

Redistributing electricity system costs to help consumers?

Georg Zachmann

Diverging prices are a main concern

Structural long term price drivers:

+ Relatively increasing prices in US:

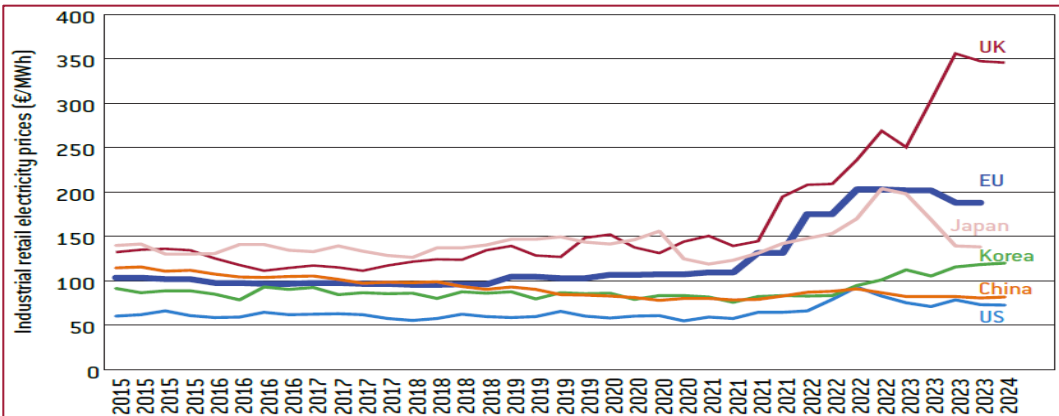
- Relocation of energy intensive sectors
- energy exports

↕ Trade cost => ≠

- Relatively declining prices in EU:

- Relocation of energy intensive sectors
- energy imports

=> „capped convergence“



Source: Bruegel based on Chief Economist Team/DG ENER/European Commission, based on Eurostat (EU), Energy Information Administration (US), Department for Energy Security and Net Zero (UK), International Energy Agency (Japan and Korea), CEIC (China). Note: European Central Bank conversion rates.

Source: Heussaff (2024)

Ways to reduce electricity-price pressure on consumers

Redistribute cost

- From ratepayers to taxpayers
- Between consumer groups
- Across borders
- Lower economic rents for (certain parts of) energy industry

Lower capital cost

- Reduce uncertainties
- Better allocate risk
- Shift risks to state

Lower quality

- Lower reliability

Less costly treatment of 'externalities'

- Lower or more efficient environmental / labour / safety standards

Reduce inefficiencies

- Improve dispatch
- Improved mix of generation, storage, grid, and consumption assets
- Lower transaction cost

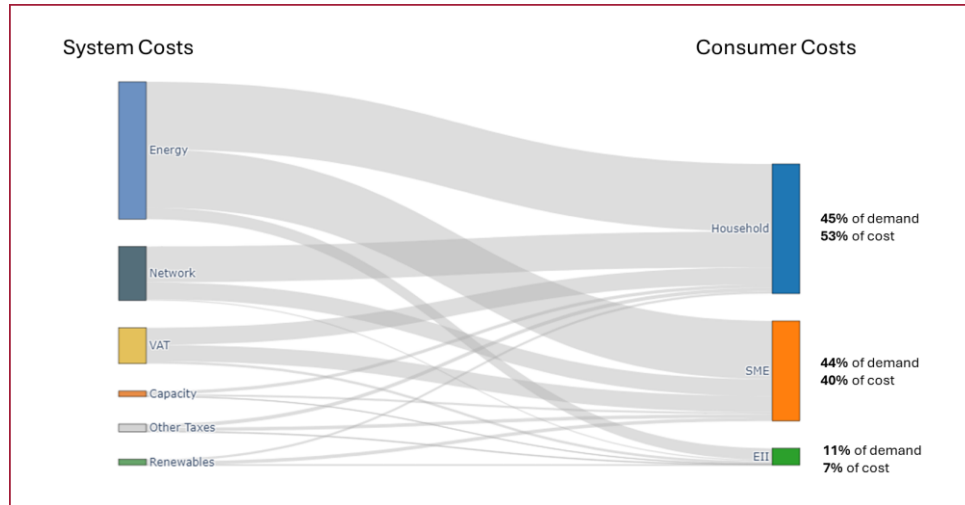
Cost re-distribution can be achieved with very different policies:

