

Market Access for Smaller Size Intelligent Electricity Generation: The MASSIG Project

Partners:

Fraunhofer ISE, Germany (Co-ordinator)
 BadenovaWÄRMEPLUS GmbH & Co. KG, Germany,
 EMD International A/S, Denmark,
 The University of Manchester, Great Britain
 European Renewable Energy Council, Belgium,
 Technical University of Lodz, Poland,
 Energy Economics Group, Vienna University of Technology, Austria



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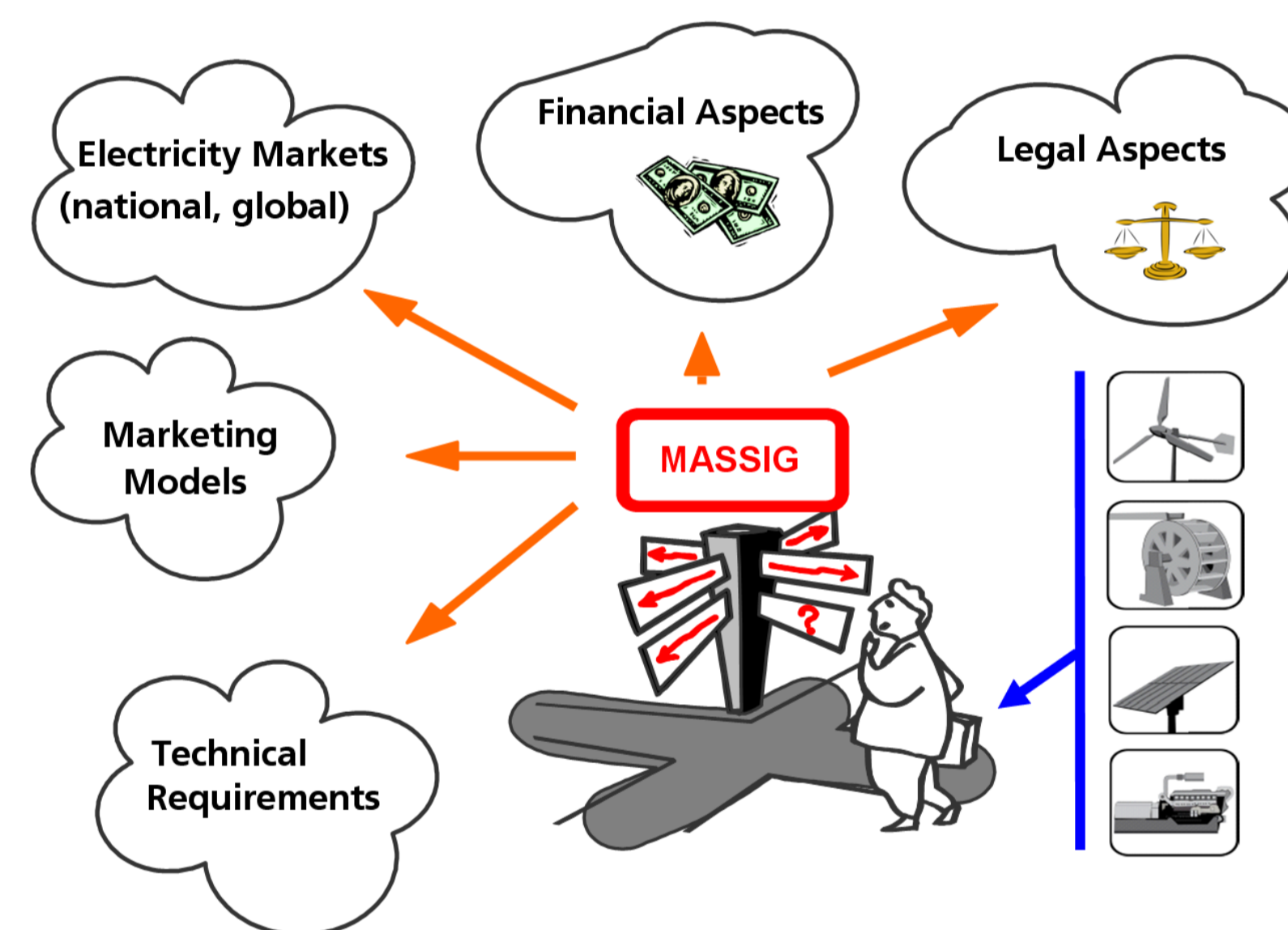
Main objectives

- Tools and guidance for investors and owners of Renewables (RES) and Distributed Generation (DG) for innovative marketing options.
- Focus: small and medium size grid connected generators, technical and non- technical pre-conditions for market products, national regulatory regimes.

