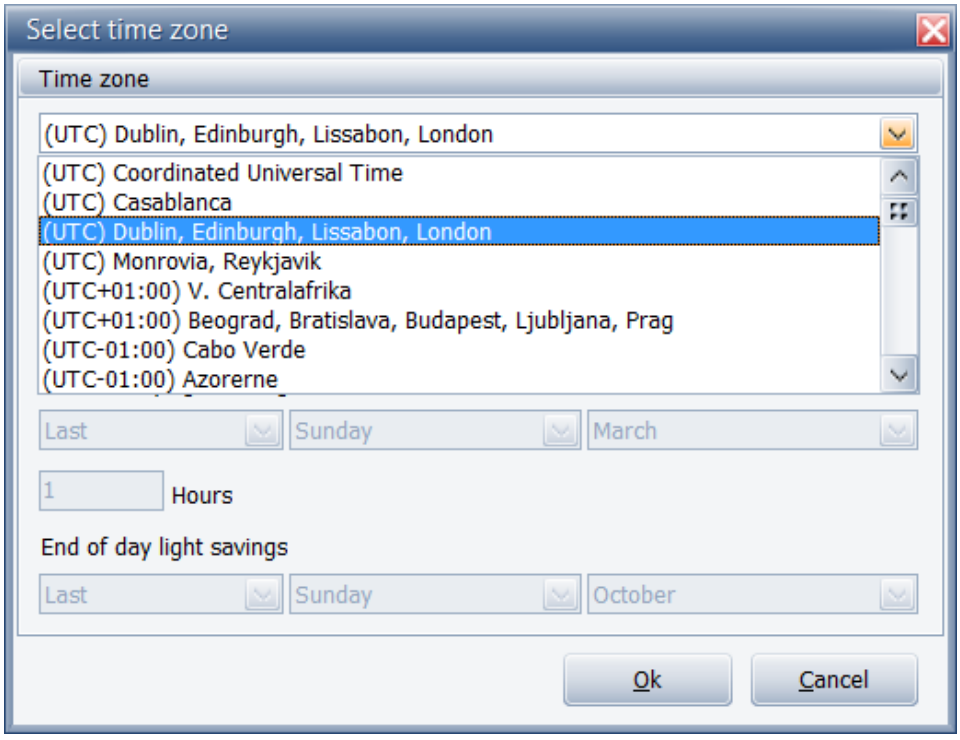

Figure 3. Select the preferred time zone.

You can also create a user-defined time zone like the one shown in Figure 4.

