

# Energy Efficiency in Buildings - the Utilities View

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RWE Energy AG



1. RWE/RWE Energy
2. German Energy Market
3. Buildings and Climate Protection
4. What does RWE do?
5. Need for action

# RWE – One of the five leading Energy Companies in Europe



- > **Nr 1** producer of electricity in Germany, **Nr 3** in UK, leading positionen in CEE
- > European energy trading: Leading position
- > **Nr 3 high** voltage transmission grid in Europe, market leader in Germany
- > Crude Oil and Gas: increasing Upstream-Position

# Broad Services for diversified Customer Segments

## Residential and small Business Customers



- Supply with Electricity, Gas, Water, Services
- Support: Regional Service Center, by Internet, Call Center
- Regional Fairs

## Medium Business Customers



- Supply with Electricity, Gas and Water
- Modular Offer of Products and Services
- Energy Controlling
- Facility Management

## Large Business Customers



- Supply with Electricity, Gas and Water
- Integrated Supply Solutions
- Utility Services und Contracting-Solutions
- Infrastructure Management

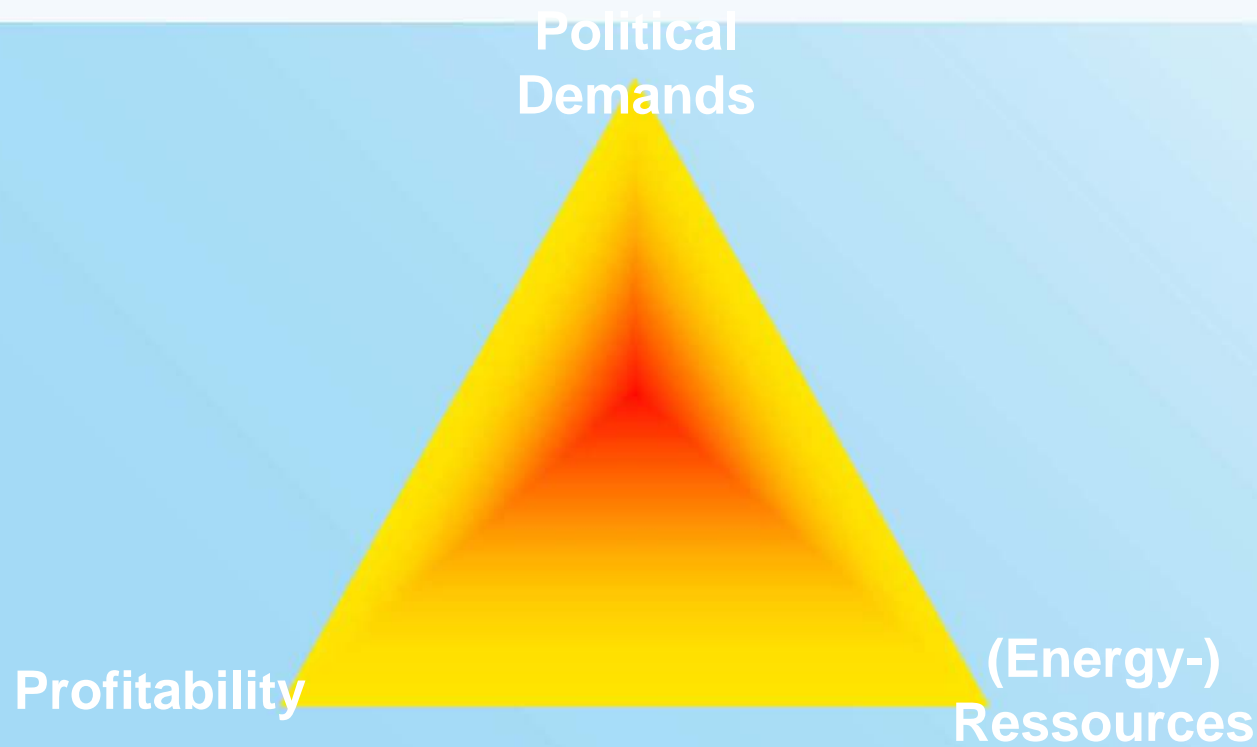
## Municipal and Regional Utilities/ Municipalities



