

E-Energy-Project Mannheim model city

Realization of an Energy Marketplace in the
Rhine-Neckar Metropolitan Area

E-Energy-Project:
ICT-based Energy System of the Future

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SmarterCities, 23 – 24 June 2009,
Berlin



Geçirdert durch das



Bundesministerium
für Umwelt, Naturschutz
und Reaktorsicherheit



- Meeting the requirements - Utility companies on their way
- Smart Grids: More intelligence in energy distribution networks
- A customer's breakfast
- Innovations for "Modellstadt Mannheim" E-Energy
- Summary





➤ **Consortium leader**

MVV Energie AG



➤ Energy provider

MVV Energie and DREWAG



➤ Communication and interfaces

Power PLUS Communications,
Papendorf



➤ Core platform

IBM

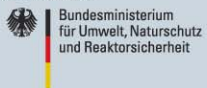


➤ Research partner

Uni Duisburg-Essen, ISET, Ifeu, IZES

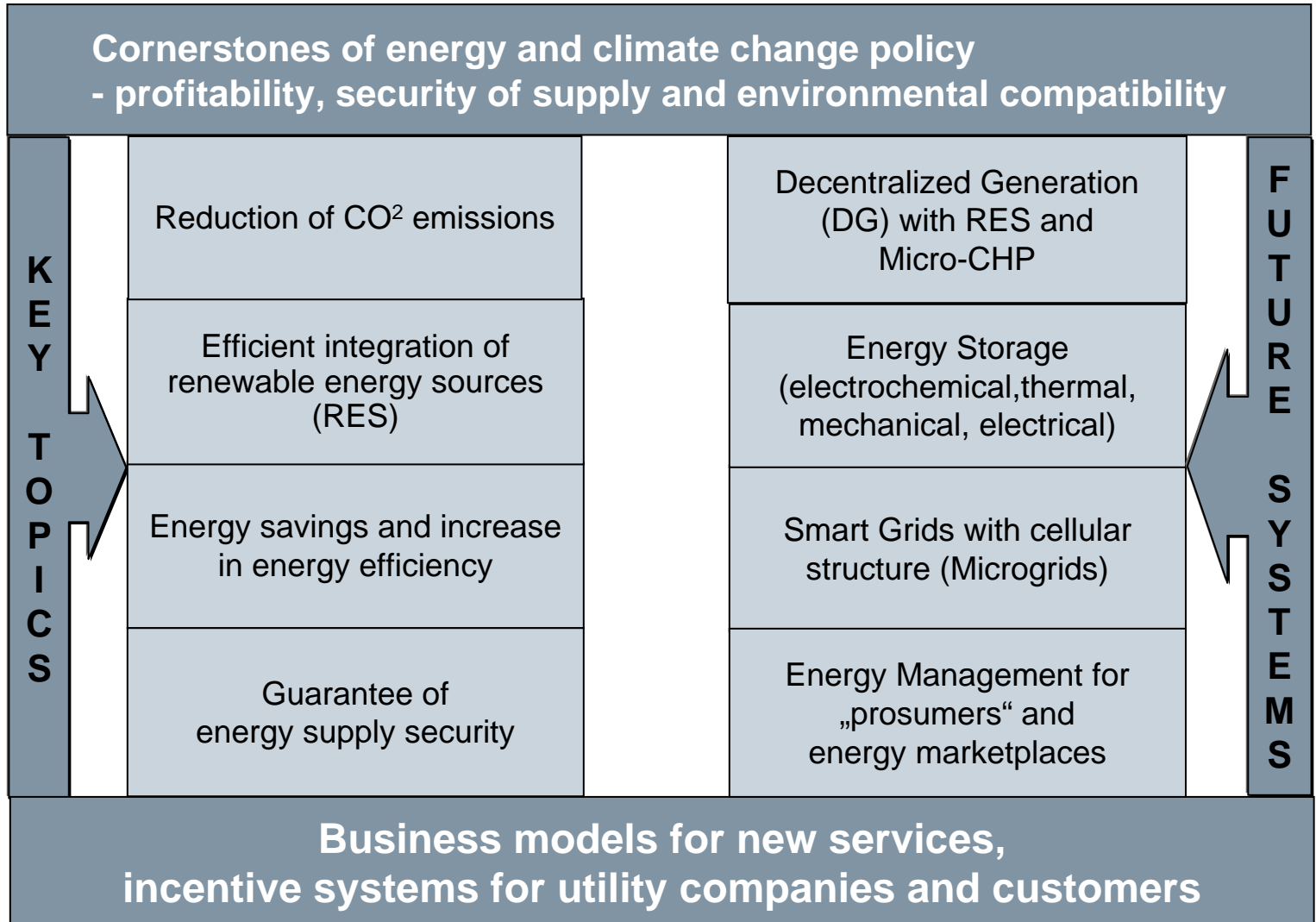


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... is one of the central steps of a sustainable and efficient energy supply and conclusive contributions to the climate protection

Smart Grids are

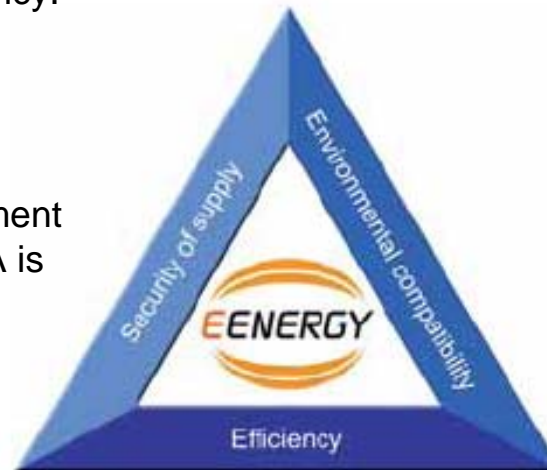
- key technology for decentralized energy supply and marketplaces,
- base structure for Smart Metering,
- origin for a lasting cost reduction in construction and operation and maintenance of the network, plant and equipment assets,
- promoters to prepare energy suppliers and end customers to become responsible market participants through an efficient behavior towards the resource energy

Utilities need Smart Grids, that

- are interactive and bi-directional and able to make use of the IP-Protocol,
- allow a real time access to data and states of assets,
- are adequate to reach up to the customer devices, installations and applications.

- National economy: Reduction of primary energy use.
- Energy provider: Balance optimization, process efficiency.
- Customer: Lowering of the energy costs
- Higher attraction for decentralized production.
- IT instead of net reinforcement
- Data evaluation for BNetzA is efficient.

✓ Economic efficiency



✓ Security of Supply

✓ Environment

- CO2 saving by energy efficiency.
- Integration of a high number of decentralized energy installations.
- Optimization of the CHP in the main power station on site by efficient company remote monitoring
- Use of local resources.
- Preservation and improvement of the net quality.
- Net protection technology.
- Providing of balanced energy.
- Preparation of the island net ability.

Homo sapiens energeticus knows: There is a time-dependent market value for energy



Freshly baked Bread

3 a.m.: Bread-baking machine starts using lowest price tariff as per EEX.

Cold fresh Orange Juice

4 a.m.: Fridge is cooling in low price phase down to 3 °C.
Next cooling at above 6°C or in next low price phase.

Steaming fresh Espresso

Not interested in present price: Fresh Coffee has to be on table in right time.