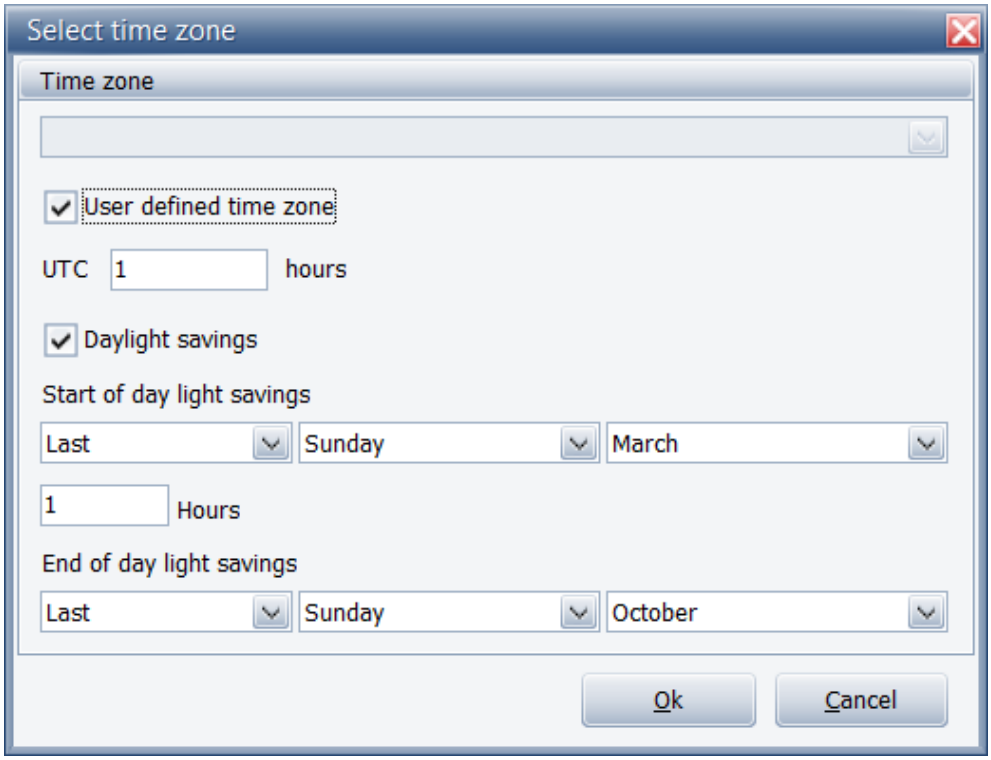

Figure 4. User-defined time zone

Here you can specify the offset to UTC. In this case the time zone is UTC +1 hour.

Furthermore, it is possible to enable/disable daylight savings or to further detail the daylight saving settings.

Setting daylight saving time in time series

When opening a time series, you can select if the time series is in daylight saving time or not. If the time series is in daylight saving time, mark the checkbox highlighted in Figure 5.

This will typically be the case for time series with wholesale prices such as electricity spot prices and electricity balancing prices. Meteorological data is usually not in daylight saving time.

