CHAIRE EUROPEAN ELECTRICITY MARKETS
Fondation Paris-Dauphine

FTI·CL Energy

Out-of-Market Financing of Renewables in EU Countries: Who Pays for the Extra Cost?

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CEEM Workshop

DRIFTING APART: COSTS, PRICES AND TARIFFS IN EU ELECTRICITY MARKETS

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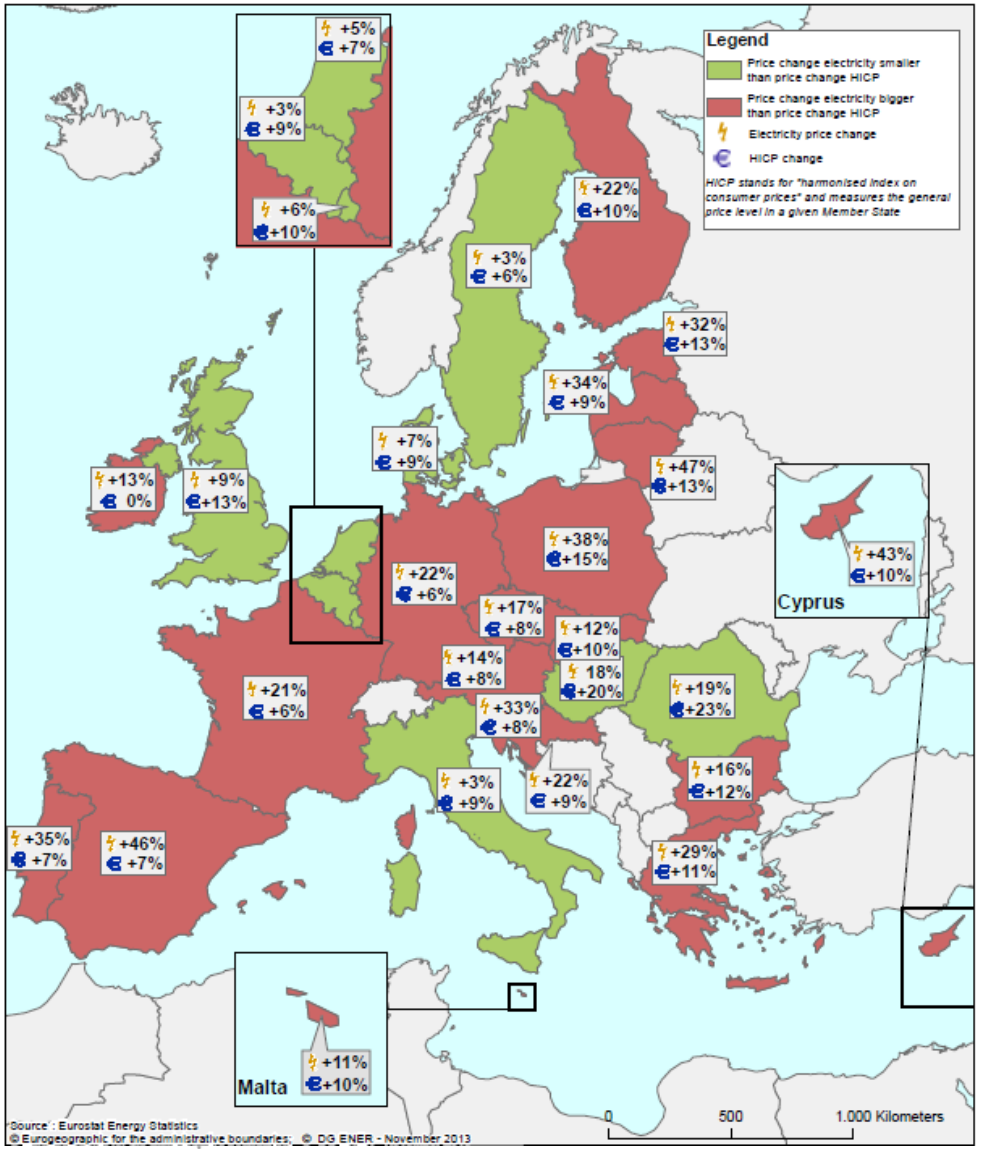
Agenda

- Power prices are on the rise in Europe : what are the drivers?
- RES support policies are a key driver of power price increases
- The case of France – CSPE drives power price increase
- The case of Germany – residential users pay for RES support policies and industrials are largely exempted
- Conclusions

Power prices are on the rise in Europe: what are the drivers?