Background

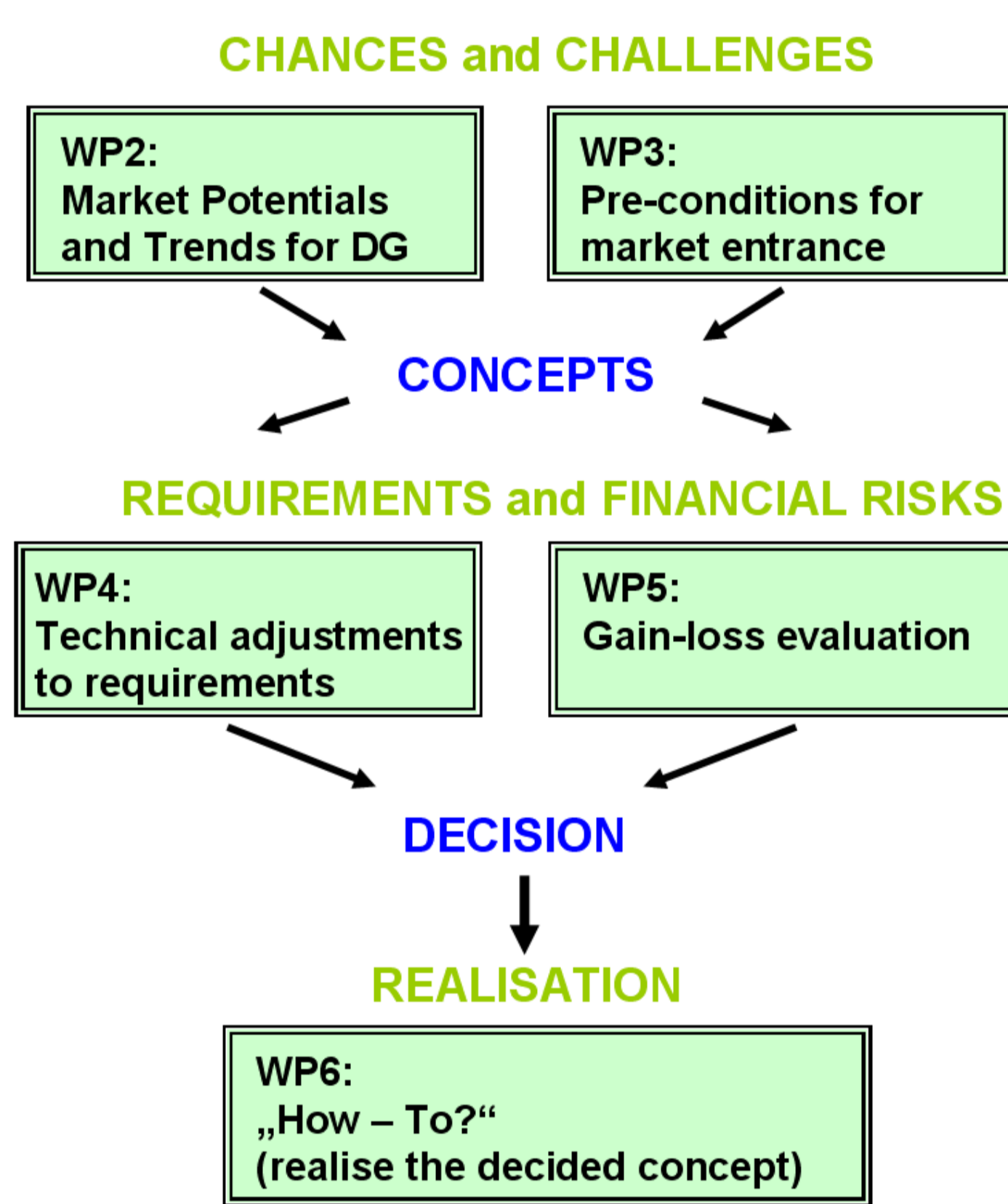
- DG and RES gradually need to be integrated into the liberalised national and international electricity markets.
- Owners of smaller and medium size DG / RES normally have no competence nor capability for entering "big markets" by themselves, meaning a competitive disadvantage!
- Even today there exist a number of ideas and approaches for prospective innovative marketing solutions and services allowing DG/RES to earn money.

The MASSIG project intends to identify and describe such promising market options.



Exciting challenges:

- How to serve the needs of the "big" electricity markets by "small" DG / RES?
- How to integrate fluctuating generation (wind, PV, ..) in this context?
- How to match with national regulatory regimes?
- How to tailor up solutions being technically viable and economically profitable?
- How to actually put all this in practice?



