Impact of ongoing development of energy markets on industrial value chains in Europe

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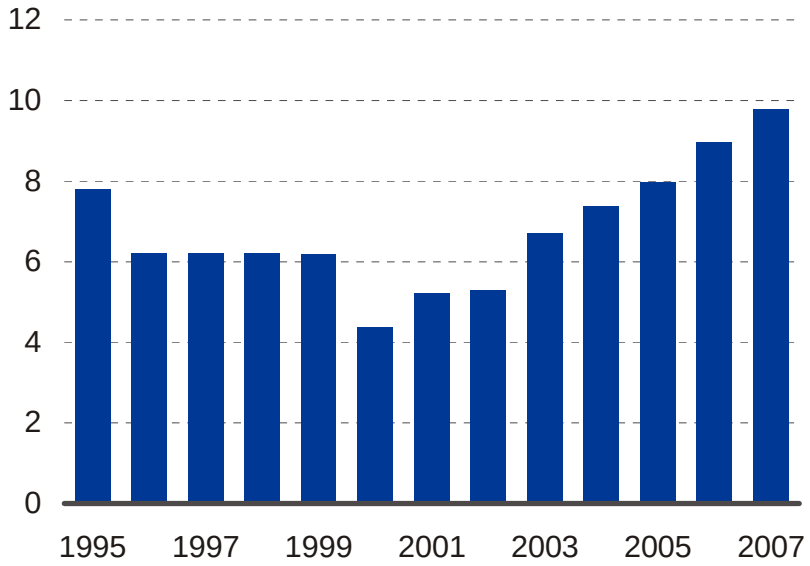
Dominant price drivers pointing north

- **At the end of the petroleum age all fossil fuels will become more expensive, and so will electricity**
  - Energy demand booming on global increase in consumption requirements (China, India etc.)
  - Security of supply declining at same time (insufficient investment, political problems)
  - Gap between supply and demand set to widen, leading to higher oil prices ...
  - … with substitution competition also driving up the price of natural gas, coal and hence electricity
- **Political factors behind short and medium-term price increases**
  - New energy technologies usually subsidised via price of electricity (e.g. renewables)
  - Modernisation and development of power stations and grid infrastructure cost a lot
  - Expansion of emissions trading harbours uncertainties (What comes after 2012?)
- **Energy price hikes are inevitable. Liberalisation dividend is still far too small as single European market for energy is not fully functional yet**

Industrial power prices in Germany trending up – impact on many sectors

Electricity prices for industrial customers in Germany

ct / kWh*

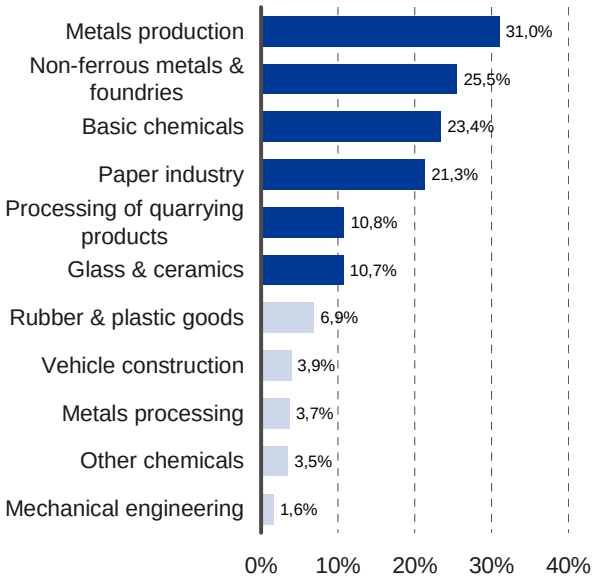


* Test case: 4 MW x 6,000 h/a = 24 m kWh, excl. VAT

Source: Eurostat

Electricity-intensive sectors in Germany

Intensity measured in kWh / EUR m*



* Quotient of power consumption and gross value-added

Source: HWWI

The case of Germany's metals and automotive industries shows the extreme risks facing the industrial value chain