- Taxes and Levies
- Market Design
- Infrastructure investments
- Network Tariffs
- Support Schemes

Redistribute cost

- **Between consumer groups**
- From ratepayers to taxpayers
- Across borders
- Lower economic rents for (certain parts of) energy industry

Electricity cost distribution between consumers



Source: Bruegel elaboration based on Eurostat data.

Examples for cost-redistribution across consumers

Network tariffs can discriminate between

- Large vs. small consumers
- Flexible vs. inflexible consumers
- Constant vs. volatile consumers
- Those that (can) self-produce
- ...

Market design can discriminate between

- Those that can provide demand response (in capacity market)
- Those that have access to inframarginal plants
- ...

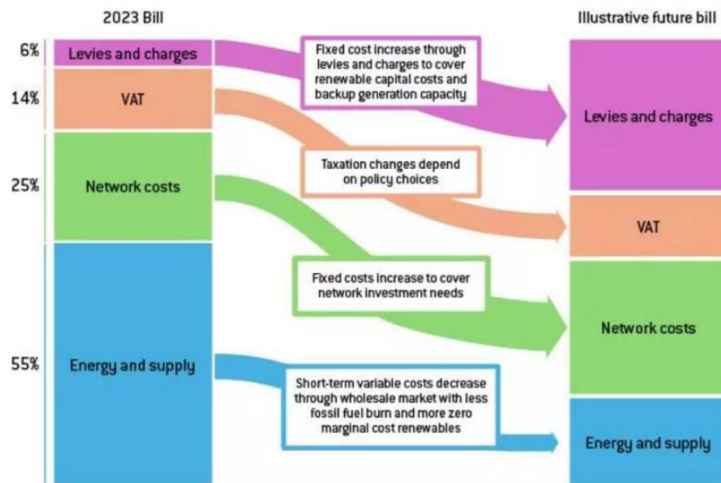
Typically: re-distribution of the fixed cost of the system

- Network costs
- Costs of long-term state-backed contracts for renewables
- Costs of backup generation capacity

In the longer term, the cost structure of electricity will change with the energy transition

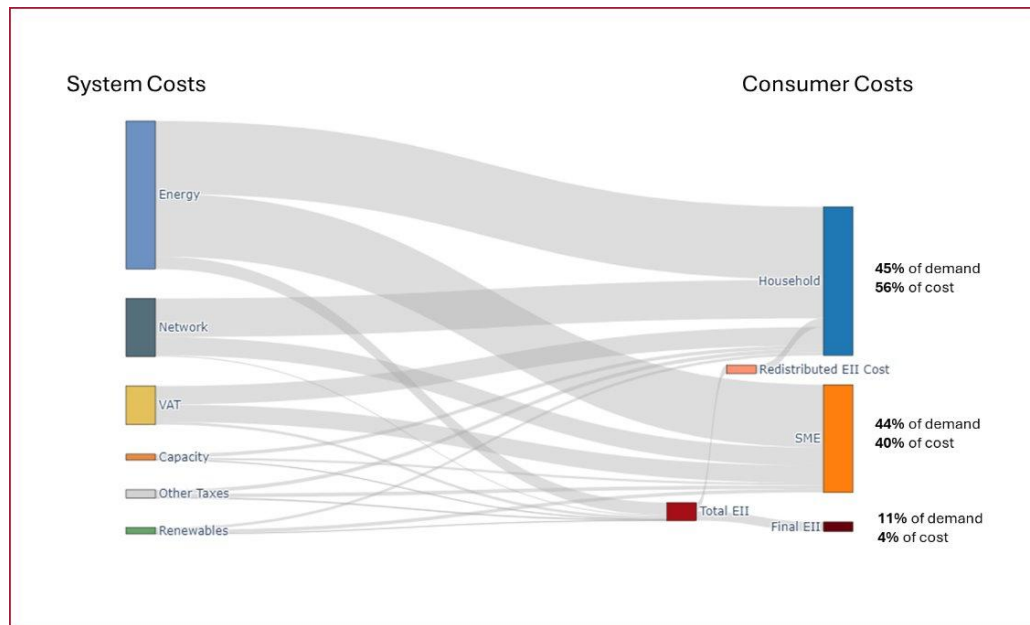
- **Variable costs** go down as fossil fuels become less important in the electricity system
- **Fixed costs** go up with the capital costs needed for renewables, grids and backup generation capacity
- **The billion-euro question:** will the reduction in variable costs outweigh the increase in capital costs?
- **Distributional issue:** recovering fixed costs fairly, as they are typically mediated through the state

