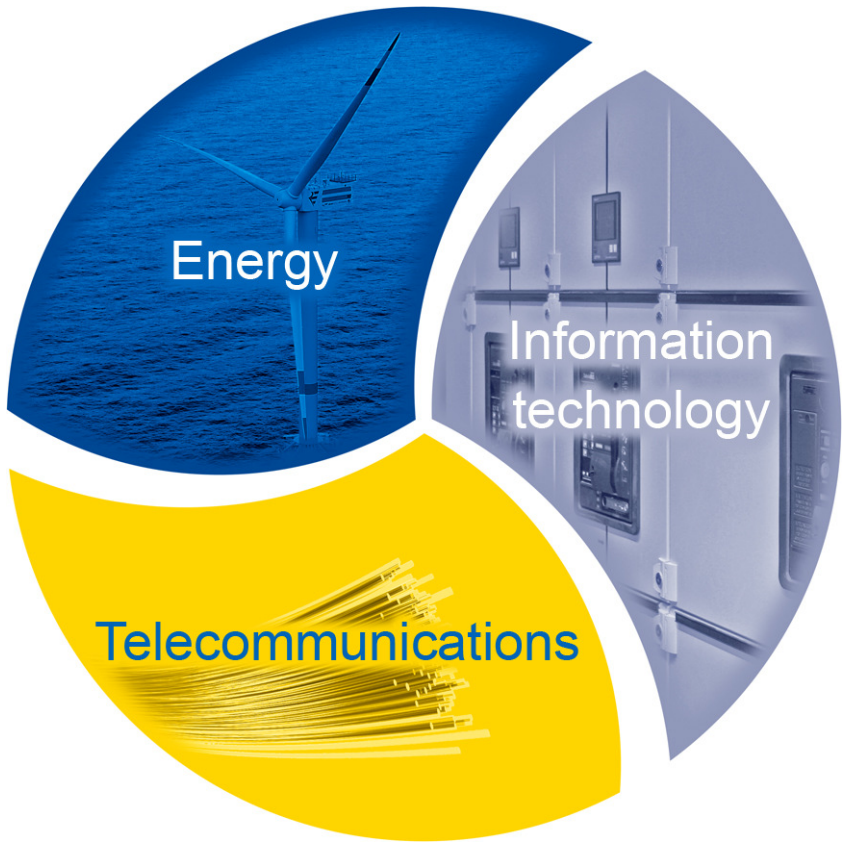
eTelligence- Energy meets Intelligence

Berlin, 22. May 2012

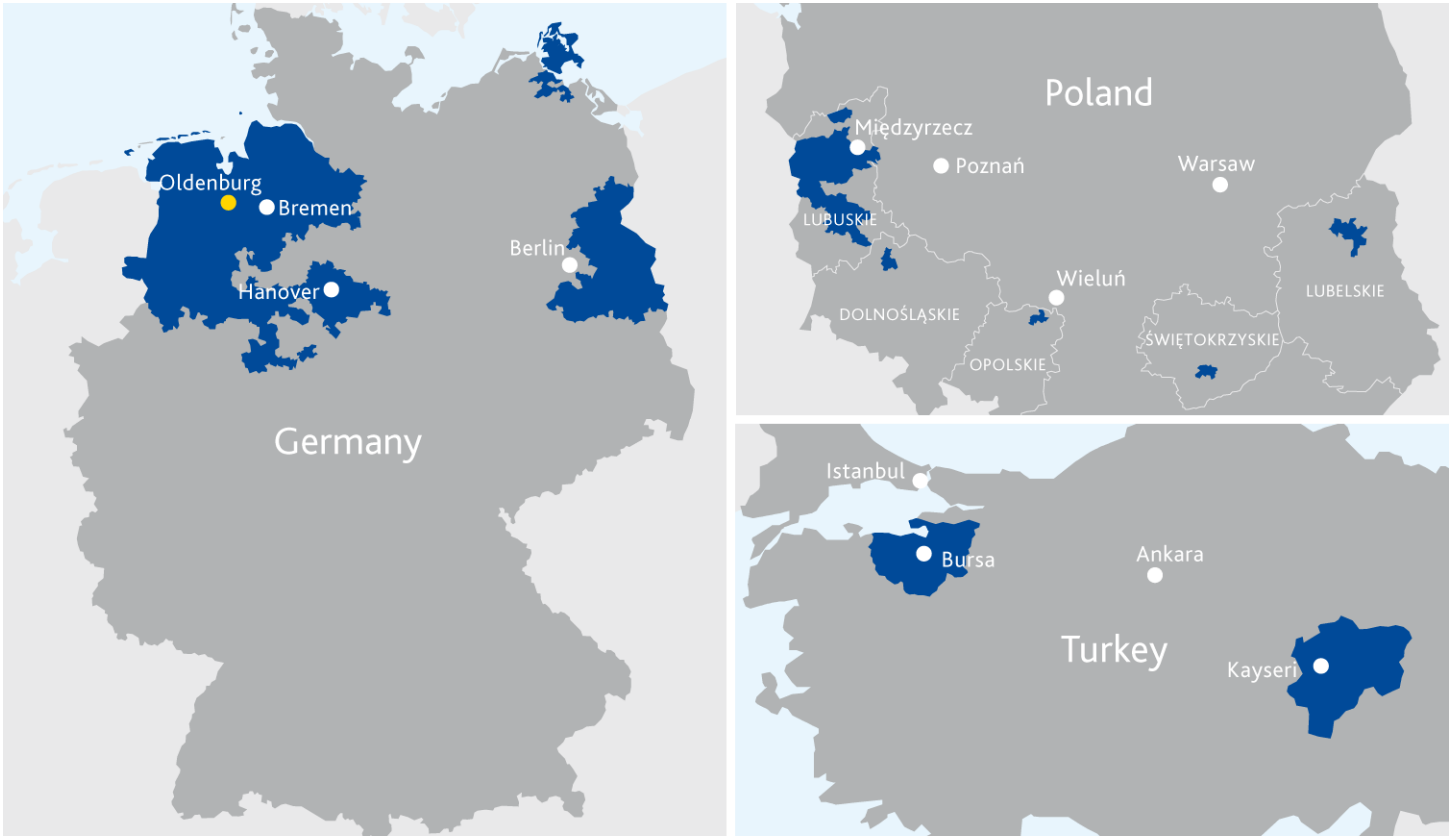
Dr. Tanja Schmedes

EWE: the future of energy from a single source



- EWE brings together energy, telecommunications and information technology and therefore has all the **key competencies for sustainable, intelligent energy supply systems** at its disposal
