

ICT Impact on Energy Efficiency – The EnRiMa Project

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<http://enrima-project.eu/>

Consortium:



EnRiMa objectives

- develop a decision-support system (DSS) to enable operators to control energy flows and ensure energy efficiency in public buildings
- to support building operators in managing a set of conflicting goals such as to minimize costs, improve energy efficiency, reduce emissions, sustain comfort requirements of the occupants and at the same time to manage risks and uncertainties.

EnRiMa Vision

Building configuration:

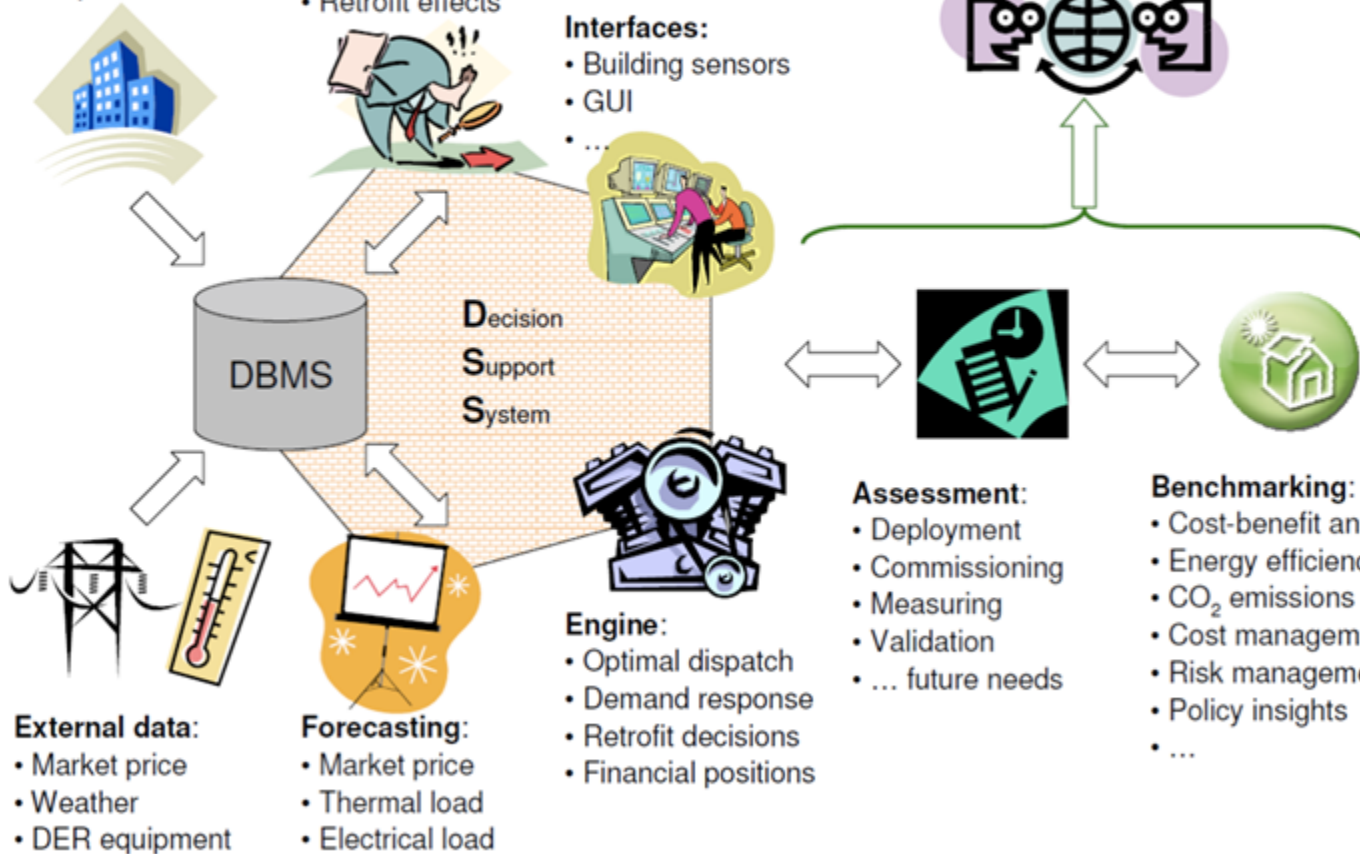
- Thermal load
- Electrical load
- External features
- Risk preferences

Energy flows:

- Sankey diagram
- CHP
- Retrofit effects

Interfaces:

- Building sensors
- GUI
- ...