- **Electricity accounts for 25-30% of total costs in metals / non-ferrous metals industry**
- **Because of fierce international competition further hikes in power prices will compel industries to relocate abroad**
- **Various negative impacts on automobile industry and parts suppliers**
  - **Non-availability of high-quality, tailor-made sheet metal**
  - **Just-in-time production at risk**
  - **Downtimes in highly automated vehicle production processes are extremely expensive**
  - **If basic materials industry abandons Germany, competitiveness will suffer and the vehicle industry would probably also relocate production abroad**
  - **R&D links with small and medium-sized mechanical engineering companies would dissolve**
  - **Job redundancies lead to loss of purchasing power, falling tax revenues and declining prosperity**
- **More production in non-European countries with lower environmental standards**
- **Well-meaning policy will ultimately achieve opposite effect: more global emissions!**
- **Other EU countries hit even harder – esp. Slovakia and Czech Republic, since per capita auto production is particularly high by international standards**

EU emissions trading needs sense of proportion from 2013/I

- **Little competition in power generation, so 100% of emission rights to be auctioned off**
- **Energy-intensive industries include e.g. building materials, paper, basic chemicals, steel and non-ferrous metals**
- **Unlike power generation, their products face tough international competition also from outside the EU**
- **Particular features of electricity and/or energy-intensive sectors:**
  - **Homogeneous products (e.g. cement, steel, aluminium)**
  - **Tradable on international markets**
  - **Fierce competition**
  - **Energy-intensive production**
- **Auction is general solution if all major countries take part**
- **If this is not the case, exceptions needed for power-intensive industries**

EU emissions trading needs sense of proportion from 2013/II

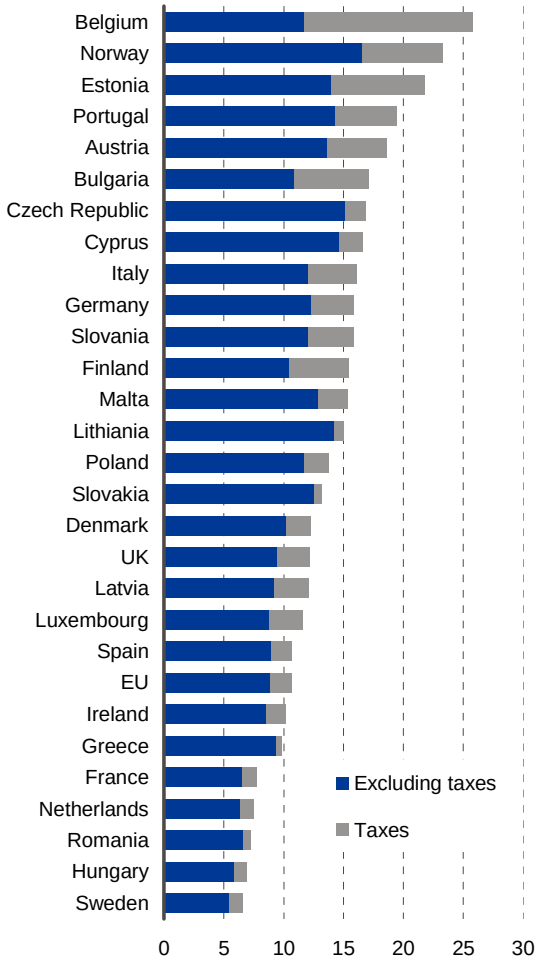
- **From 2013, no auctioning of emission rights, but alternative options:**
  - **Longer free allocation of emission rights for power-intensive sectors**
  - **Taxes**
  - **Sector-specific emissions trading systems**
  - **Import duties (e.g. for cement industry)**
  - **If auctions at EU level after all, then allow more clean development mechanisms (CDMs) and joint implementation (JI)**
- **EU decision as soon as possible (2009?), since planning certainty is important**
  - **EU does not want to announce exceptional rules until after 2010**
- **European Commission will shift more of the burden required to reduce CO_2 onto those sectors included in emissions trading. This conflicts with the target of implementing the most cost-efficient climate protection strategy possible**
- **Marginal avoidance costs are lower in sectors not covered by emissions trading**
  - **Private households, buildings, transport, trade, services**
- **If EU goes it alone, Germany would be hardest hit owing to its high dependency on exports, above-average CO_2 intensity of power generation and nuclear exit**