- This means that the company can develop and operate modern energy supply systems – from power generation to network management and from storage to energy use – entirely in-house
- An energy industry pioneer: innovativeness and the focus on integrated infrastructure are the key to EWE's success
- Strong regional roots: customer proximity and a knowledge of the region's infrastructure drive local energy solutions for local people

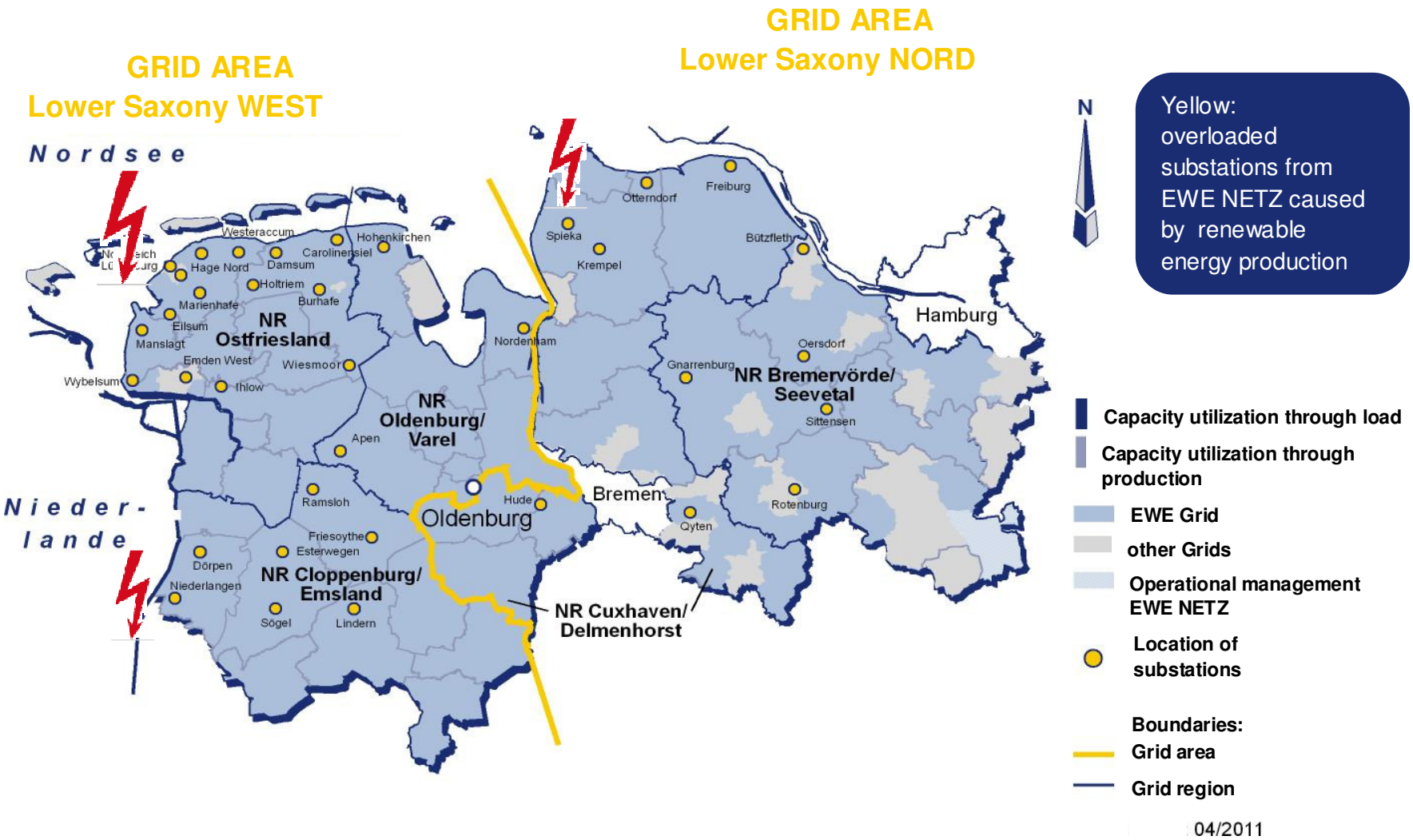
EWE – our regions in Germany, Poland and Turkey



