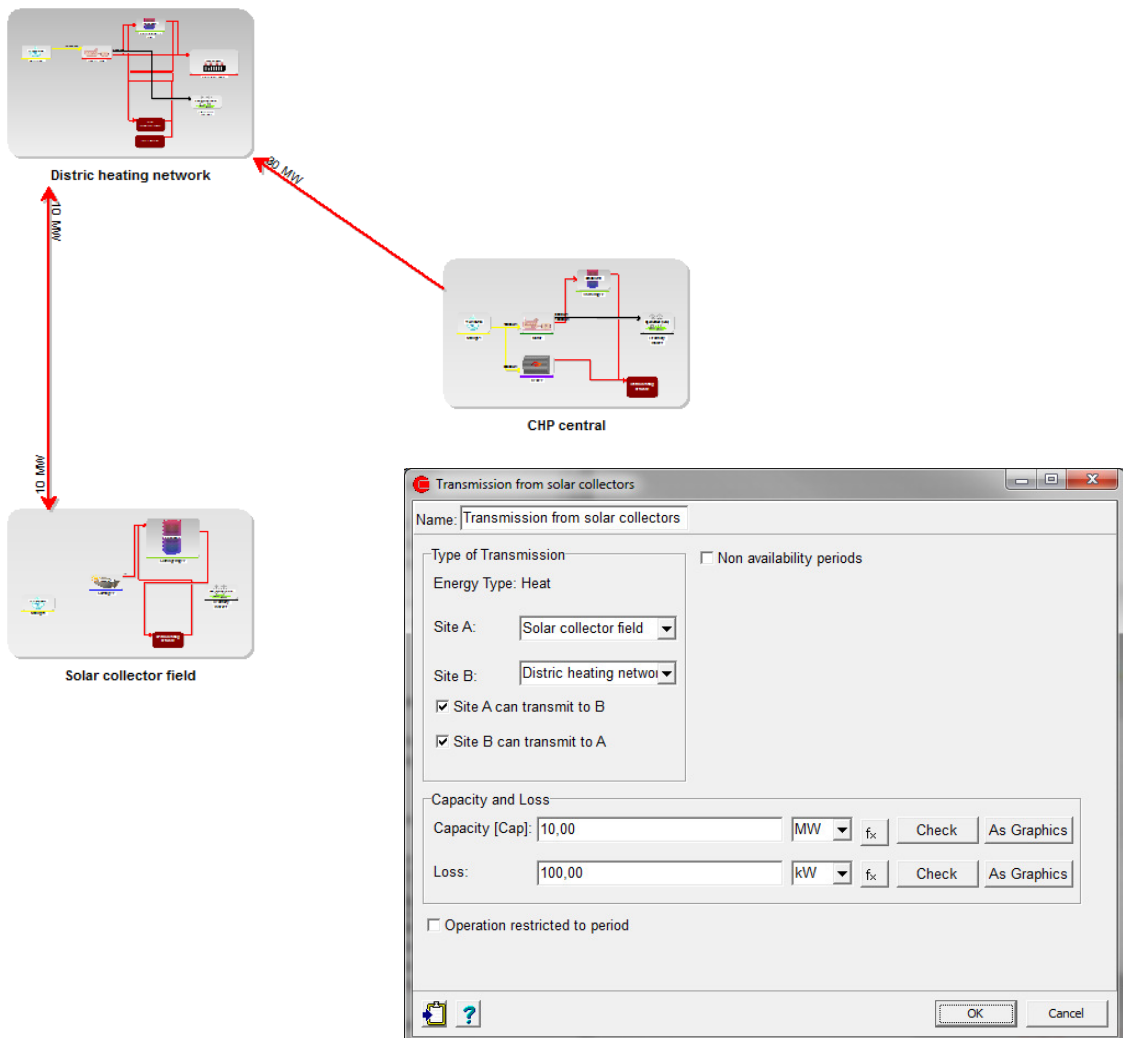




Improved REGION in energyPRO 4.0.2



Content

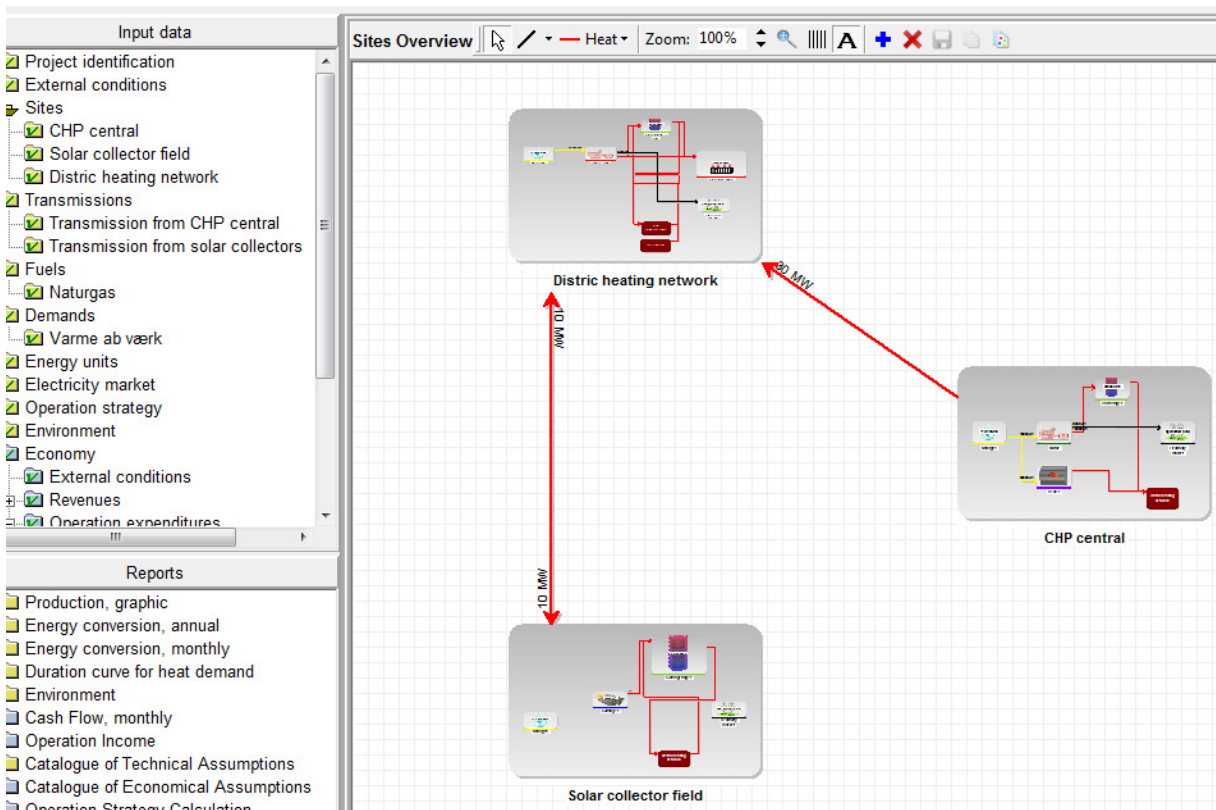
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1. Introduction

The module REGION has been improved in energyPRO 4.0.2. Now it is possible to make a transmission of heat, cooling and process heat from one site to another. By this, it is