Operators of big power plants already today exploit the new sales options in the liberalized markets, but investors and owners of smaller generation units mostly can not. There are two major reasons:

1. A number of technical and non-technical criteria are to be met.
2. Lack of "user-friendly" information about the opportunities available and especially the "how-to?" meaning the first steps for plant operators to access electricity markets.

The project will pave the way for investors / owners of RES and DG for finding alternative marketing approaches by elaborating concepts and procedures to bring them to the markets and help them selling power and other electricity products generated by DG in the power range up to several hundred kW per single unit.

Practical example: The badenova showcase

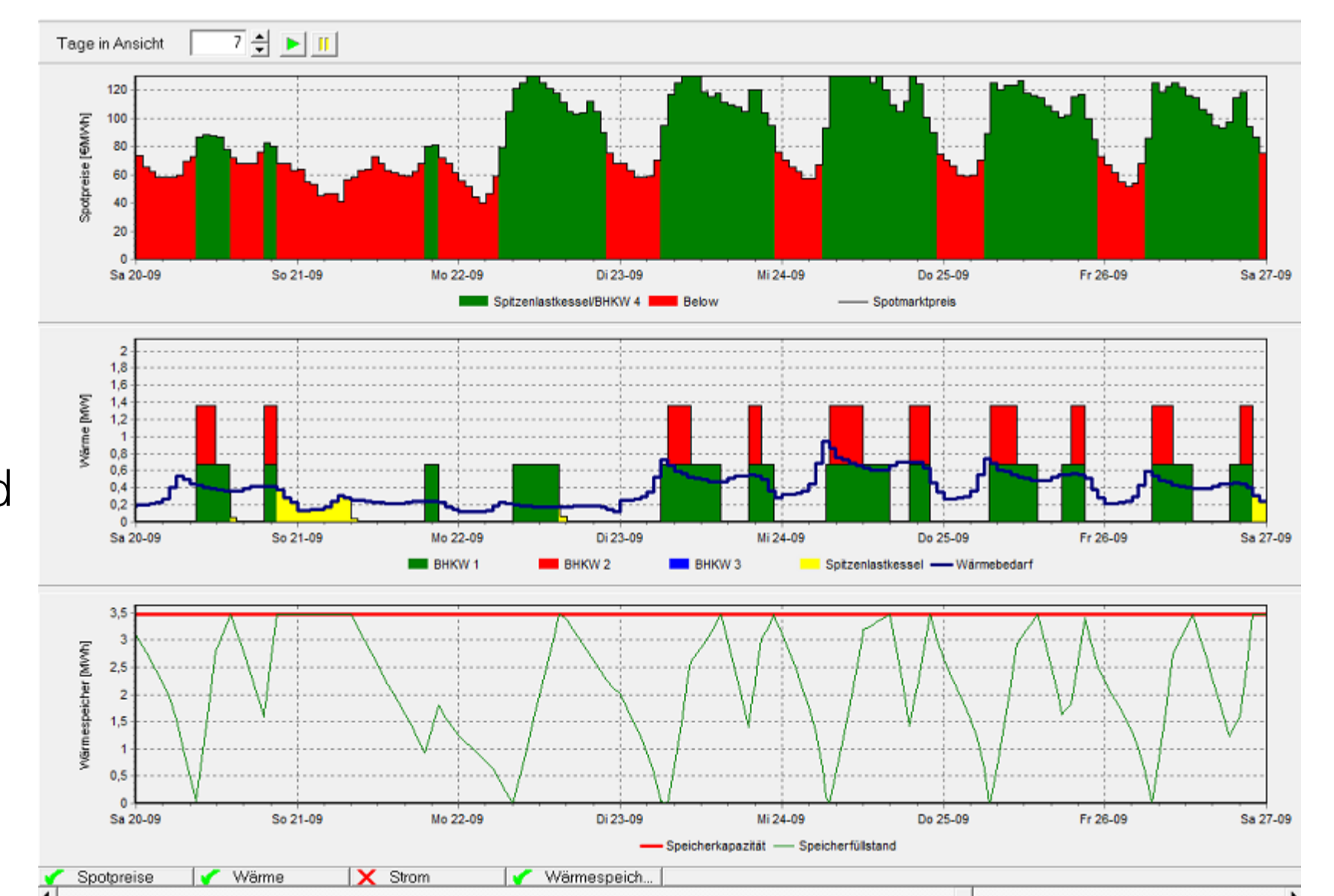
- Chances of intelligent marketing of electricity from distributed generation will be analysed for concrete showcases and - if promising - will put into practice.
- The project partner badenovaWÄRMEPLUS introduced two installations with CHP units located in South-West Germany ("Friesenheim" and "Mauerfeld").