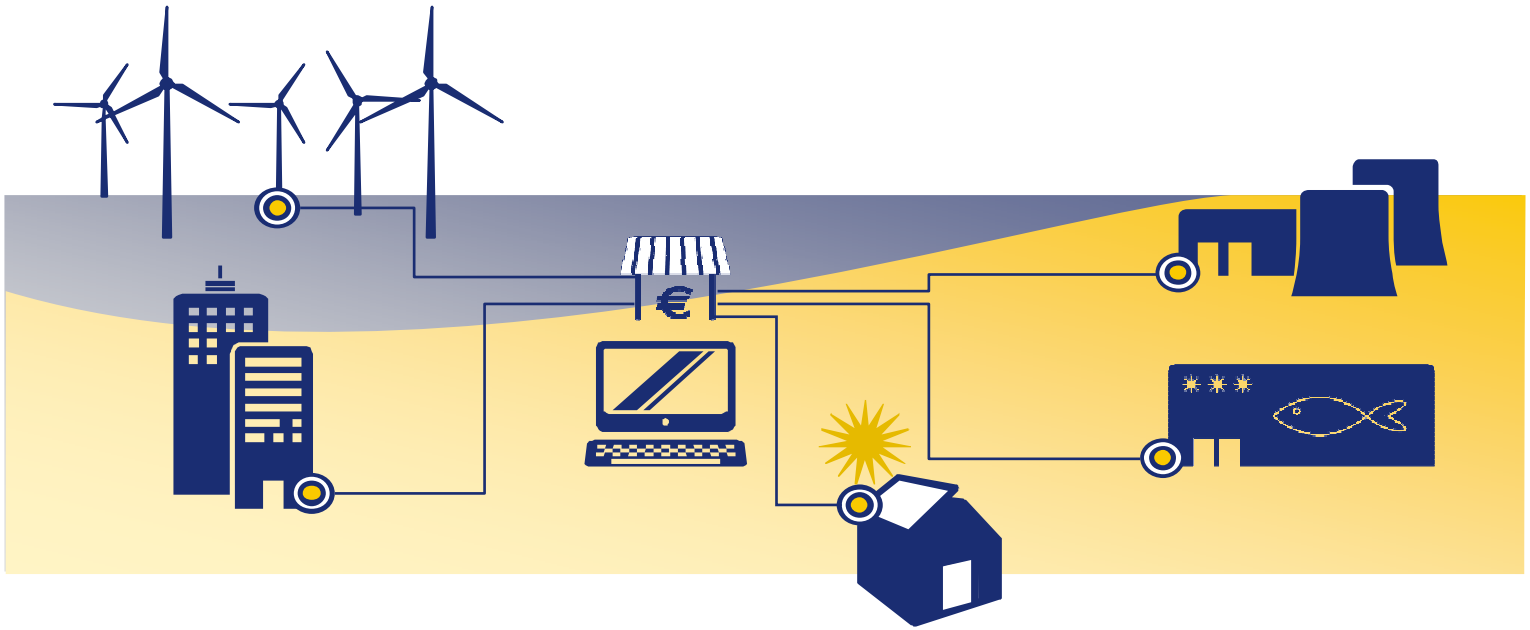
● EWE AG headquarters

The integration of renewable energy is challenging for the grid

A large proportion of our substations is already overloaded- biogas plants have already been taken from the grid