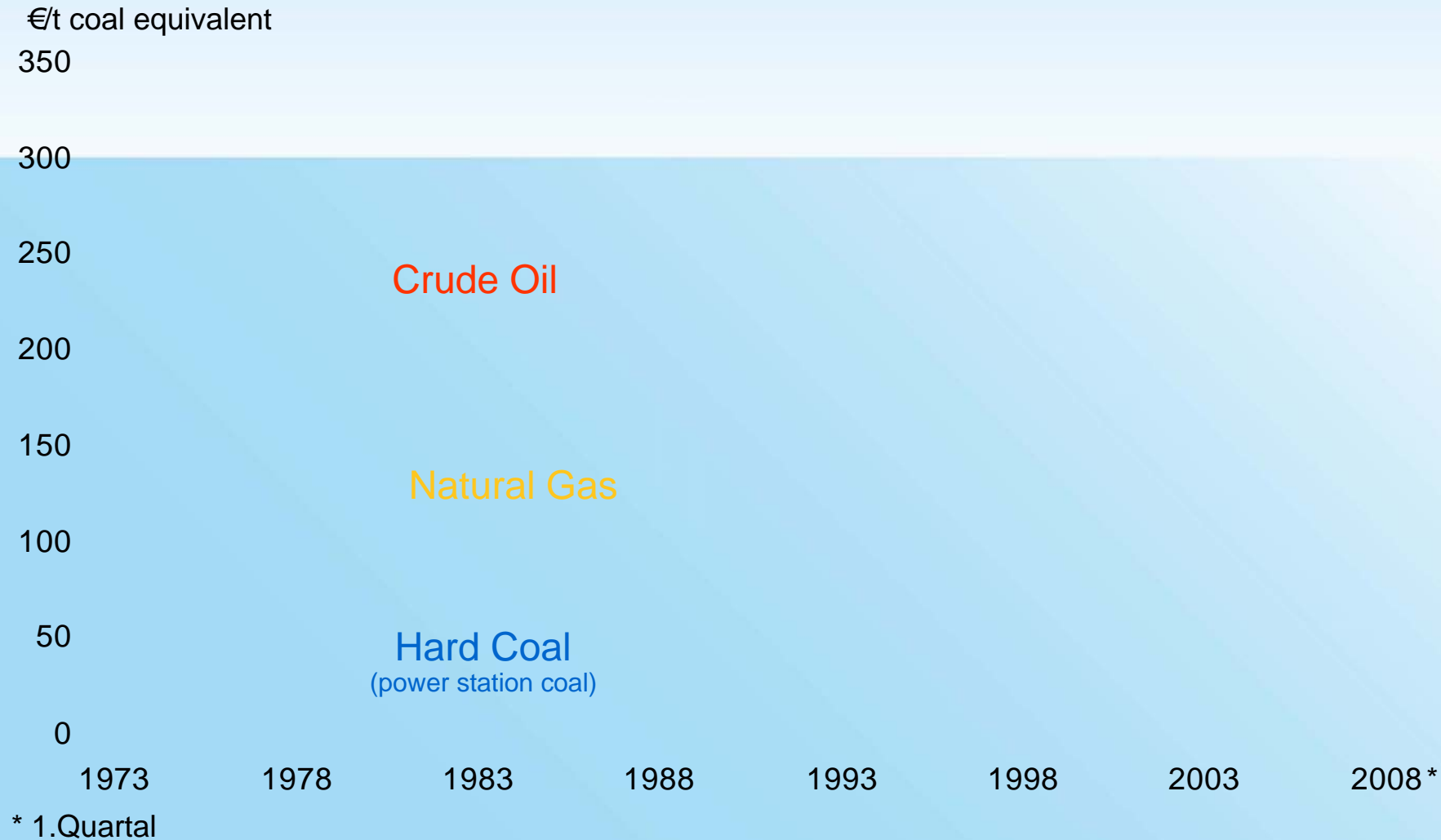
- Supply with Electricity, Gas and Water
- Broad Services
- Service Concepts based on Partnership

