# A Modelica-Based Framework for District Heating Grid Simulation

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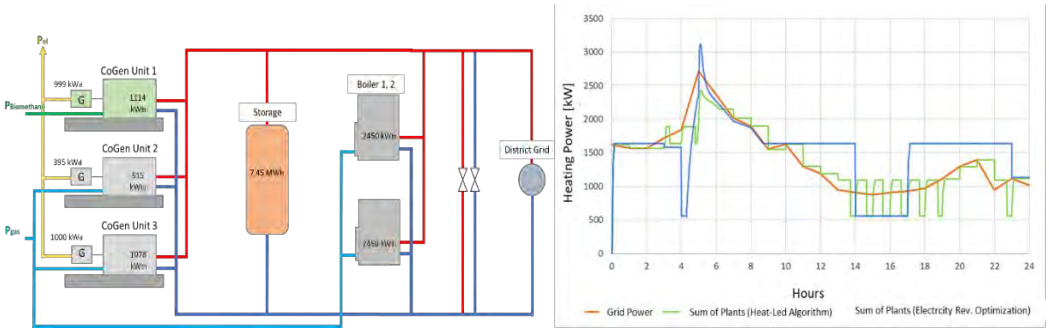
The interdisciplinary modelling language Modelica is increasingly used in the design and evaluation of energy systems. Heat supply represents a considerable share of the global energy supply. Especially in European cities, district heating grids are often used and implemented for heat coverage. The increasing integration of renewable energies and the extension of existing grids require engineers to be able to analyze and evaluate the behavior of such grids, not only statically in certain operating conditions, but also dynamically to enable the representation of complex system interaction.




This paper shows and describes a new approach as to how Modelica models can be used to evaluate the dynamic behavior of district heating grids. It furthermore introduces a consistent framework to parameterize these models with GIS-data via the COM interface. The advantages of the shown approach compared to previously used static methods are shown with specific case studies.