In some cases, rapid improvements are possible

- **Swift, full liberalisation of the power sector would boost competition**
- **Rapid expansion of interconnection points would simplify cross-border exchanges of electricity and stimulate competition**
- **Ukraine's full integration into power grid exchanges could "kill two birds with one stone"**
  - **Utilisation of power generating capacity: only 30%**
  - **EU imports raise supply in the EU and curb price inflation**
  - **Electricity export receipts would help Ukraine to modernise its power stations**
- **Promote new energy technologies and boost efficiency**
  - **More cogeneration of heat and power (CHP) enables more efficient use of fossil-based sources of fuel**
  - **Rapidly develop clean coal technologies**
  - **Make renewable energies competitive for business**

Household power prices will still vary widely in future

Household power prices in Europe
ct / kWh



Sources: Eurostat 2008, DIW

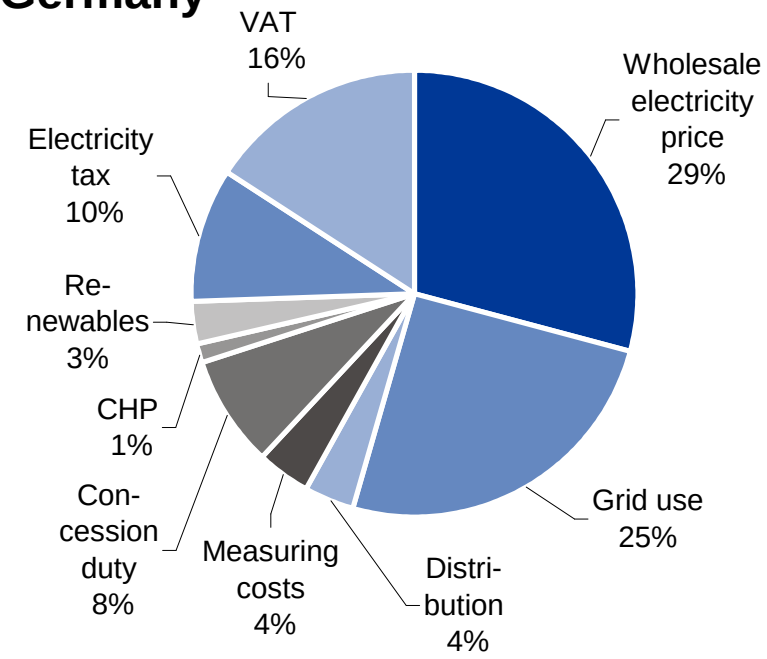
- Power prices for household customers will continue to differ in the EU even after the single European market for energy is in place

Reasons for differences in price

- Differing costs of power generation
- Differing energy policies
- Differing environmental policies

Household electricity prices will also climb

Breakdown of power prices in Germany



Source: BDEW 2007

- Similar price drivers as for industrial customers
- But the consequences are not as serious as in the case of electricity-intensive industry
- Power prices hardly likely to trigger emigration wave!

Conclusion

- The price of electricity could be the last straw for power-intensive industries in Europe, causing them to collapse under the weight of increased costs
- For households, the electricity price is not the deciding factor
- Therefore, there seems to be an urgent need for flexibility for electricity-intensive industries in the EU emissions trading scheme after 2012
- The more successful we are in advancing the cause of energy market deregulation, the sooner we can slow the uptrend in electricity prices