External data:

- Market price
- Weather
- DER equipment

Forecasting:

- Market price
- Thermal load
- Electrical load

Engine:

- Optimal dispatch
- Demand response
- Retrofit decisions
- Financial positions

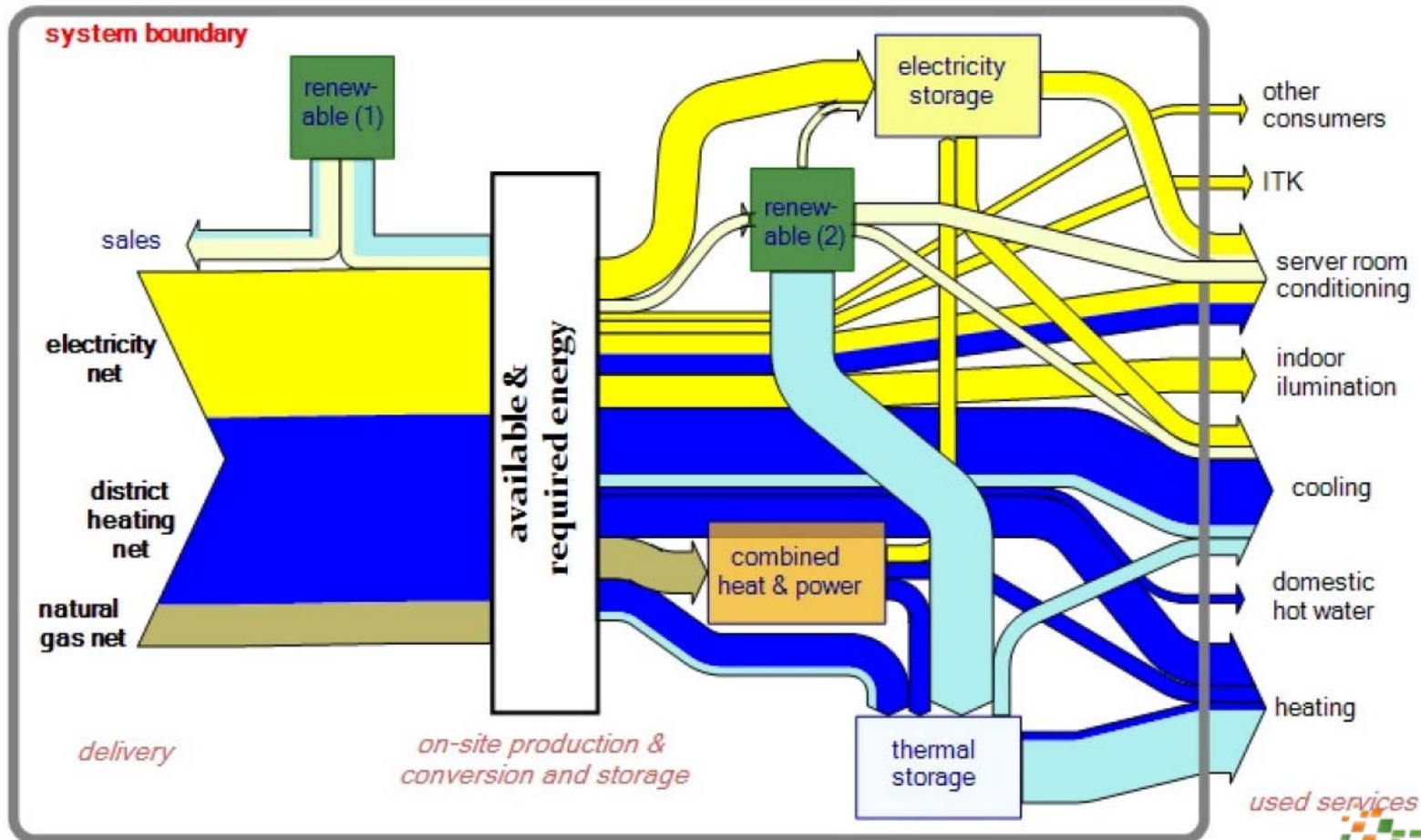
Assessment:

- Deployment
- Commissioning
- Measuring
- Validation
- ... future needs

Benchmarking:

- Cost-benefit analysis
- Energy efficiency
- CO₂ emissions
- Cost management
- Risk management
- Policy insights
- ...