Figure 7: Expected changes in electricity cost components with the energy transition



Illustrating redistribution of EII costs to households

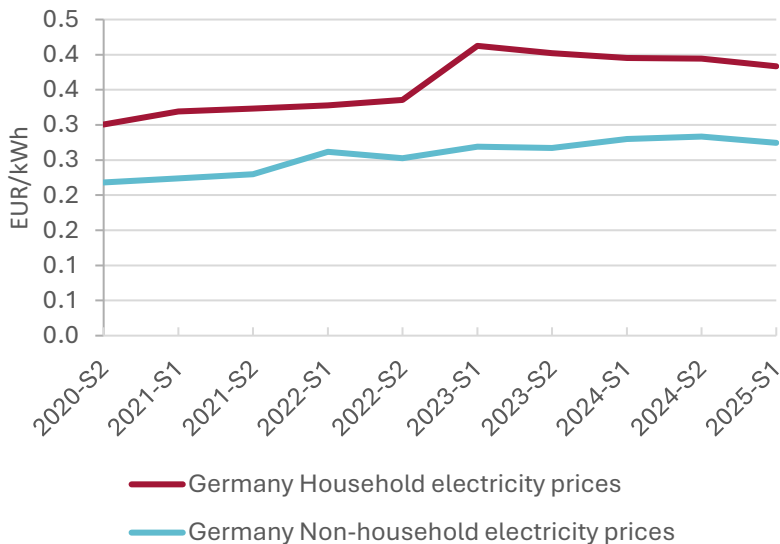
Costs *could* be shifted from energy-intensive industry to households.



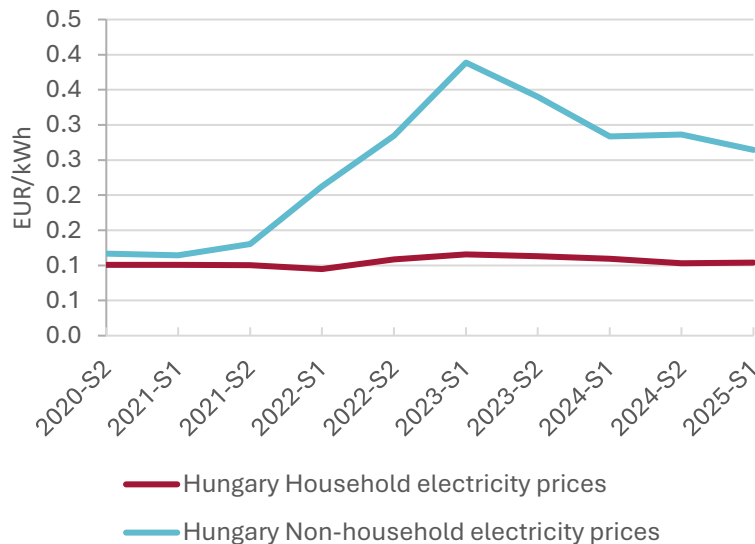
Source: Bruegel elaboration based on Eurostat data.