possible to make detailed studies of energy systems with different locations.

2. User interface

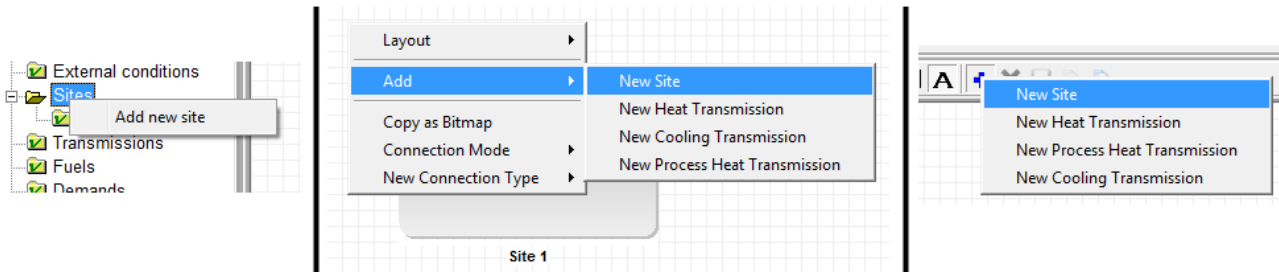
At Sites Overview you can see the different sites and the transmissions between the sites. At the site overview you can add new sites and add new transmissions. It is possible to add heat, process heat and cooling transmission lines.