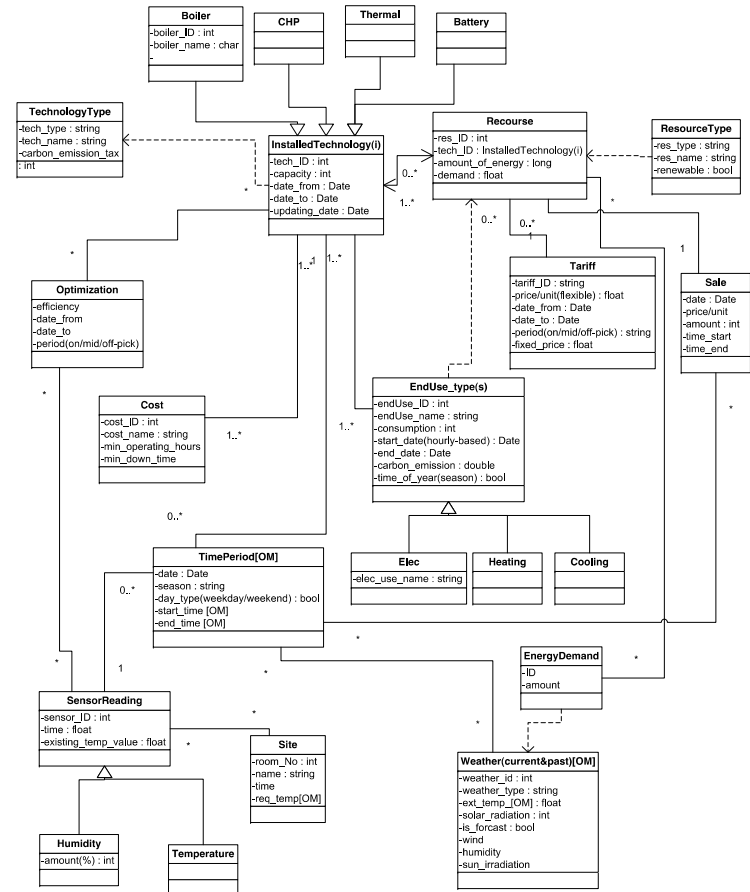
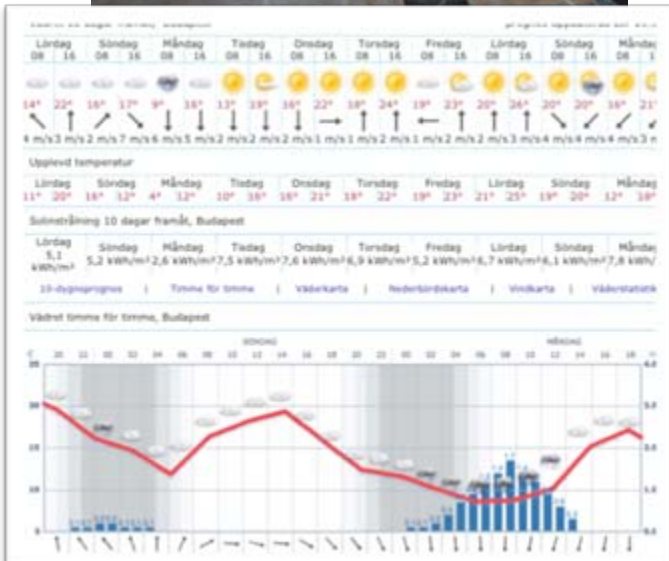
Example of modeling energy flows with Sankey diagrams



