About the “input files” for the Stand Alone Tool – Additional Information

This document provides additional information regarding the inputs files for the StandAlone Tool. These are used for more customized simulations.

There are five text files in the folder "BTES_StandAloneTool_vx\DataFromUser":

File 1 - TemperatureFile_Amb: It is a one-column table that contains daily averaged values of the ambient temperature in [°C]

File 2 – FlowRateFile: It is a one-column table with daily averaged values of the district heating mass flow in [kg/h]. This mass flow is shown in the images “DH mass flow 1 – ID3” and “DH mass flow 2 – ID3” in the “Help Section” of the Stand Alone Tool.

File 3 - PowerLimitFile_HEF: It is a one-column table with daily averaged values of the surplus heat generated by the CHP plant in [kJ/h]. This value is used as "power limit" for the BTES system since it is the maximum available heat to be injected in the storage. This power is shown in the image “Charging power – ID7” in the “Help Section” of the Stand Alone Tool.

File 4 - TemperatureFile_DH: It is a one-column table that contains daily averaged values of the water temperature, in [°C], entering and leaving the CHP plant´s steam condenser. For the charging period, summer, the value refers to the temperature of DH water leaving the steam condenser and going into the heat exchanger (image “DH temp charging – ID5” in the “Help Section” of the Stand Alone Tool). For the discharging period, winter, the value refers to the temperature of the DH water leaving the CHP plant´s flue gas condenser and entering the heat pump´s condenser (image “DH temp discharging – ID9” in the “Help Section” of the Stand Alone Tool).

File 5 - PowerLimitFile_HP: It is a one-column table with daily averaged values of the allowed heat injection into the DH system (heat pump maximum output) [kJ/h]. This power is shown in the image “Discharging power – ID11” in the “Help Section” of the Stand Alone Tool.

File 1 is always used by the model. Files 2, 3, 4 and 5 are used as inputs for the model if it is defined by the user with the "mode parameters" (parameter ID2, ID4, ID6 and ID10) in the section "1. Define Default Parameters").

These files can be replaced with others containing new data, however, the name of the files and its format must be the same. Notice that each file has 366 data points. The first point is used as a starting point (day 0). The other 365 points represent the value of each day of the year. These last 365 points are repeated for simulations longer than one year. The simulation (and the data files) considers "day 1" as the first day of the charging period. Therefore, the first half* of the file contains data for the charging period, and the second half*, for the discharging period. Be aware of the decimal separator "." not "," and the units [kg/h], not [kg/s] and [kj/h] not [MW].

* It is half by default but the user can choose the length of the charging period with the parameter 7 "Charging period length".