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# Similar Areas of Conflict



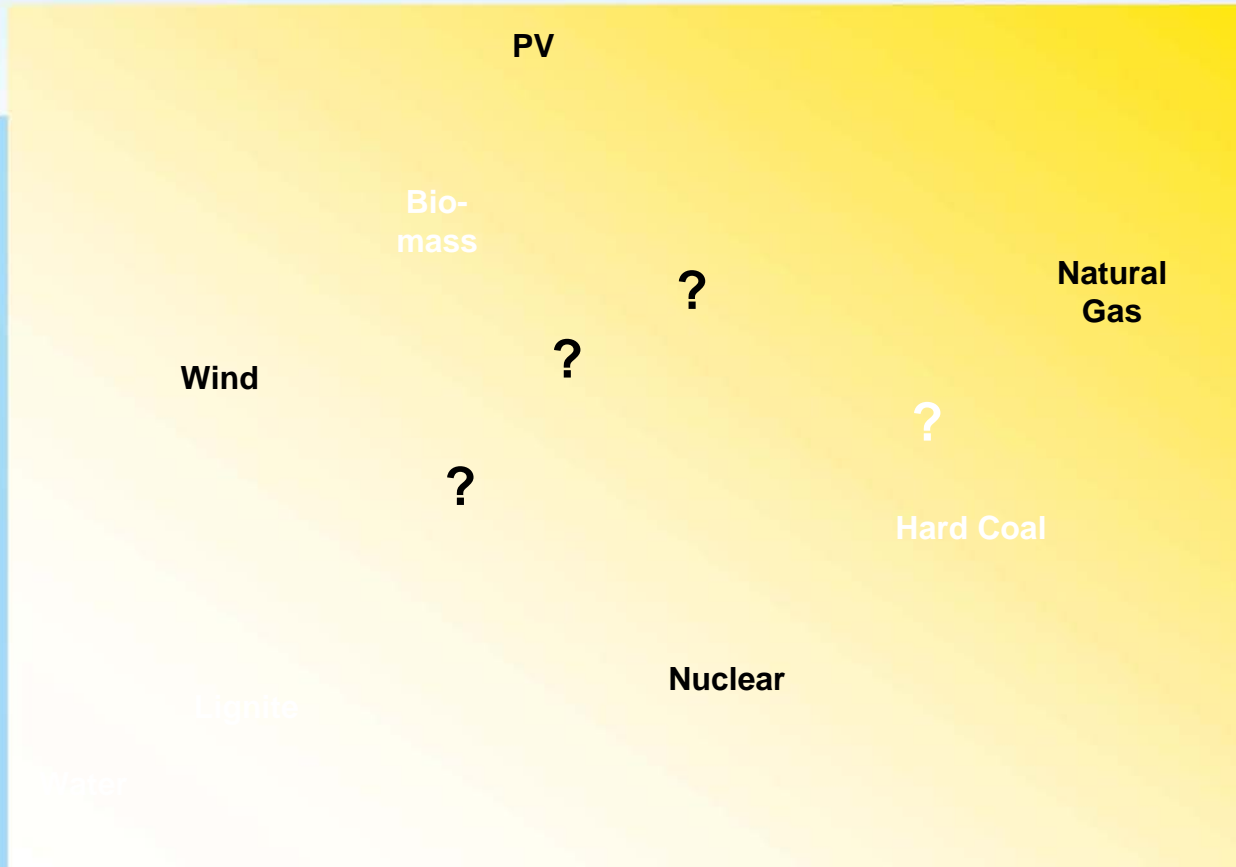
# Increasing Demand and scarcity of resources drive up energy prices