The future grid requires new interfaces

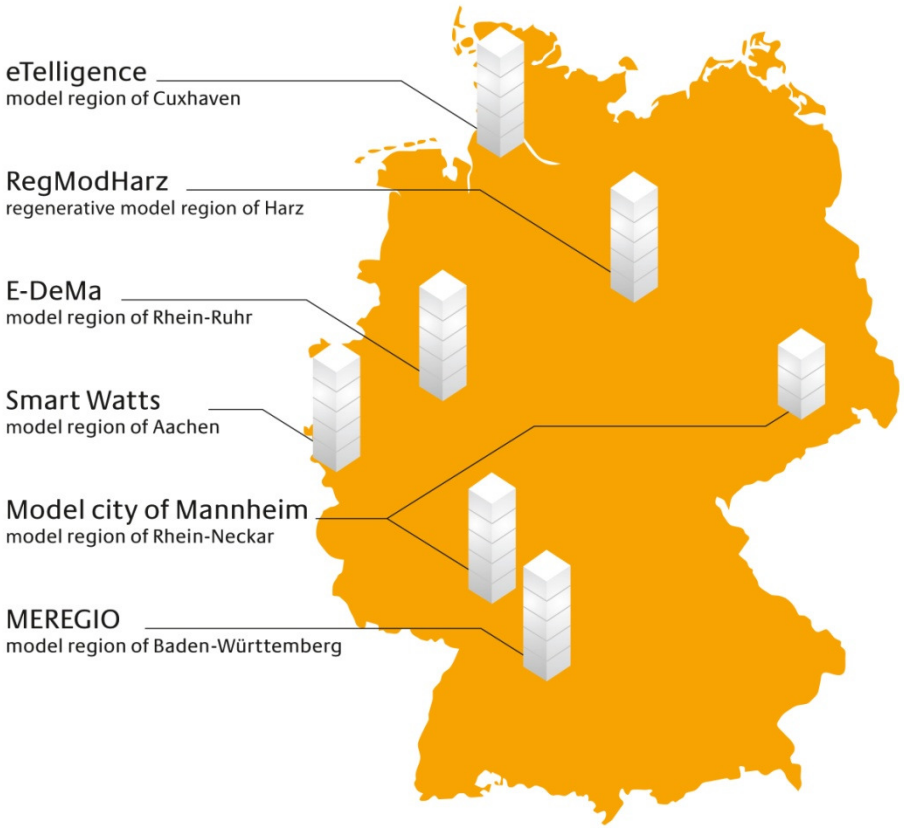


➔ Research program ‚E-Energy' by the Federal Ministry of Economics and Technology and the Federal Environment Ministry

technical feasibility → business models

eTelligence: E-Energy-lighthouse in the north of Germany

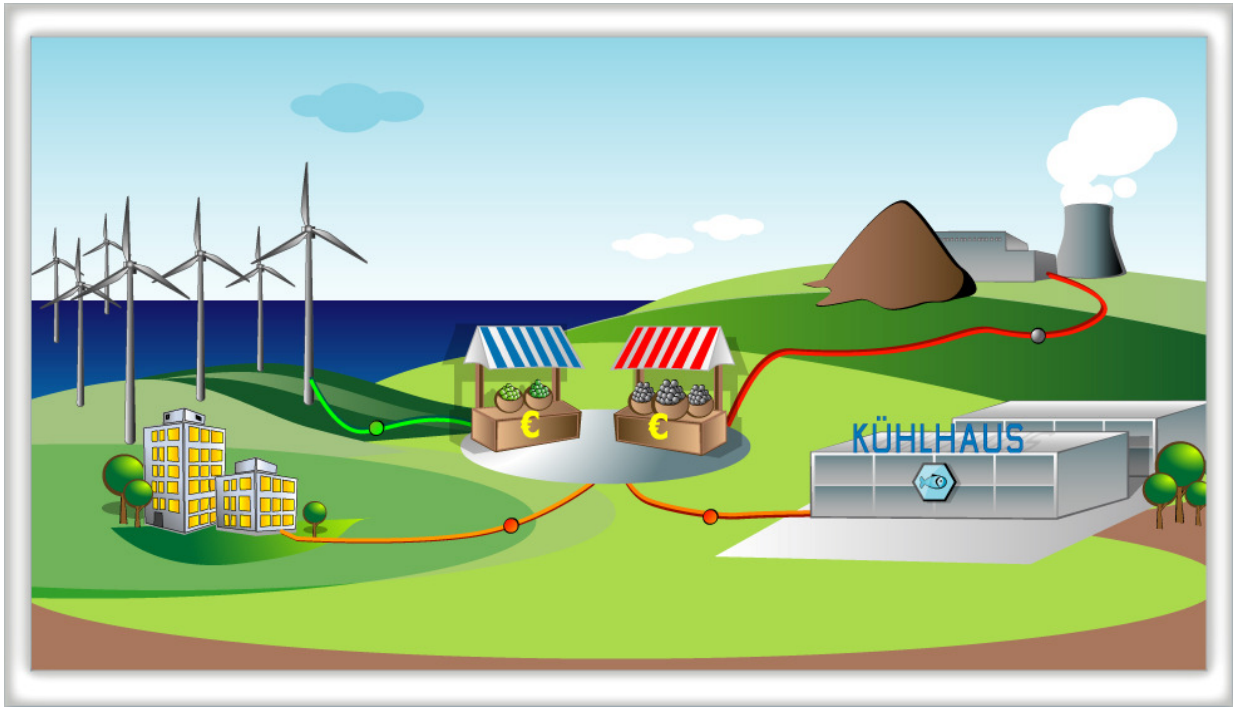
The R&D-project ‘eTelligence’ is a winner of the national technology competition ‘E-Energy‘ by the BMWi