Industrial vs. Household electricity prices

Germany



Hungary



Source: Bruegel based on Eurostat data.

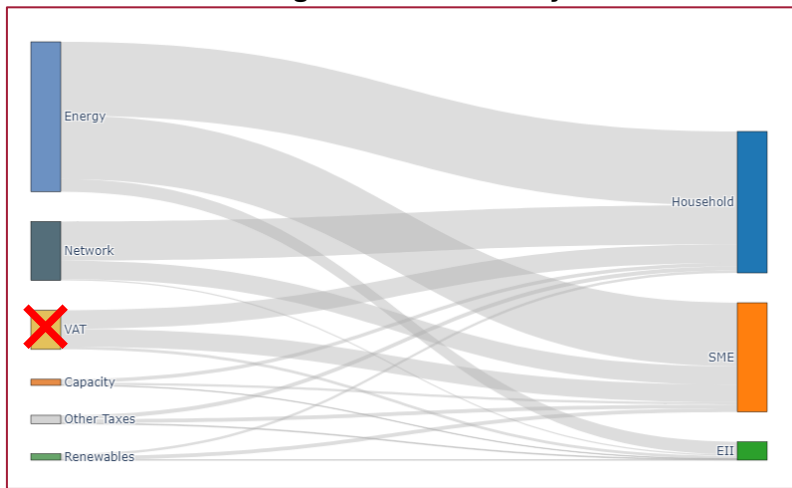
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Estimating the trade-offs

Example: Remove VAT from electricity

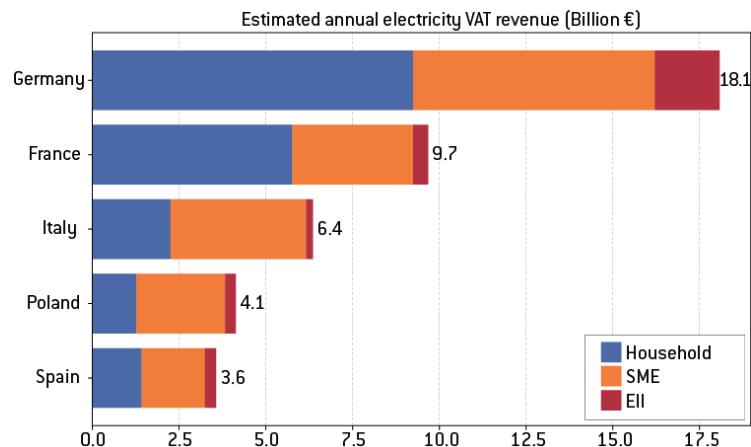
Removing VAT from electricity bills



Source: Bruegel elaboration based on Eurostat data.

Can be done relatively quickly ...

... but this has substantial fiscal cost



Examples: Taxes and Levies

Electricity taxes:

- In the short term – reducing electricity taxes helps to foster electrification which is crucial for phasing out dirty and insecure gas
- In the long term – the state needs the revenues from an energy tax
 - Electricity taxes used to be progressive and feature low dead-weight losses
 - Now they become more regressive and elastic

⇒ **We might need a new energy taxation regime – for the transition and beyond**

Subsidies:

- Massive subsidies or contingent liabilities can lower electricity prices – but at sometimes hidden cost

Redistribute cost

- Between consumer groups
- From ratepayers to taxpayers
- **Across borders or regions**
- Lower economic rents for (certain parts of) energy industry

Redistribute cost

- Between consumer groups
- From ratepayers to taxpayers
- Across borders or regions
- **Lower economic rents for (certain parts of) energy industry**

