



HIGH PERFORMANCE CENTER

DYNAFLEX®

FLEXIBLE SOLUTIONS FOR THE ENERGY
TRANSITION AND RAW MATERIALS SHIFT

SYSTEM COUPLING

POWER PLANT SIMULATION AND POWER-TO-X

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Open-Minded

Against the background of the continuous expansion of the usage of renewable energy sources, there is a huge potential in the intelligent coupling of sectors and their energy flows and material flows. In order to cover the fluctuating residual load, conventional power plants have the requirement for a flexible operation in terms of different load points.

The integration of power-based processes is investigated as energy storage by the DYNAFLEX® performance center. Furthermore, the interaction between renewable energy sources and conventional power plants within the system boundary »chemical site« will be examined.

Keywords

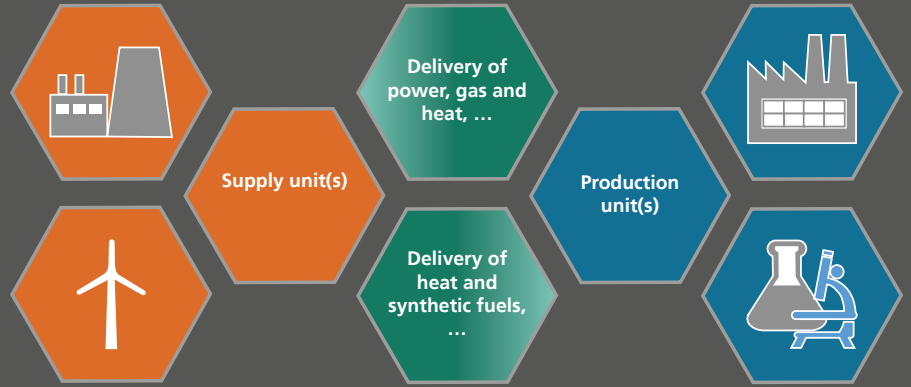
- Power Plant Technology
- Sector Coupling
- Increasing Efficiency
- Environmental Engineering
- Dynamic Process Simulation

Industrial sectors

- Mechanical Engineering and Plant Design
- Energy Supply



INDUSTRIAL SECTOR COUPLING



Technological specification

The following software packages are used at our chair for the construction and development of the simulation models:

- **ANSYS Fluent** for CFD-calculation of combustion chambers
- **EBSILON Professional** for the stationary simulation of thermal power plants
- **Dymola/Modelica** for the dynamic simulation of thermal power plants and for processes in context of sector coupling
- **Aspen Plus®** for the stationary and dynamic simulation of chemical processes (Power-to-X technologies) like methanol synthesis based on the usage of carbon-dioxide (CCU)

Our service

The services of the Chair of Environmental Process Engineering and Plant Design refer to the support and preparation of conceptional solutions for power engineering and process engineering.

With the help of simulation models, we carry out process optimisations and develop operating strategies taking economical boundary conditions into account.

Your benefit

- Cost efficiency and cost reduction
- Emission reduction (reduction of carbon-dioxide emissions)
- Increased security of supply
- Recognition and assessment of potentials in sector coupling

Further information

www.dynaflex.de

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