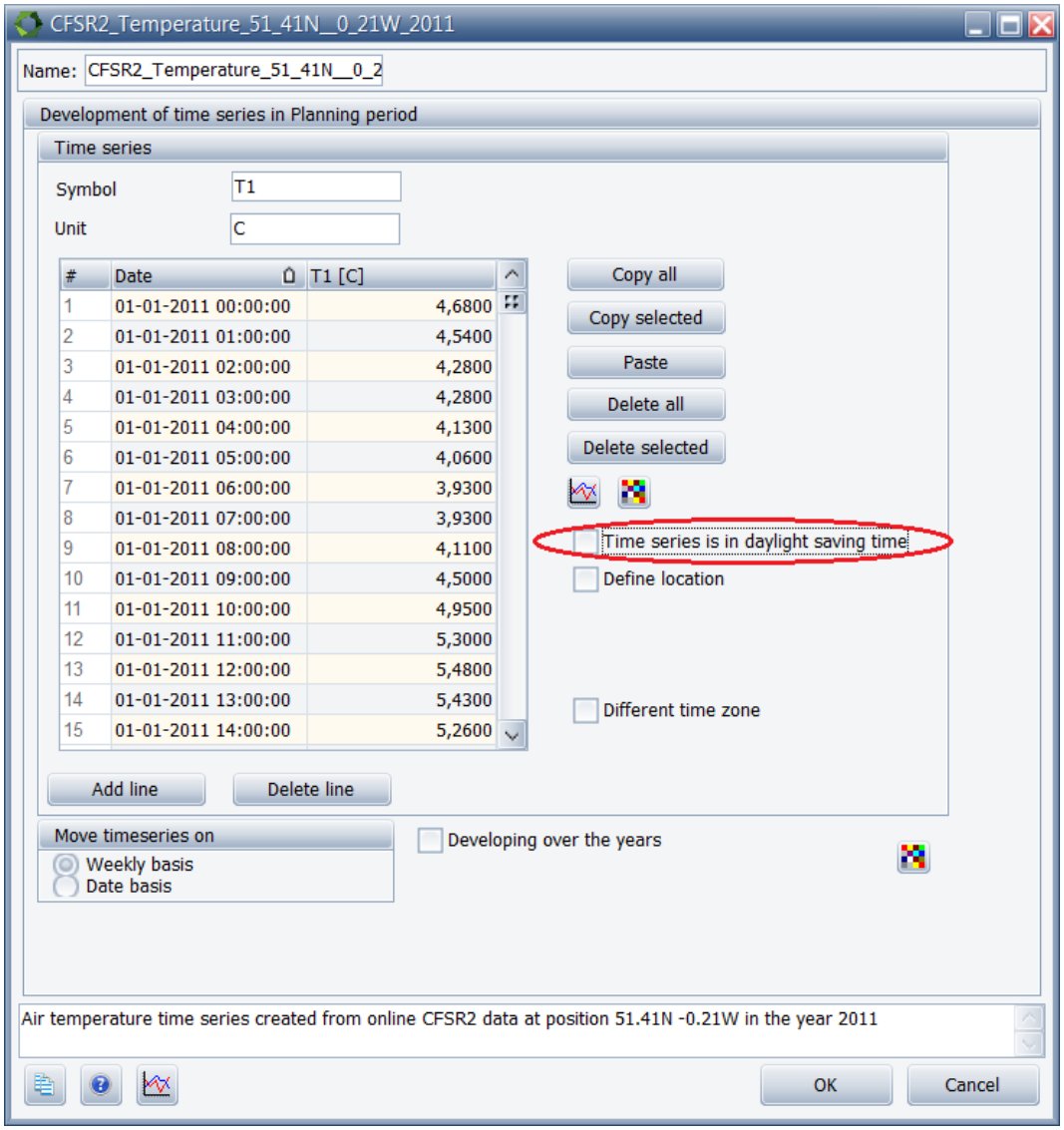

Figure 5. Selecting if the time series is in daylight saving time

If the projects time zone is with daylight saving time and the time series is with daylight saving time, the time series is not changed. However, if the time series is in standard time, the values are moved one hour forward in the daylight saving time period.

Conversely, if the project's time zone is without daylight saving time and the time series is in daylight saving time, the values are moved one hour backward in the daylight saving time period.

The graph on Figure 6 shows the original time series, which is in standard time while the second graph on Figure 7 shows the time series in the planning period in daylight saving time. As it appears, the values are moved one hour forward.