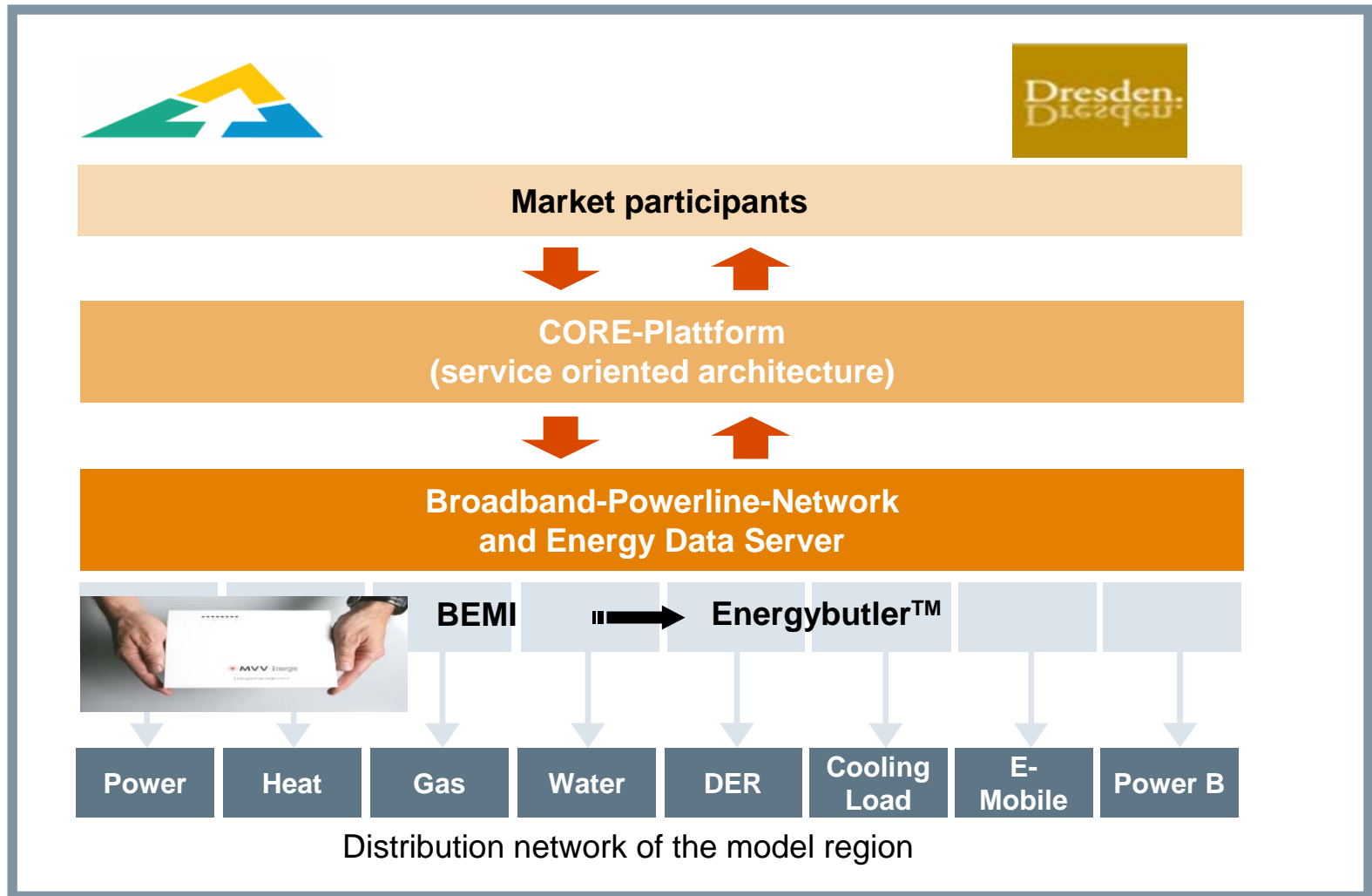
Clean Clothing

Washer - loaded - starts as soon as tariffs are advantageous; but not later than 4 p.m., as dryer then operates in low price night phase



Innovations for „Modellstadt Mannheim“

- Cellular System Topology with Distributed Intelligence



- ▶ **The Model City of Mannheim develops the energy marketplace in a comprehensive approach on a large scale.**
 - “Multi-utility approach”: A single leading control room and a Smart Grid for all sections.



From Chance to System - Efficiency



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Thank You for Your Attention

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