Supported by

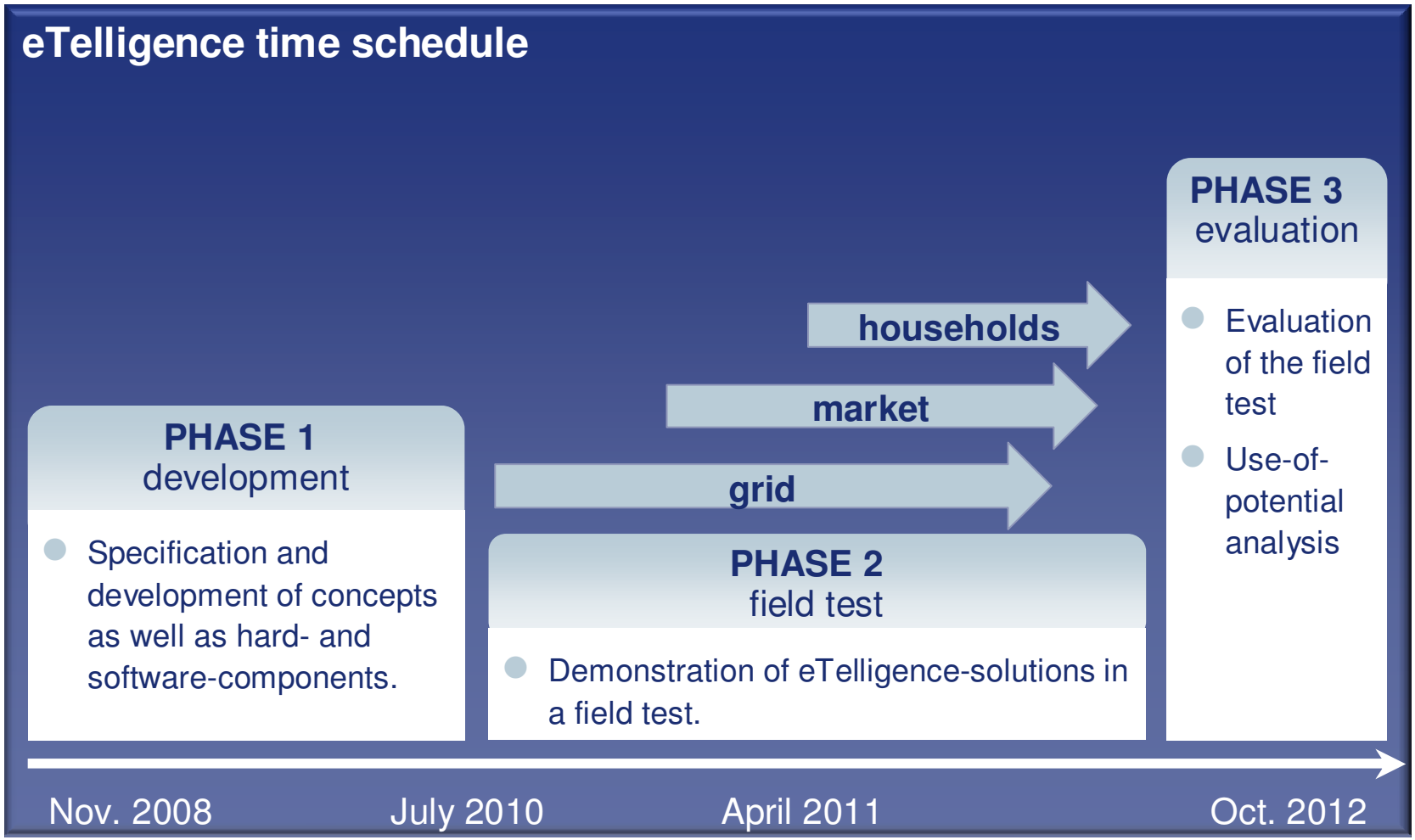
Federal Ministry of Economics and Technology

The eTelligence Szenario



- Intelligent management of power producers, energy service providers, grid operators and consumers
- Connecting actors through a market place
- Connecting components through an ICT-backbone