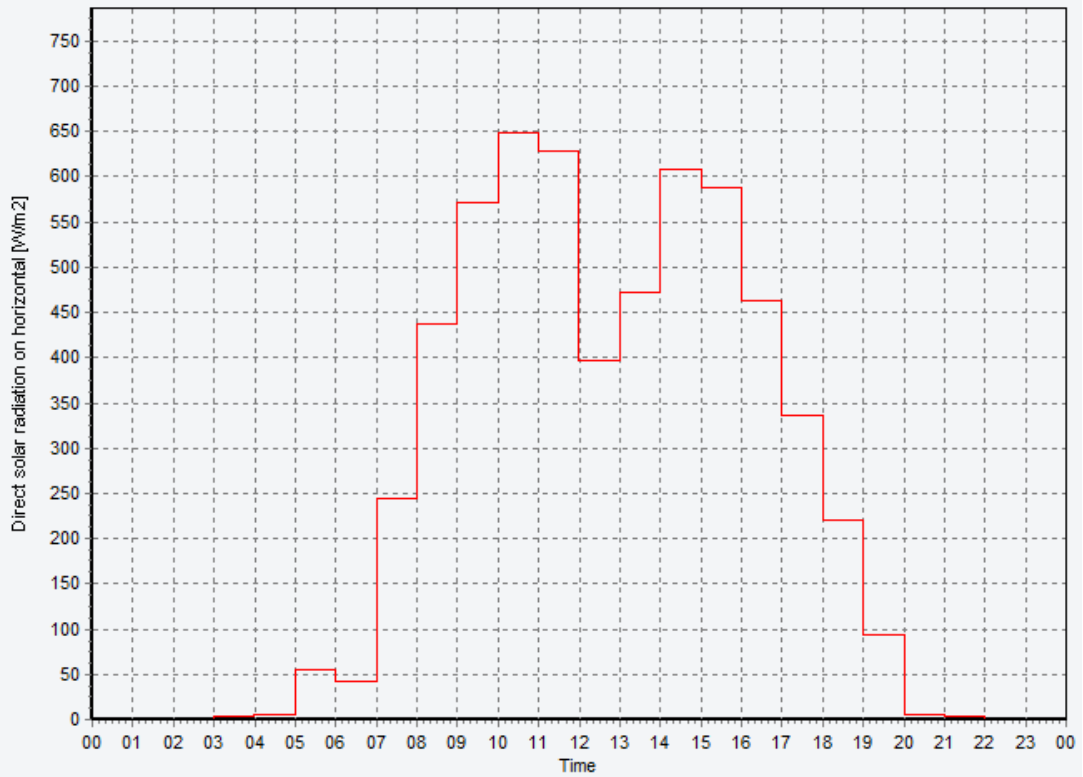

Figure 6. Original time series in standard time

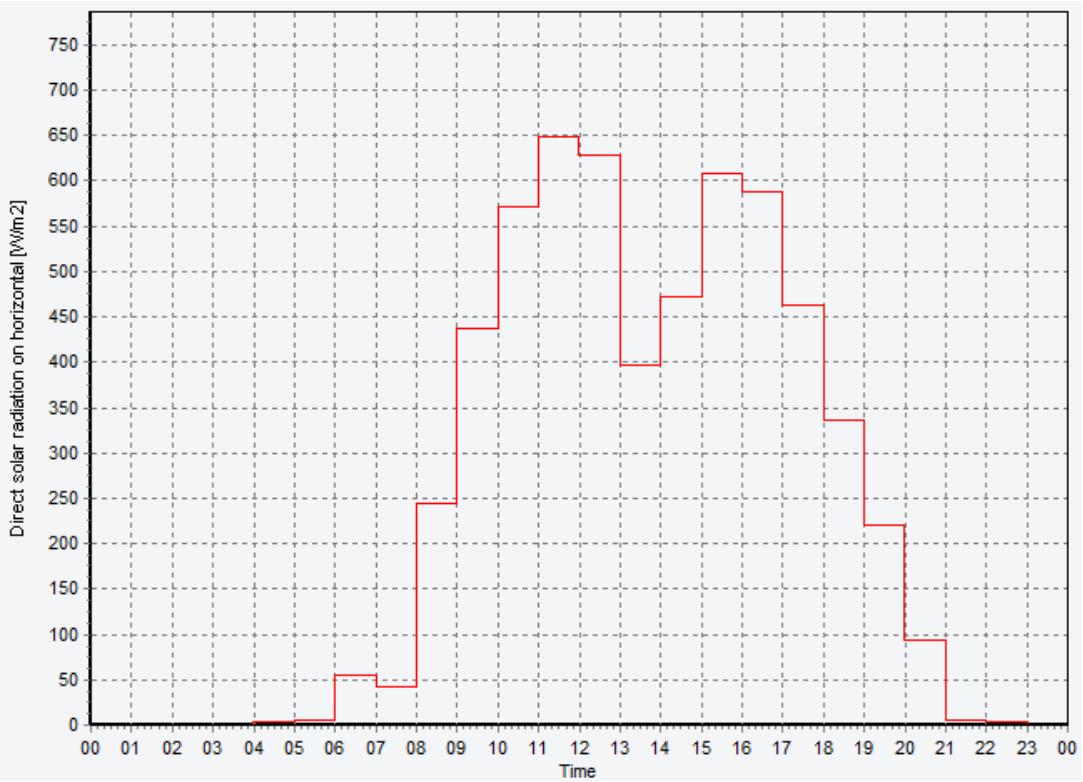

Figure 7. Original time seires in daylight saving time

Setting the time zone of time series

If the time series is in a different time zone than the time zone of the project, the checkbox, which is highlighted in Figure 8, should be selected. This gives you the possibility to edit the time zone for the time series.

