Rumi

An open-source energy systems modelling platform
developed by Prayas (Energy Group)

Postprocessing documentation

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1   Introduction

The postprocessing module of Rumi works on the outputs produced by the demand and supply
modules, and produces some useful aggregations. In the current version, it computes the total
emissions of each emission type that has been specified in the model. The emission types of interest are
specified as part of the common input file `EmissionTypes.csv`, with the default emission factors
for these emission types being specified in the common input file
`PhysicalCarrierEmissions.csv`. These default emission factors can be overridden for specific
uses of each energy carrier. For example, if different emission factors are desired for their usage in a
particular energy service technology, it is specified in the demand input file
`ST_EmissionDetails.csv` and if different emissions factors are desired for their usage in a
particular energy conversion technology, it is specified in the supply input file
`ECT_EmissionDetails.csv`. The relevant inputs are taken from the model instance and scenario
that is specified on the command line. The required demand and supply outputs are by default again
taken from the specified model instance and scenario; in case either the demand or the supply outputs
(or both) were produced to a different folder, the user can specify this by using the appropriate
command line parameters (see the `README.md` file available in the root directory of the Rumi platform
repository).

Emissions are only associated with physical energy carriers, and these may arise in two different
situations. One is when the energy carrier is used for some end-use and the second is when the energy
carrier is used as an input to some energy conversion technology. The postprocessing command
computes these two kinds of emissions into separate files as described in the next section.

2   Outputs of the postprocessing component

The output files produced by the postprocessing component are placed by default in a directory called
`PostProcess/Output` under the root directory of the scenario that is specified, though this can be
over-ridden by the user through a command line parameter (see the `README.md` file available in the
root directory of the Rumi platform repository). The following table lists all the output files that are
produced and a brief description of each.

File name	Description
EndUseEmissions.csv	For each physical energy carrier and emission type, the emissions from that physical carrier for each demand sector, energy service, service technology, consumer type, geographic unit and time unit. Notes: • The service technology column would be empty if the energy demand is not specified in a bottom-up manner for some demand sector and energy service. • In case, the entire end-use demand file is provided exogenously (i.e. not computed by the Rumi demand module), then the columns corresponding to the demand sector, energy service and service technology would be absent because this information is not provided.
ECTEmissions.csv	For each physical energy carrier and emission type, the emissions from that physical carrier when it is used as an input to any energy conversion technology for each geographic unit and time unit.