A first feasibility study using the software "energyPRO" developed by the project partner EMD (DK) showed that in this case the plants' economics could be improved substantially by selling electricity at the spot market combined with offering control power services for the balancing market. Further simulations will allow to study modified scenarios like increasing the heat storage capacity and reducing return temperatures in the district heating grid.



Friesenheim CHP units

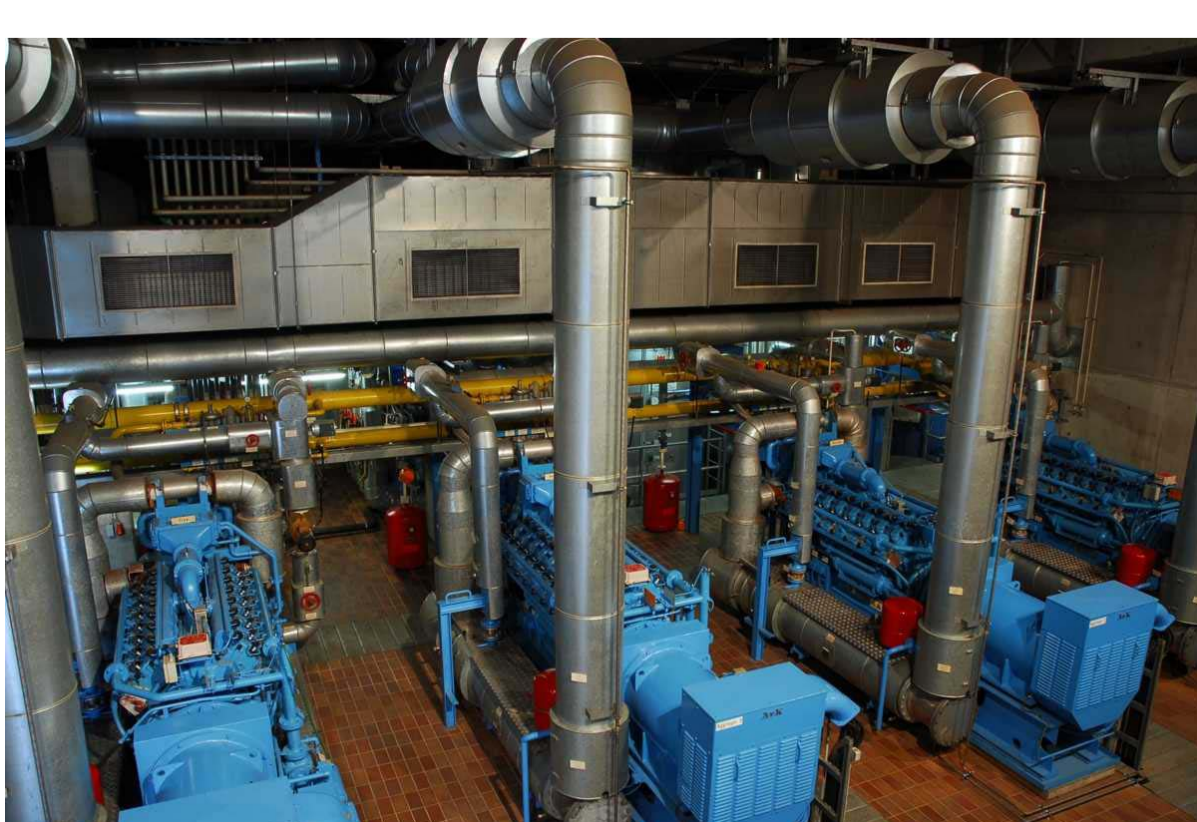
Thermal power: 4,700 kW, including 2 peak load boilers with 650 kW each
 Electrical power: 2,300 kW
 5 CHP units with 460 kW each, powered by natural gas
 Thermal storages with a volume of 2 x 45,000 l



CHP "Friesenheim": hypothetic optimized plant operation (spot market, electricity driven)

The simulation has been done using the tool energyPRO created by EMD (for details: www.emd.dk)

Electricity marketing of these CHP plants is based on the current German CHP support scheme (KWKG), and due to legally based annual decrease of the feed-in tariff the plants' operation turned unprofitable, also due to inappropriate system design.



Mauerfeld CHP units

Thermal power: 10,500 kW, including 2 peak load boilers with 2,300 kW each
 Electrical Power: 6,144 kW
 5 CHP units with 460 kW each, powered by natural gas
 1 CHP unit with 3,850 kW, powered by diesel oil
 Thermal storages with a volume of 4 x 50,000 l

The Project Vision



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