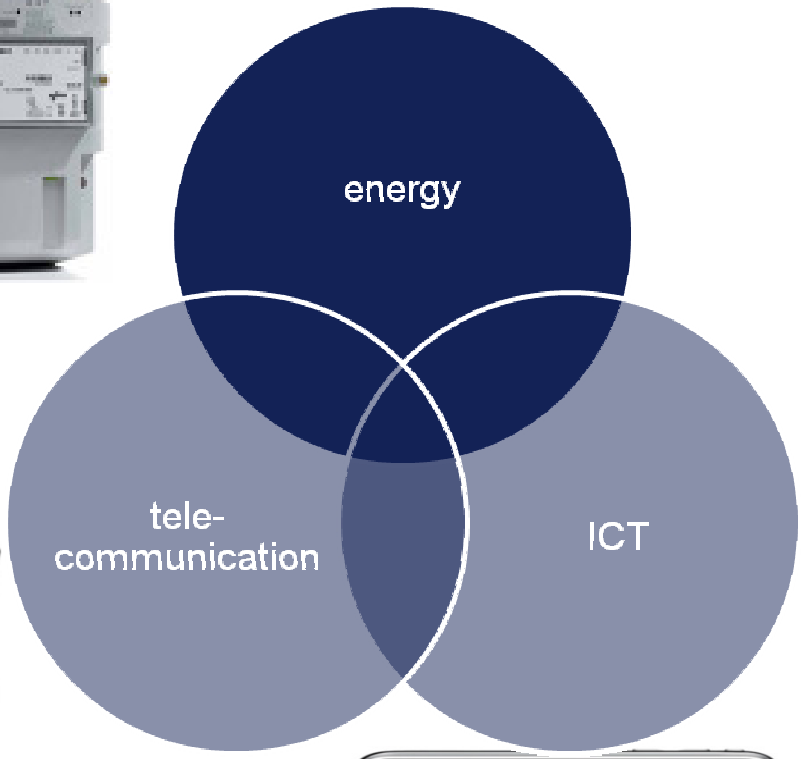
Three phases: development, field test, evaluation



