SpineModel - A Generic Energy System Model Generator


1 KU Leuven, Leuven, Belgium
2 KTH Royal Institute of Technology, Stockholm, Sweden
3 Energy Reform Ltd, Dublin, Ireland
4 VTT Technical Research Centre of Finland, Espoo, Finland
5 University College Dublin, Dublin, Ireland

Why?
Currently a vast variety of energy system models tailor-made to serve a specific purpose:

- hurdle for modellers to get familiar with different models and terminologies
- problem dependent representation of data exacerbates the linkage of different models

What?
Through a problem independent data structure and a generic formulation of the optimization problem, SpineModel in combination with SpineToolbox can be used to replace a suite of custom models. Hence, users can run different models e.g. long-term planning models, unit commitment, etc. using the same database. The fully open-source tool SpineModel is developed in the fast and open-source programming language Julia. Through consistent terminology across different energy systems, flexibility to link model types amongst each other.

How?

SpineToolbox: problem independent data structure

- Original data source
- Data conversion
- Problem independent data store
- Spine API
- SpinInterface.jl
- SpineModel.jl

SpineModel: problem agnostic formulation

- Generic formulation for a wide range of applications
- Flexible temporal and geographical structure
- Easily extendable for user-specific constraints

https://github.com/Spine-project/Spine-Toolbox
https://github.com/Spine-project/SpineInterface.jl
https://github.com/Spine-project/Spine-Model

Contact
Maren Ihlemann
maren.ihlemann@kuleuven.be

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