# Germany Energy Mix: Still balanced and save

\*) Not to scale

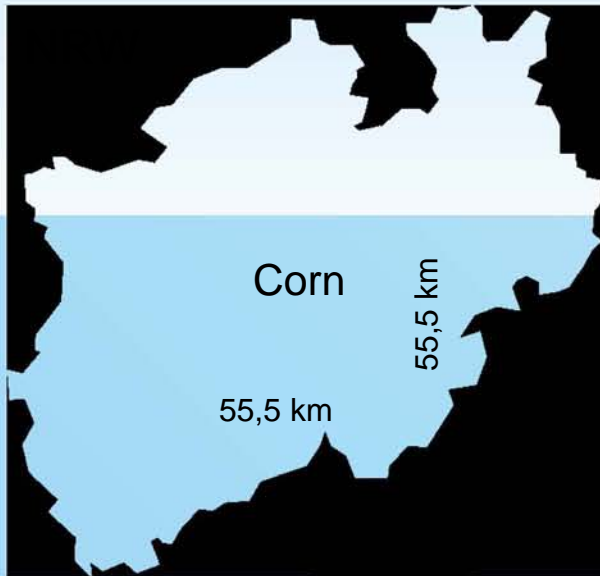
Cost of Production\*



Dependency on Imports\*



# Electricity Production: All Energy Sources have to be included!



**Lignite Power Plant (BoA)**  
produces 8,8 TWh = appr. 12%  
of the annual demand for  
electricity in NRW.

Biogas **based on Corn** combined  
with **CHP-Plant**: 3076 km<sup>2</sup> of  
arable land needed (**appr. 9% of  
NRW**).



**Canola**: Three to four times  
more land needed (appr. 10.800  
km<sup>2</sup>), **about** one third of NRW.

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# Potentials to increase Efficiency: Significant Consumption of Raw Materials and CO2 Emissions