The feedback systems in eTelligence – our systems for household costumers

smart meter

smartbox

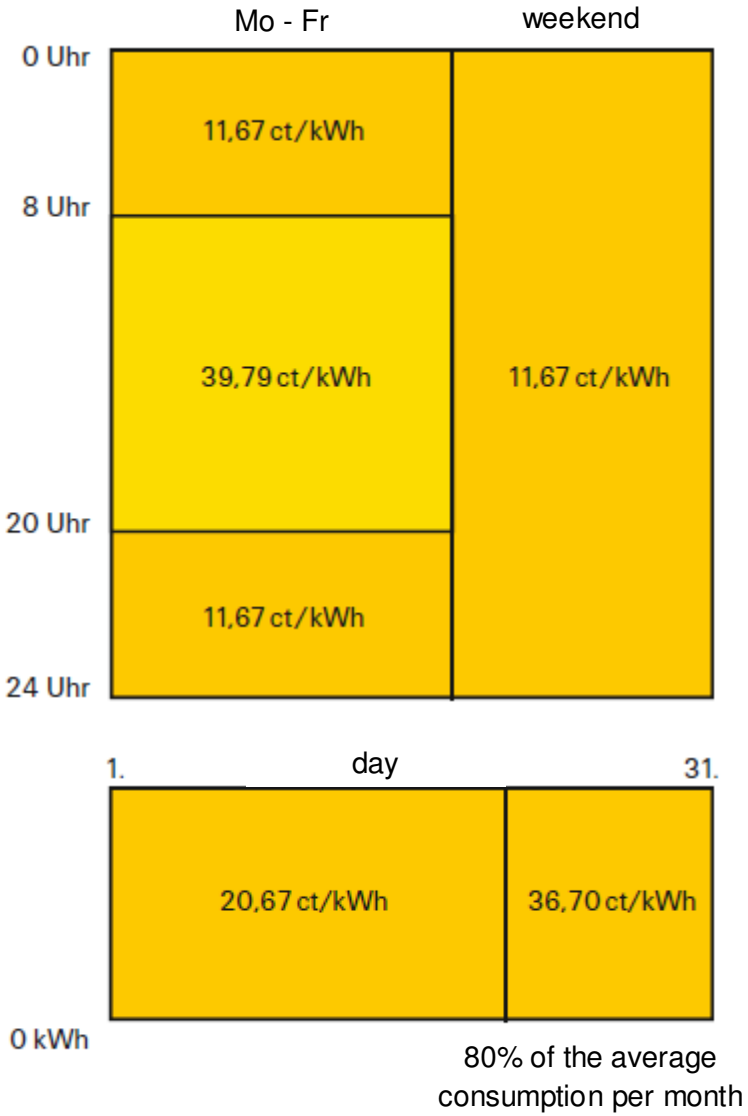


webportal

monthly consumption visualization

iPod touch ®

The eTelligence tariffs



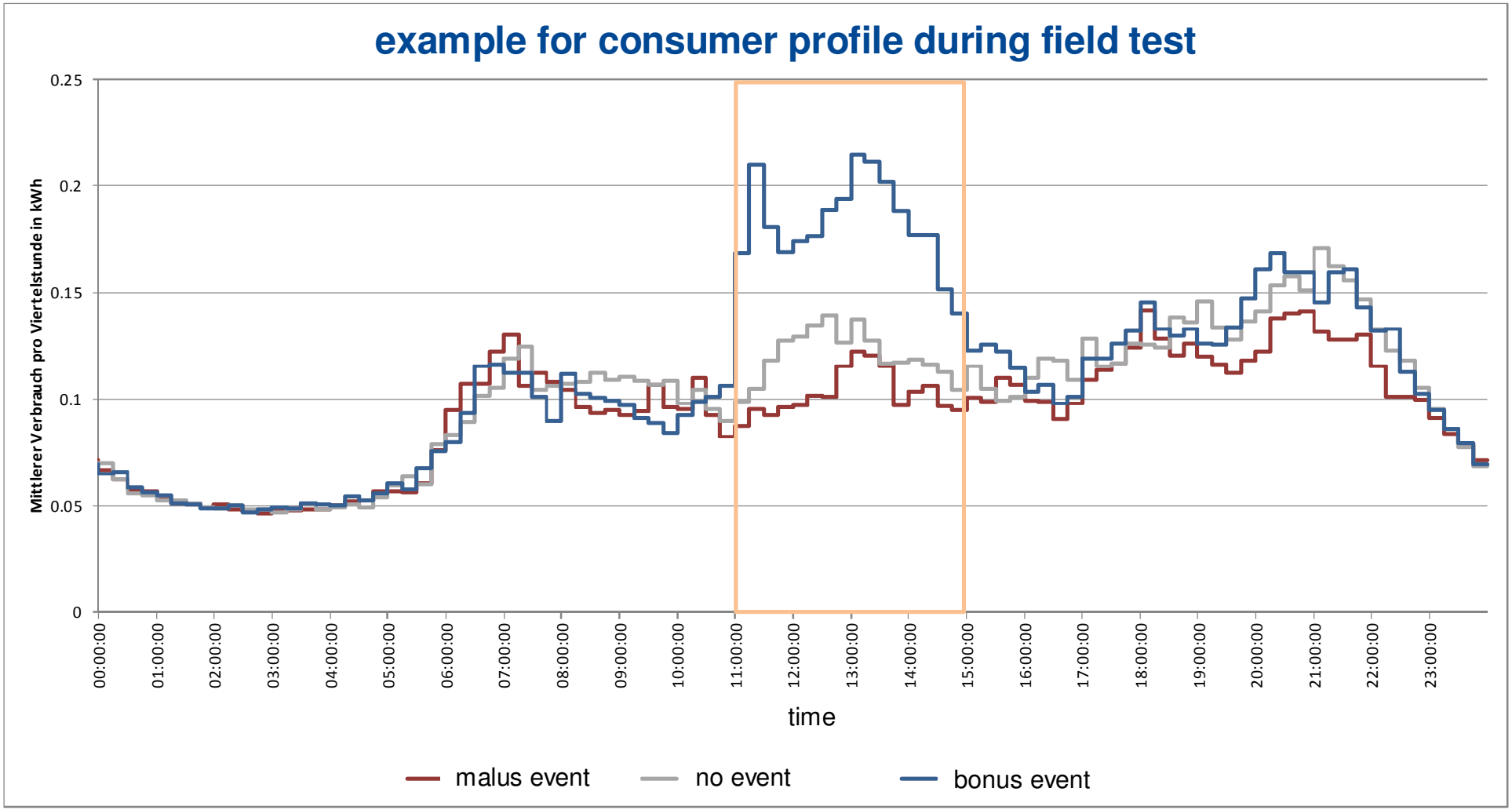
Event-tariff

Additionally bonus or malus events from 8:00 am to 8:00 pm can be offered.

Quantity-tariff

Barriers of consumption were individually estimated by historical consumption values.

The eTelligence households actively contribute to load shift



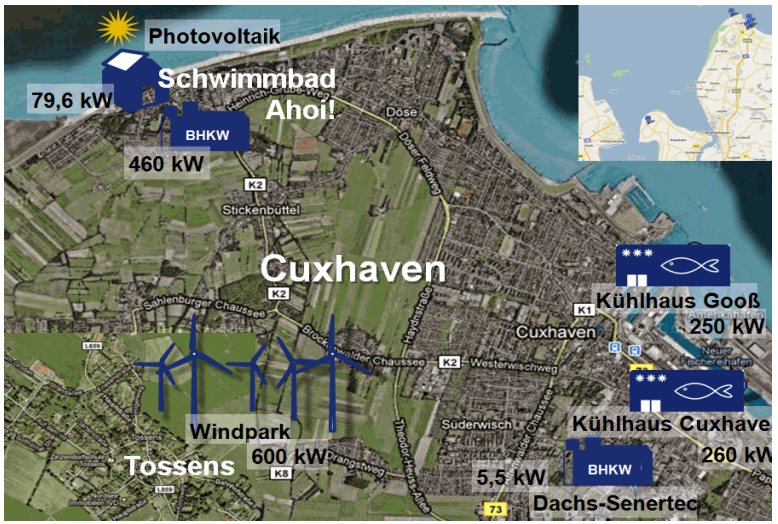
Cold storage houses test load shift on a large scale

Proof of economic potential of load shift for cold storage houses

- Compared to absolute HT-LT-operation, already 6% of costs can be saved (and counting)
- Commercial customers show great interest → gradual connection of customers was started

