Smart Energy: Deutschland im europäischen Vergleich

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Various triggers for Demand Side Response

What happens when demand is completely covered by renewable reso
Benefits of demand response

Monetary savings for residential and industry through demand shift

- 10% savings on electricity bills (Empower Demand I, Vaasa ETT 2011, Energy Pool, 2013)
- Estimate 25 billion euros savings by 2020 in electricity bills for customers (Capgemini, 2008)

Reductions of total generation and transmission capacity requirements

- Estimated volume of 60 GW controllable load in the EU (US FERC Data, 2011)
- Reduction of 10% in peak-generation in the EU (Energy Pool, 2013)
- Potential material gains: 4 bn euros per year (Energy Pool, 2013)
- Germany: cumulated saving potential of 10 bn euros (dena-Netzstudie II)

Energy savings


Integration of RES

- Up to 70% increase in uptake of wind power (SMART -A)
- Up to 6% reduction of fossil fuel consumption in 2025 (SMART -A)
- Germany: VDE estimates for 2030 a controllable amount of electricity of 43 TWh, accommodating electricity generation from 20 GW onshore wind installed capacity in the grid.

ONLY 10% OF THE DEMAND RESPONSE POTENTIAL IS USED TODAY
Smart Electricity metering
Roll-out

Map of Europe showing the status of Smart Electricity Metering Roll-out in various countries.
Smart Gas metering
Roll-out

Map showing the status of smart gas metering roll-out in European countries.
Price regulation still risks to hamper competition, investments, service quality in many Member States

- **PRICE REGULATION**
  - OF GAS AND/OR ELECTRICITY

- **PRICE REGULATION TO BE PHASED OUT:**
  - LESS DISTORTIVE OR JUSTIFIED BY
  - NON-COMPETITIVE MARKETS IN ABSENCE OF REGULATION)

- **MOSTLY FREE RETAIL PRICE FORMATION**

Member States currently phasing out price regulations: Romania, Portugal, Lithuania and Greece and Denmark (electricity only);

Latvia: Gas market isolated, but also electricity regulated
Distribution of cost factors within retail electricity prices

Source: Eurostat energy statistics
Retail prices for electricity

ELECTRICITY RETAIL PRICES PAID BY HOUSEHOLDS AND INDUSTRIAL CONSUMERS IN 2011 (in EUR/kWh)

Source: Eurostat energy statistics
Note: Range for annual consumption of: household group DC: [2500 kWh – 5000 kWh]; industry group IC: [500 MWh – 2000 MWh].
Retail prices for electricity for domestic consumers in Euro

Retail prices for Electricity, Domestic consumers, Band DC (2 500 kWh < Consumption < 5 000 kWh), centEuro / kWh, 2nd half of 2012

Source: Eurostat, Energy Statistics
Retail prices for electricity for domestic consumers in PPS

*Purchasing power standard (PPS): artificial currency unit. Theoretically, one PPS can buy the same amount of goods and services in each country. PPS are derived by dividing any economic aggregate of a country in national currency by its respective purchasing power parities. PPS is the technical term used by Eurostat for the common currency in which national accounts aggregates are expressed when adjusted for price level differences using PPPs.
PV status quo in Germany

![Energy Costs Diagram](image-url)
Is demand response already happening?

**US:**

- 29 GW of load already registered for existing demand response programmes

**Europe:**

- Increasing number of aggregators in the UK
- Time of use tariffs available for residential consumers in UK, FR, IT, ES
- Residential pricing programmes and industrial load balancing programmes are being developed, ex: FR