**25 – 40 %**

**30%**

**30 – 40 %**

**30 %**

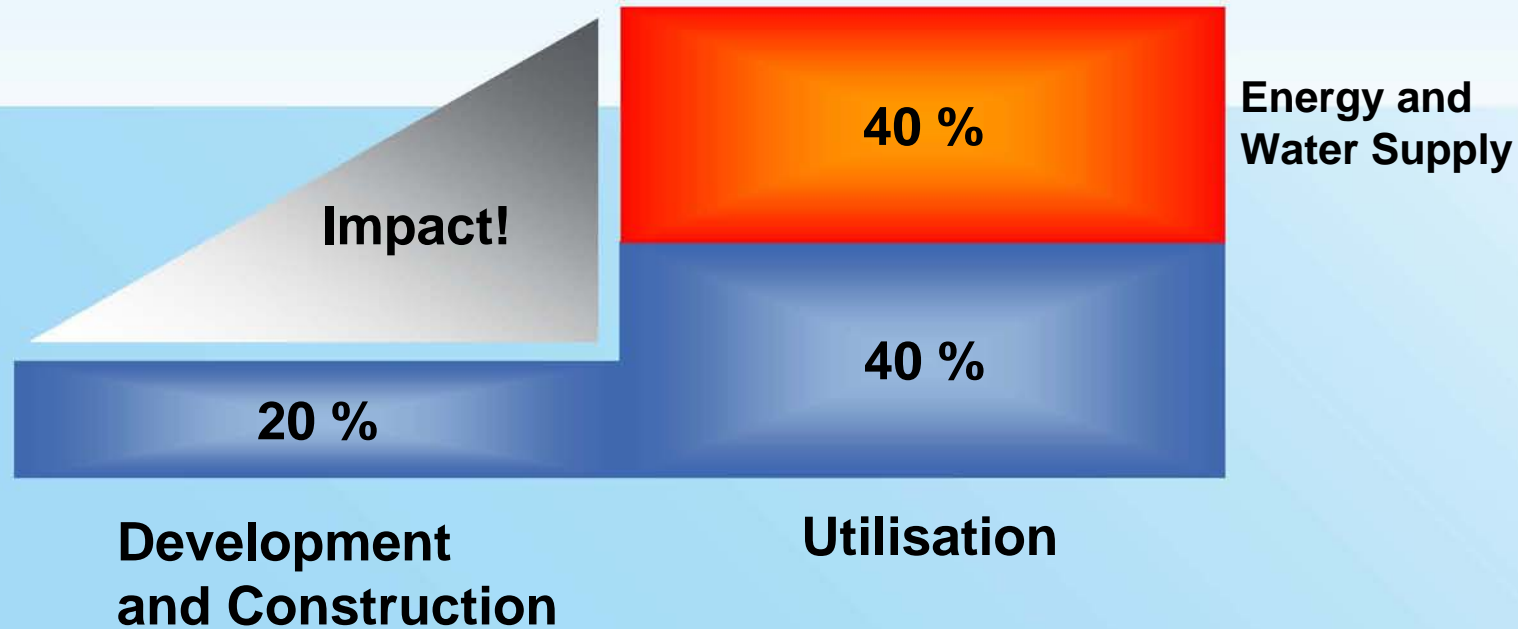
**Consumption of Energy**

**Consumption of Raw  
Materials**

**CO2-Emissions**

**Share caused by building sector within OECD-Countries**

# Utilisation: 80% of the expenses



**Development and Construction have a significant impact on the Energy Consumption during the utilisation**

# Misperception of Cost-Benefit-Ratio of „Green Buildings“

**Expenses  
overrated**

**Benefits  
underrated**

**Increase Transparency of Expenses and Benefits**

Proceedings of the Eighth International Conference for Enhanced Building Operations, Berlin, Germany, October 20-22, 2008

# Premises for Investments: Reliable Conditions

- > Free Choice of Technical Solution
- > Stability of legal /regulatory Framework
- > Solve the Lessee/Investor-Dilemma
- > Social Acceptance
- > Transparency of Information and Expenses

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# RWE engagiert sich, die Energieeffizienz zu steigern

## Das Programm umfasst zwölf Projekte

### **Research & Technology**

Smart metering

Virtual Power Plants

### **Implementation & Consulting**

Energy-saving Solutions for public Buildings

Energy-saving Solutions for Hospitals

Efficiency Programm for Street Lighting

Energy-saving Solutions for SMBs

### **Education and Information**

Informationscampaign Energy Efficiency

Media-Campaign „Energiecheck“

Information Campaign Heatpump

Promotional Programm Heatpump

ENRESO 2020

Award for the most innovative and energy efficient commercial property: „Prom des Jahres“

Support for Schools





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# 5 Energy- and Climatepolitics: Need for action?

- > Das Thema und die Diskussion um den „Klimawandel“ nicht instrumentalisieren, sondern versachlichen
- > Increase Transparency of Information and Expenses
- > Mind the climate protection AND the efficiency of capital
- > Profitability of Energy Efficiency is the premis – Use Subsidies only to stimulate the Market
- > Everybody can benefit from Energy Efficiency:

**Let's develop the solutions together!**

# Backup

# RWE Energy: one of the leading utility companies in continental Europe

**Backup**



Market position RWE	Germany	Europe
Electricity	Nr 2	TOP 5
Natural Gas	Nr 3	Nr 6
Water: Inhabitants (Fresh and Wastewater)	Nr 1	Nr 8