The graphical overview of a single site is shown either by clicking on its subfolder in the Sites branch or by double-clicking on it in the graphical Sites overview.

2.1 Adding more sites

If you have purchased the REGION module you can add more sites to a project in 3 different ways as shown below.

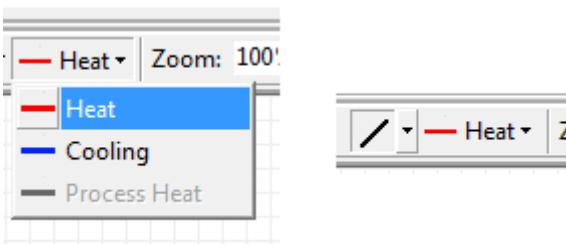


New sites can be added either by right-clicking on the Sites main folder in the tree structure, via the popup menu on the graphical interface or via the Add button in the graphical toolbar.

2.2 Adding transmissions

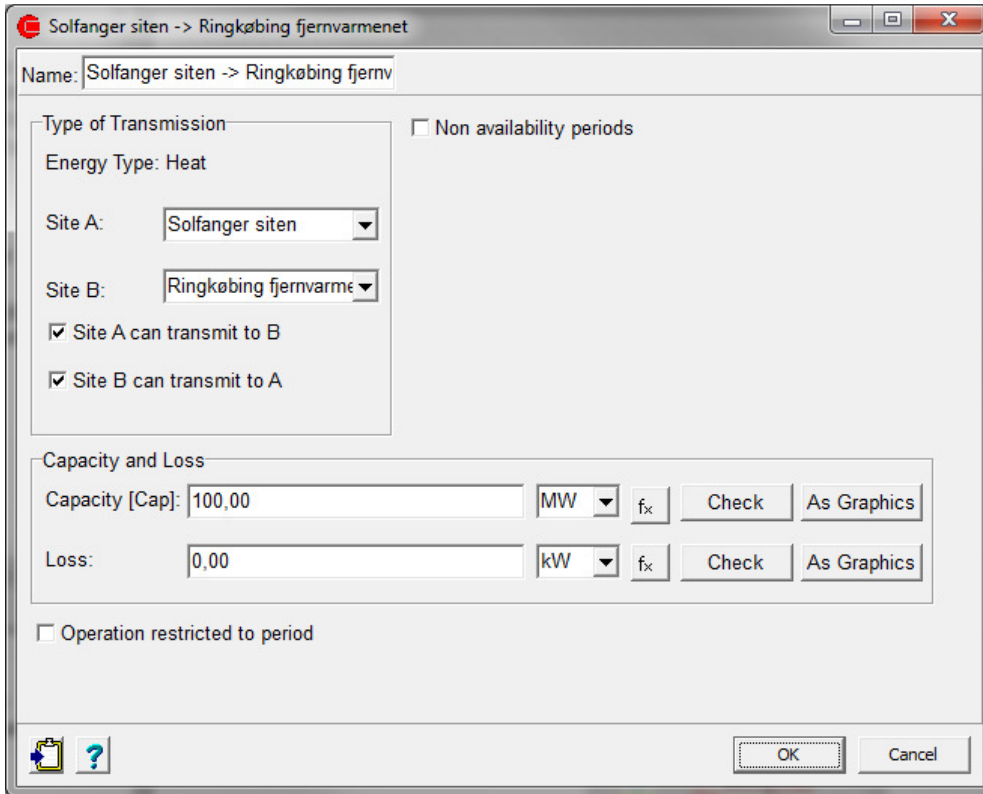
The graphical sites overview can also be used to add transmissions between sites. As it can be seen in the figure below transmissions can be added via the popup menu on the graphical interface or via the Add button in the toolbar. This way of adding transmissions will simply add a transmission between 2 sites that are not yet connected or report an error if all sites are already connected.

