Assessment of industrial energy prices

Strommarkttreffen

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Agenda

• Introduction: Electricity price components
• Taxes and privileges
• Methodology for estimations
• Results
• Conclusions
Electricity price components

**Wholesale prices**
- Capital costs for power plants
- Fuel costs
- GHG-costs
- Operation and maintenance
- Waste disposal

**System costs**
- Balancing energy
- Capacity costs

**Transmission and distribution**
- Capital costs for grid infrastructure
- Operation and maintenance
- Grid losses

**Retail costs**
- Measurement
- Billing
- Other retail costs

**Taxes, levies and subsidies**
- VAT
- Support for renewables
- Other taxes, levies, subsidies
Motivation: Studying Electricity price components in Germany 2013

In contrast to household prices, the energy component is the main driver of electricity prices for industrial customers.
Motivation: Studying electricity price components in the Netherlands 2013

In neighbouring countries, industrial customers are also widely excepted from tax and levy payments.
In France, energy intensive industries the energy component is lower than the wholesale market prices.
Motivation: Studying electricity price components in UK

In UK, prices for industrial customers are high compared to the neighbouring countries.
Methodology: combining future and spot prices according to acquisition strategies

**Mixed strategies**: Most power intensive industries combine different acquisition strategies to hedge the risks of price variations.

Most companies indicate a planning horizon of about two years.

**Assumptions:**
Companies trade continuously
Equal volumes for future products
Demand for base load – flat demand curve

We combine the future prices from two previous years with spot market prices.
Data: Future prices in Germany

(Cut-off Negative spot prices < -20)
Results: Average industrial electricity prices from 2006 - 2013

Estimated power price for industrial customers in Germany [ct/kWh]
Results: Comparison to average spot prices

![Bar chart showing the comparison between estimation for industrial energy price and average spot price from 2007 to 2013. The x-axis represents the years from 2007 to 2013, and the y-axis represents the cost in ct/kWh.]
Wholesale prices in neighbouring countries

Spot prices [€/MWh] for Germany, Netherlands, France, and UK from 2007 to 2012.
Comparison for an energy intensive customer

Power price for electric steel producers

- Germany
- Netherland
- France
- UK
- Texas
- Pennsylvania

Calculated electricity price [€ct/kWh]
Conclusions

General results

- There are various taxes and levies in European countries
- All countries privilege energy intensive industries
- The energy component is the most important factor for industrial electricity prices

Main weaknesses and future improvements:

- Long term contracts cannot be evaluated
- Autogeneration is a big factor in energy intensive industries
- Regulation and prices are constantly changing, one point in time does not show development of price competition
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