\* 2007 Data, incl. minority investments ≥ 20%, Retail only

\*\* 2006 Data

# Aufwändige Genehmigungsverfahren und mangelnde öffentliche Akzeptanz gefährden die Versorgungssicherheit

Backup

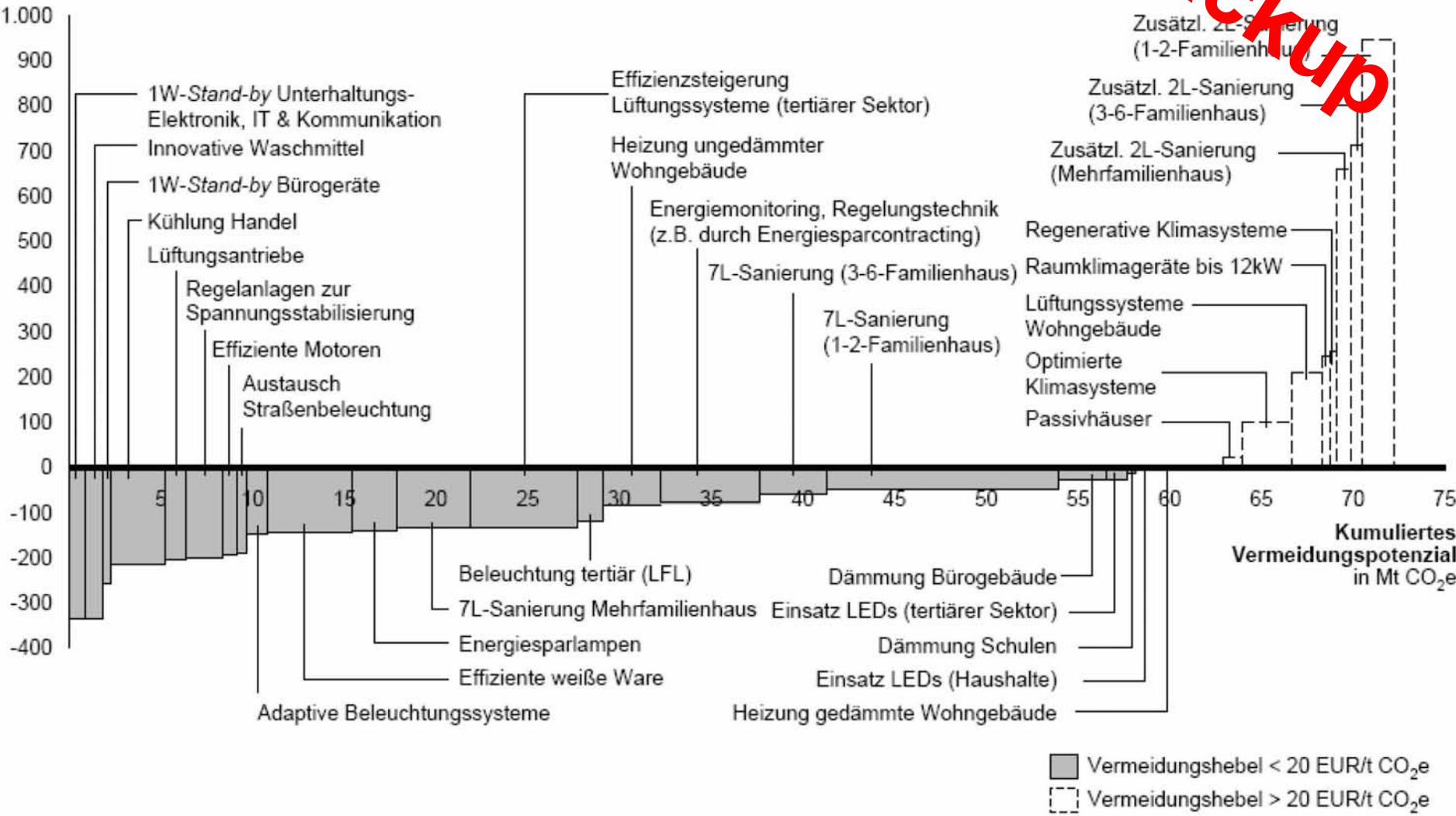
- > Zur **Einbindung regenerativer Erzeugung** notwendiger Netzausbau verzögert (z. B. Windkraft on-shore, off-shore)
- > Bau neuer **fossiler Kraftwerke** schwierig (z.B. Steinkohlekraftwerk Ensdorf)
- > **Heimische Energieträger** rückläufig (z.B. Steinkohleabbau stop im Saarland)
- > Widerstand auch gegen **neue Biomassekraftwerke** (z.B. Dillingen, Mahlberg, Cham)

Backup

# Gebäudesektor: Vermeidungskostenkurve Deutschland 2020

## wirtschaftlich attraktiv realisiert werden

Kosten in EUR/t CO<sub>2</sub>e



# RWE-Modules for Climate Protection

# Backup

## Energy Efficiency:

Build new Power Plant with higher efficiency / R&D

## Renewable Energy Sources:

Increase the share of renewable energy sources for electricity production significantly



## JI/CDM:

150 Mio. € to avoid Emissions in developing countries and emerging markets

## Climate friendly Power Plants

Build coal fired Power Plants with CCS-technology



# Energieeffizienz schon bei der Planung berücksichtigen: RWE-Tower Dortmund

## Einige Eckdaten

- Baujahr 2004
- 20.000 qm Bürofläche
- 5.100 qm Glasfläche
- Betonkernaktivierung statt Klimaanlage
- Wärmedämmung durch Doppelfassade
- BUS-Steuerung der Beleuchtung/ Einsatz von LED und Energiesparlampen

## Maßnahmen (z. B.):

- Reduzierung von Leistungsspitzen
- Optimierte Steuerung der Kältemaschinen und Lüftungsanlagen
- Energieeffizienzkampagne für Mitarbeiter

**Einsparpotenzial mind. 60.000 Euro p. a.**



**VORWEG GEHEN**