On average, the EU household electricity prices increased by more than 4% a year between 2008 and 2012

2008-2012 % change in electricity prices for median household consumers (2500 kWh < consumption <5000 kWh

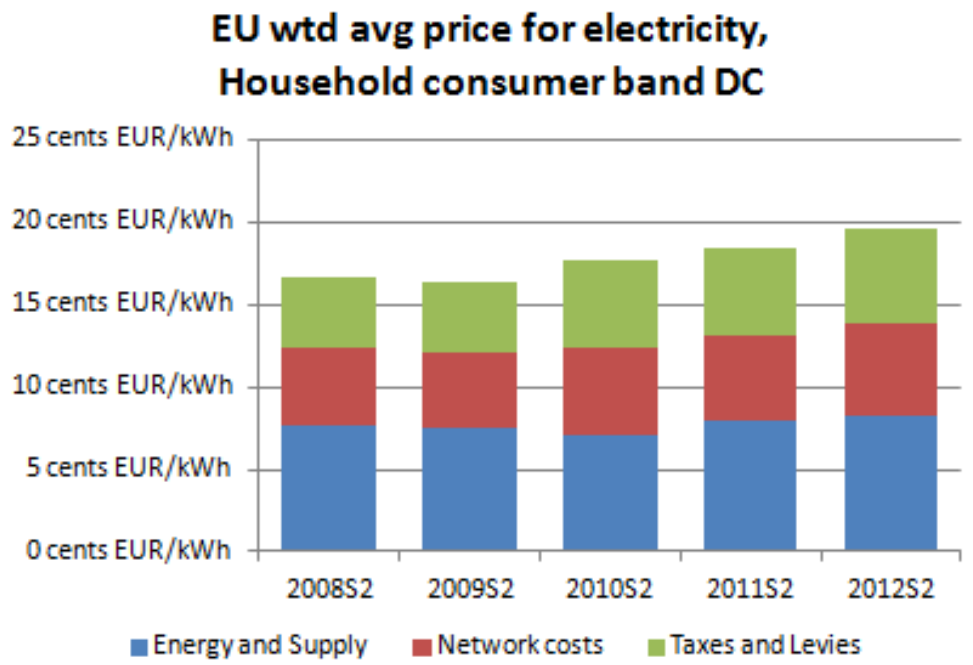


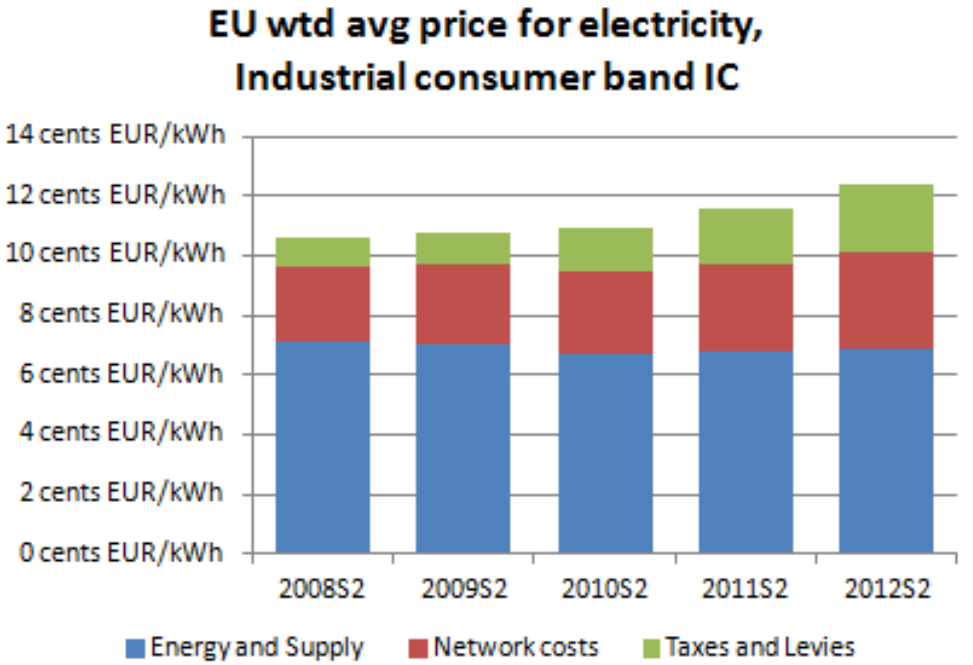
- Over 2008-2012, household electricity prices increased in 19 out of 28 Member States faster than the harmonized index of consumer prices (HICP).
- Over 2008-2012, industrial electricity prices (excluding VAT and recoverable taxes) have gone up by about 3.5% per year.
- Despite efforts towards the creation a single EU market for energy, retail price conditions remain persistently different across borders.
- The ratio of highest to lowest price in the Member States is in the range of 4 – 2.5 to 1.