Another way of adding transmissions is by dragging a line between 2 sites. First you select the type of transmission in the toolbar and you then select connection mode.



3. Transmissions

The transmission interface looks as follow:



Each transmission is defined by the following attributes:

- Energy type, which can be: Heat, Cooling and Process Heat
- The 2 sites that the transmission is connected to
- Attribute that tells in what directions the energy can be transmitted
- The capacity of the transmission, which can be defined by functions and time series. The capacity is the same in both directions.
- The loss on the transmission, which can also be defined by functions and time series. In the current version of energyPRO the loss is not relative to the amount of energy transmitted, but a constant loss, that can vary over time.

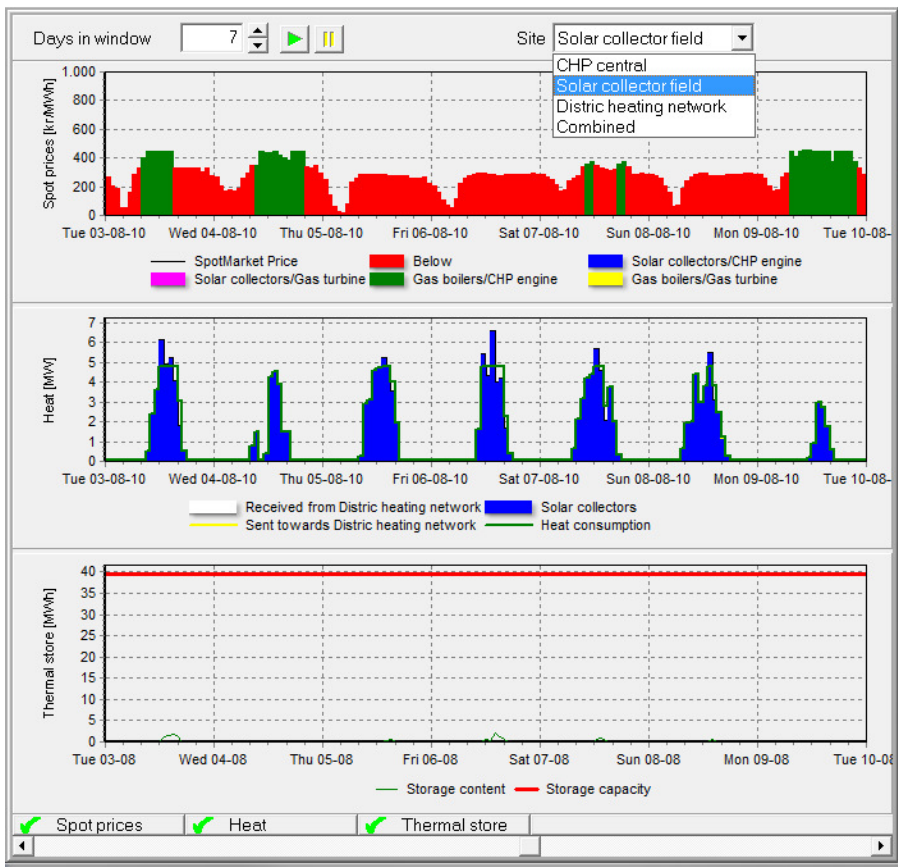
4. Operation strategy

In the operation strategy you specify whether an energy unit is allowed to transmit energy to other sites.

Miscellaneous	Production to thermal store allowed	Transmit to other sites allowed
Gas turbine	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CHP engine	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Gas boilers	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Solar collectors	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

5. Results

Below is shown the Production, graphic. You can choose between the different sites and a combined view.



Likewise, other reports, such as Duration curves and Energy conversion, annual, show the result by site and overall.