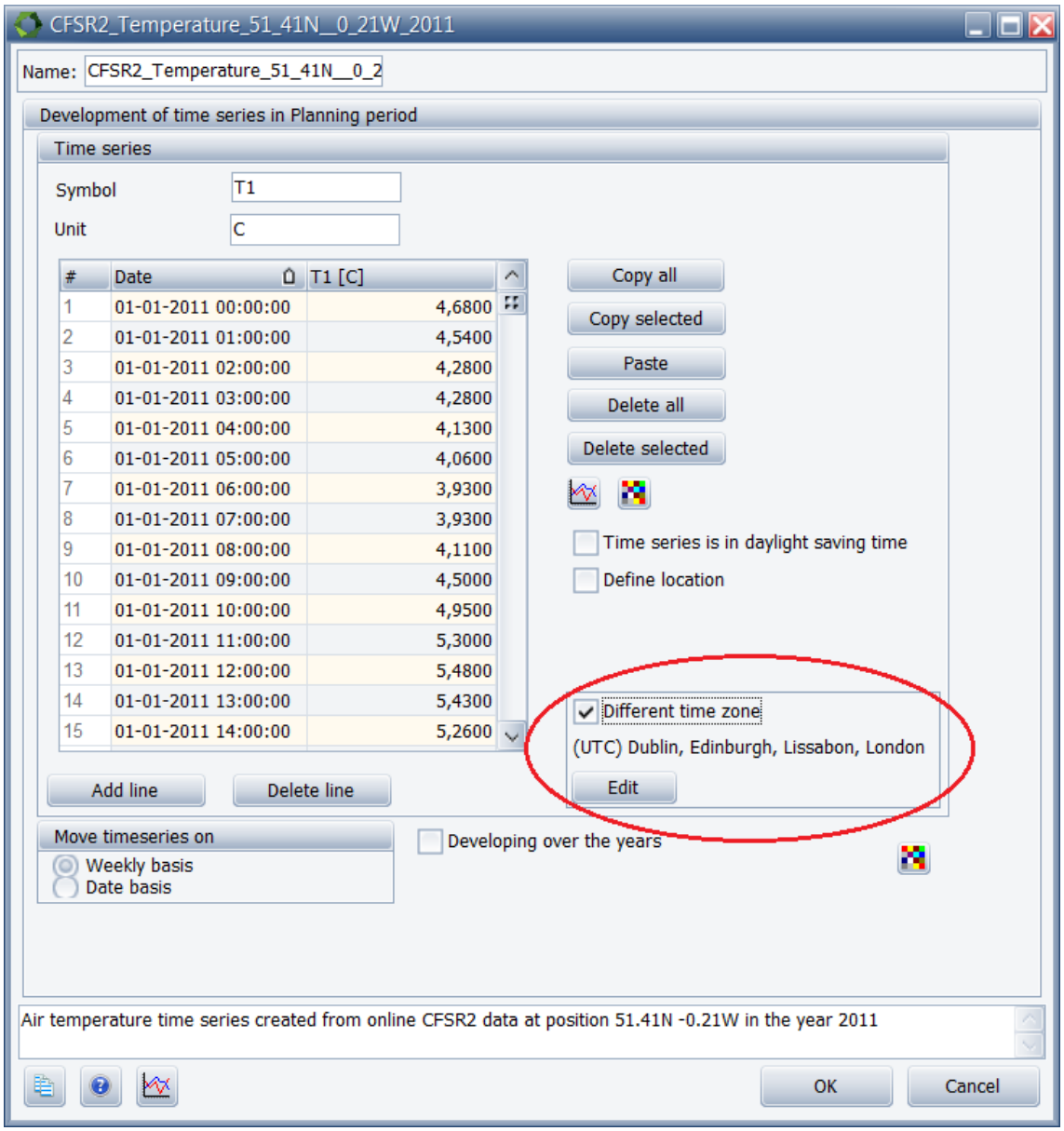

Figure 8. Select the checkbox "Different time zone" to change the time zone.