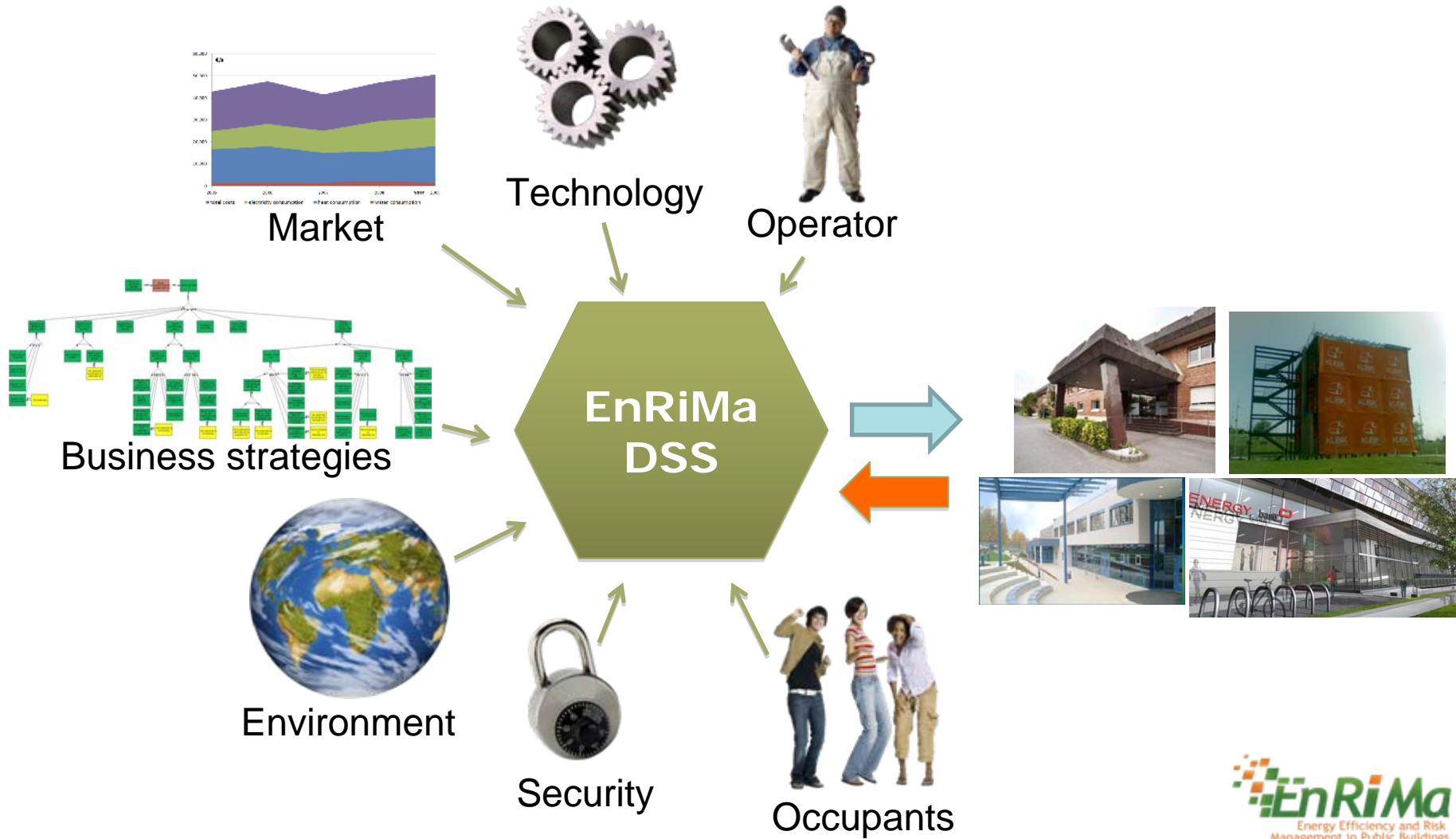
Future Challenges Related to ICT

- integration and use of large amounts of data, (e.g. sensor, weather, occupant), information and knowledge
- user friendly adaptation, customization and evolvement of decisions over time,
- amalgamation of decision making based on mathematical models with business strategy development based for example on conceptual models and balanced scorecards
- integration of building energy management systems with other information systems used by the operators

Challenge: integration and use of large amounts of data, information, and knowledge



Challenge: user friendly adaptation, customization and evolvment



Challenge: integration of building energy management systems