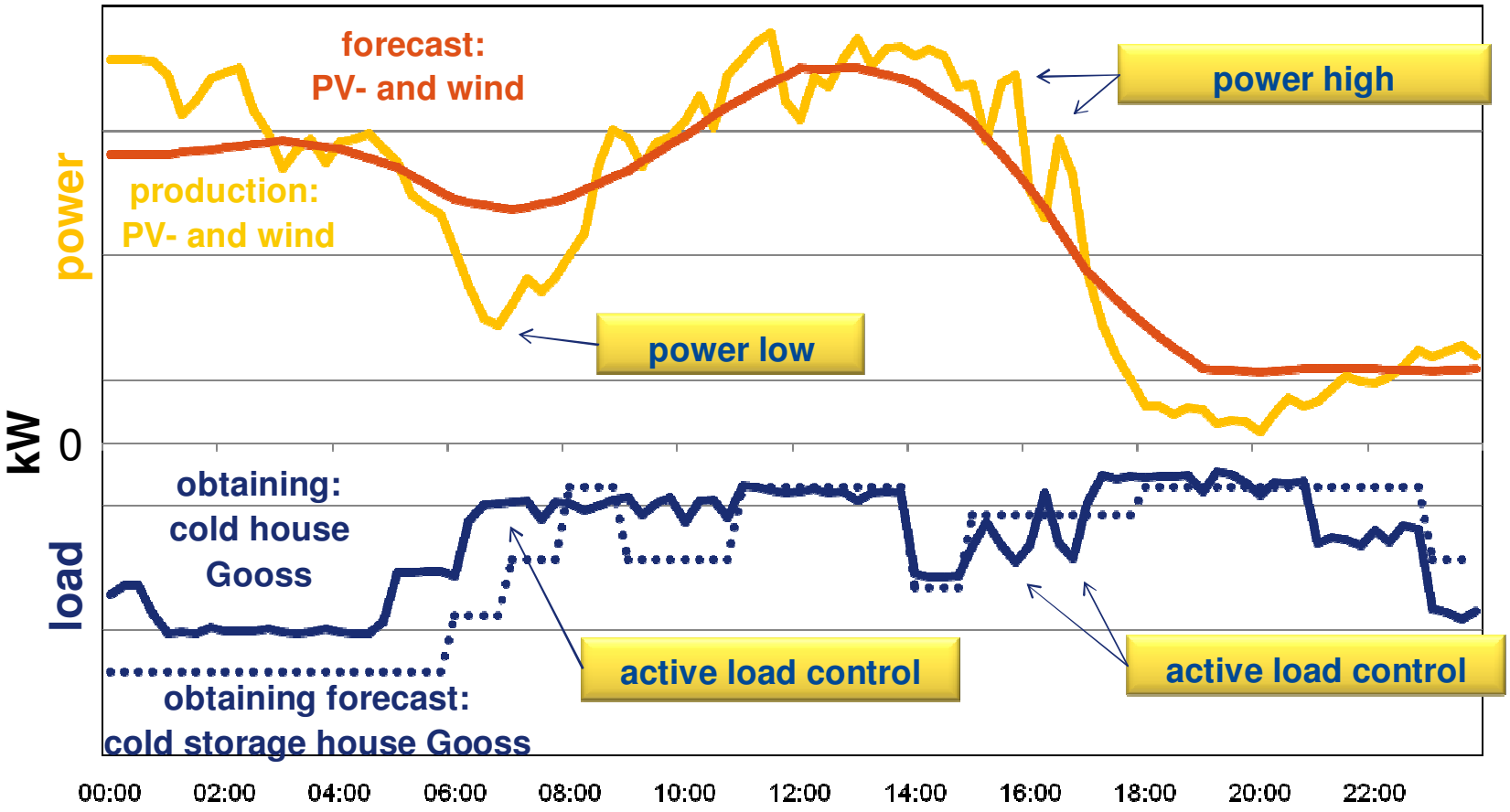
January till March 2011 – the market with money

- Participation of three CHPs and the virtual power plant (wind farm, PV-plants, two cold storage houses)
- Terminations of 1,25 GWh dealt electricity amounting to 63.234 € → decentralized plants are able to operate economically even after governmental funding expires (e.g. EEG)

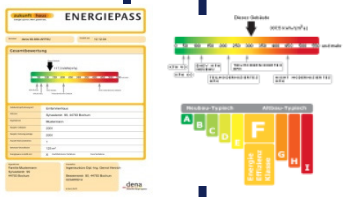


Active control of cold storage houses

active control of consumers on March 11th through power highs and lows



First solution components for the future energy system

problem		solution/product
feedback-systems for costumers		EWE trio smartbox *(EWE product since 2011/2012)*
connection, configuration, readout and creation of time series for smart meter and grid sensors		Advanced Metering Management System *(BTC product out of eTelligence since 2011)*
existing flexibilities are not in use (grid utilization, optimized obtaining)		EWE intelligent load manager *(EWE product out of eTelligence since 2012)*

More on eTelligence?

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Das E-Energy Projekt der Partner:

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Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit
aufgrund eines Beschlusses des Deutschen Bundestages