Shifting cost between producers and consumers

- **More competition**

- **Winndfall profit taxes**

- **Reneging on network regulation**

} Can substantially increase
much needed capital cost in
the long term

Conclusion 1: Adding a third economic criteria to electricity policy decisions

In academic analysis most focus is on

1. **Efficiency of Dispatch**
2. **Efficiency of Investment**

But policymakers are typically most interested in:

3. **Distributional effects**

- There can be good industrial, social and regional policy reasons for considering active cost-redistribution.
- And efficient electricity policies often have distributional effects that might need to be addressed.
- Some distributional issues gain in importance due to higher fixed-cost share; and is distributional questions are also transforming (electricity demand might become more elastic)

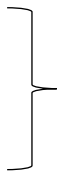
Conclusion 2: Redistributing cost does (typically) not lower the cost!

- **Often even negative incentive effects:**

- Locking in too high demand in some sectors (-> Classic state-aid questions: temporary, targeted and proportionate)
- Under-investment and increasing capital cost
- Inefficient dispatch

- **In the long-term we should focus on**

- Lowering capital cost
- Increasing efficiency



Completing the internal
electricity market!

Ways to reduce electricity-price pressure on consumers

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Conclusion 3: Some do's and don't's

- **The fixed costs of the electricity system should be recovered primarily from inelastic consumption**
- **Develop transparent analytical tools**
 - All distributional policy levers interact
- **Prevent race to the bottom between member states**

Policy Brief
Issue n° 16/25 | April 2025

Who should be charged? Principles for fair allocation of electricity system costs

Conall Heussaff, Eva Jüngling, Simone Tagliapietra
and Georg Zachmann

Executive summary

Conall Heussaff (conall.heussaff@bruegel.org) is a former Research Analyst at Bruegel

Eva Jüngling (eva.juengling@bruegel.org) is a Research Assistant at Bruegel

Simone Tagliapietra (simone.tagliapietra@bruegel.org) is a Senior Fellow at Bruegel

Georg Zachmann (georg.zachmann@bruegel.org) is a Senior Fellow at Bruegel

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THE HIGH COSTS in the European Union of supplying electricity can only be structurally reduced through decarbonisation and deeper European electricity system integration. In the short-term, policymakers have few choices. They can redistribute system costs by shifting components from one consumer to another. Another immediate distributional option would be to reduce energy taxation, implicitly shifting costs to the taxpayer.

MEANWHILE, DECISION-MAKING PROCESSES that translate electricity system costs into final consumer prices are fragmented. Rules on the short-term production, transmission and consumption of electricity are determined at EU level. National regulators and governments determine how the fixed costs of the system are recovered from consumers, while national policymakers also set energy taxes.

THIS POLICY BRIEF sets out options for shifting the fixed costs of the electricity system between consumers, for changing energy taxation to reduce prices and for evaluating systemic trade-offs between system cost and other characteristics, such as sustainability and reliability. We also estimate the quantitative effects of shifting costs between consumers and reducing taxes on electricity.

WE SET OUT four principles for pricing electricity fairly. Policy interventions in the electricity system should not seek to achieve broader economic objectives at the expense of energy-policy goals. Consumer prices should incentivise efficient system operation. Carbon emissions should be priced in. The fixed costs of the electricity system should be primarily recovered from inelastic consumption.

EUROPEAN POLICYMAKERS SHOULD develop transparent analytical tools to assess the distributional effects of electricity-policy interventions. Lessons should be learned from the energy crisis, during which EU and national policies attempted to shield consumers from price impacts, and these lessons should form the basis of ongoing efforts to reduce prices. EU guidelines for electricity cost recovery should be established, following fundamental economic principles, and could form a policy toolbox for national governments to reduce energy prices. Finally, the long-term strategic goal of deeper physical and institutional integration of European electricity markets should be pursued to structurally reduce electricity prices.



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Thank you!

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