Click on "Edit" to select a different time zone.

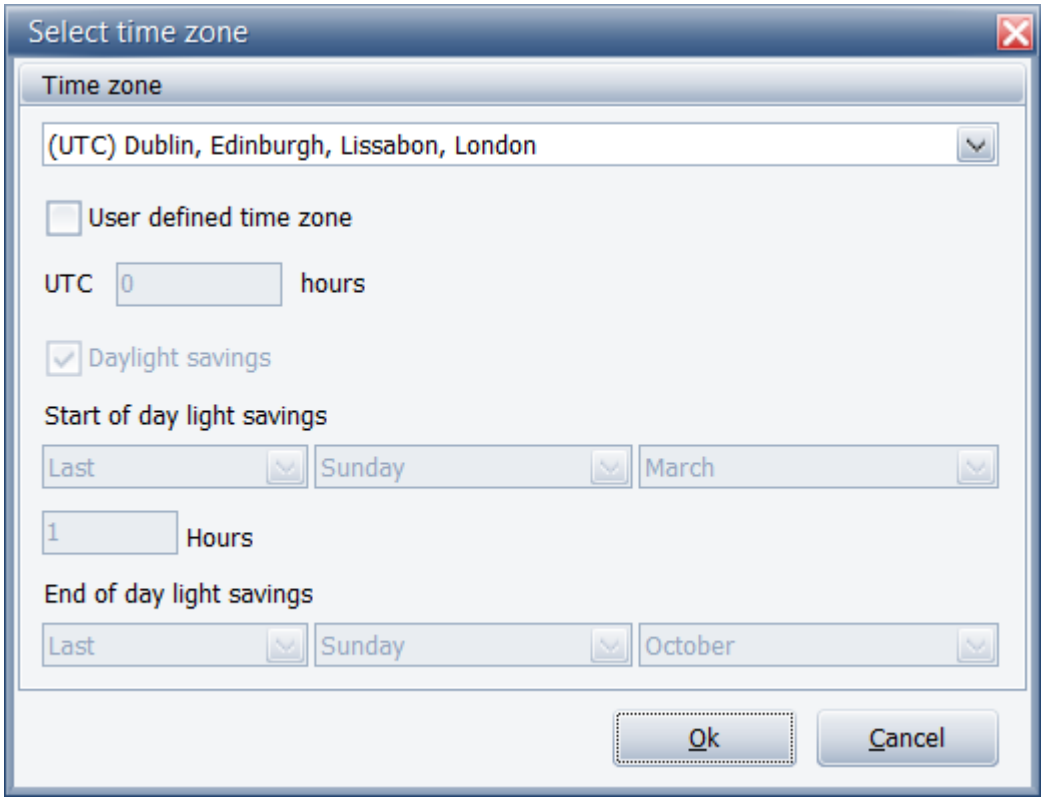

Figure 9. Adjust the time zone of the time series

If the time series is in a different time zone than the project, it is converted according to the difference in UTC offset.

Setting the location of the time series

The geographical location related to the data in the time series can be specified by marking the checkbox "Define location" as indicated in .

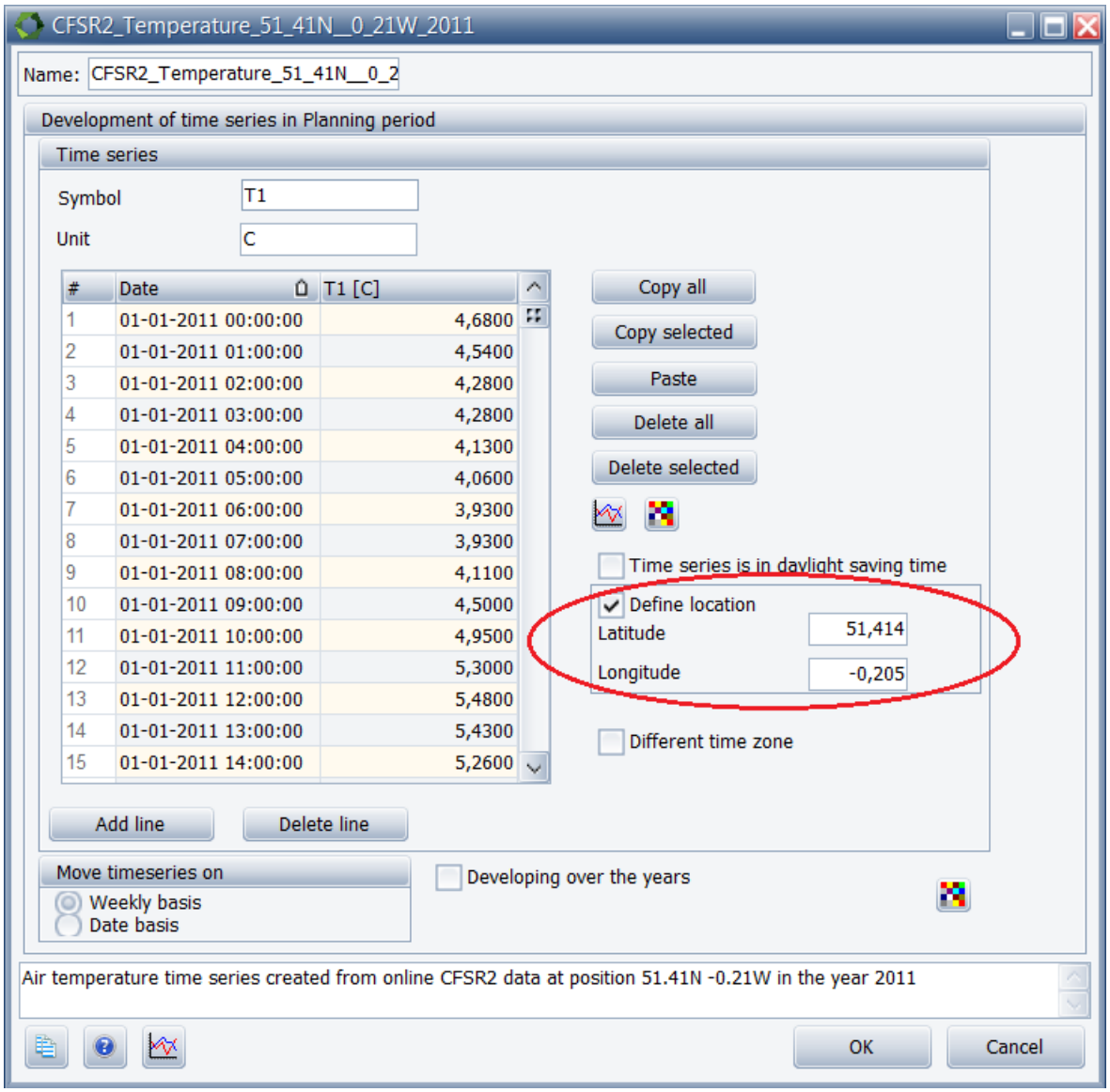

Figure 10. Define the location related to the data in the time series

This checkbox has to be marked if the time series contains solar radiation values and is used in a solar collector or photovoltaic. To define the location, values for Latitude and Longitude has to be added.

The latitude and longitude are specified in decimal degrees. The latitude has positive values north of equator and negative values south of equator. The longitude has positive values east of Greenwich Mean Time (UTC) and negative values west of Greenwich Mean Time.

Please notice, that you can find more information on how to use energyPRO in the How to Guides, User's Guide and tutorials on EMD's website:

http://www.emd.dk/energypro/download/tutorials-and-how-to-guides/