Source: Energy prices and costs report, European Commission staff working document. {COM(2014) 21 final} {SWD(2014) 19 final} Brussels, 17.3.2014

The energy component remained the most important element in the end consumer bill, but its relative share decreases

Evolution of EU28 electricity retail price by components: levels, selected household and industrial bands

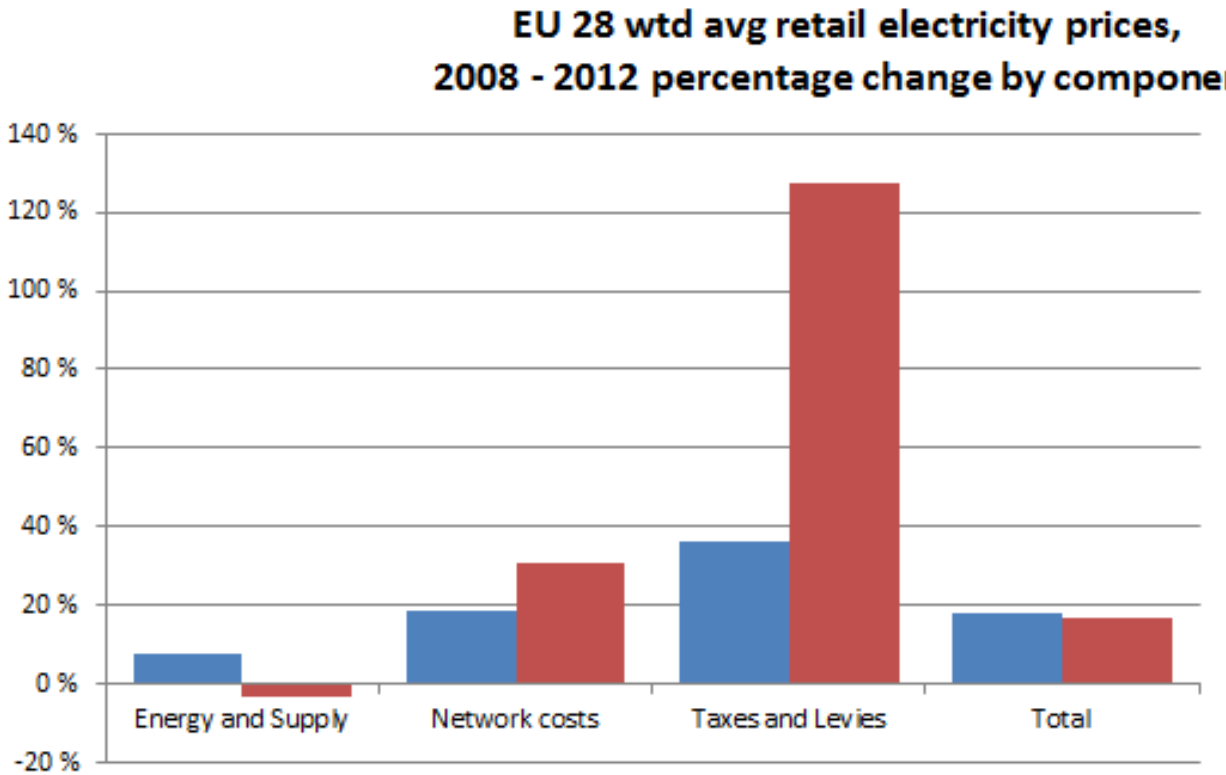




Note: Prices include all taxes in the case of households. Prices exclude VAT and other recoverable taxes in the case of industry, as well as industry exemptions (data not available).

Source: Energy prices and costs report, European Commission staff working document. {COM(2014) 21 final} {SWD(2014) 19 final} Brussels, 17.3.2014

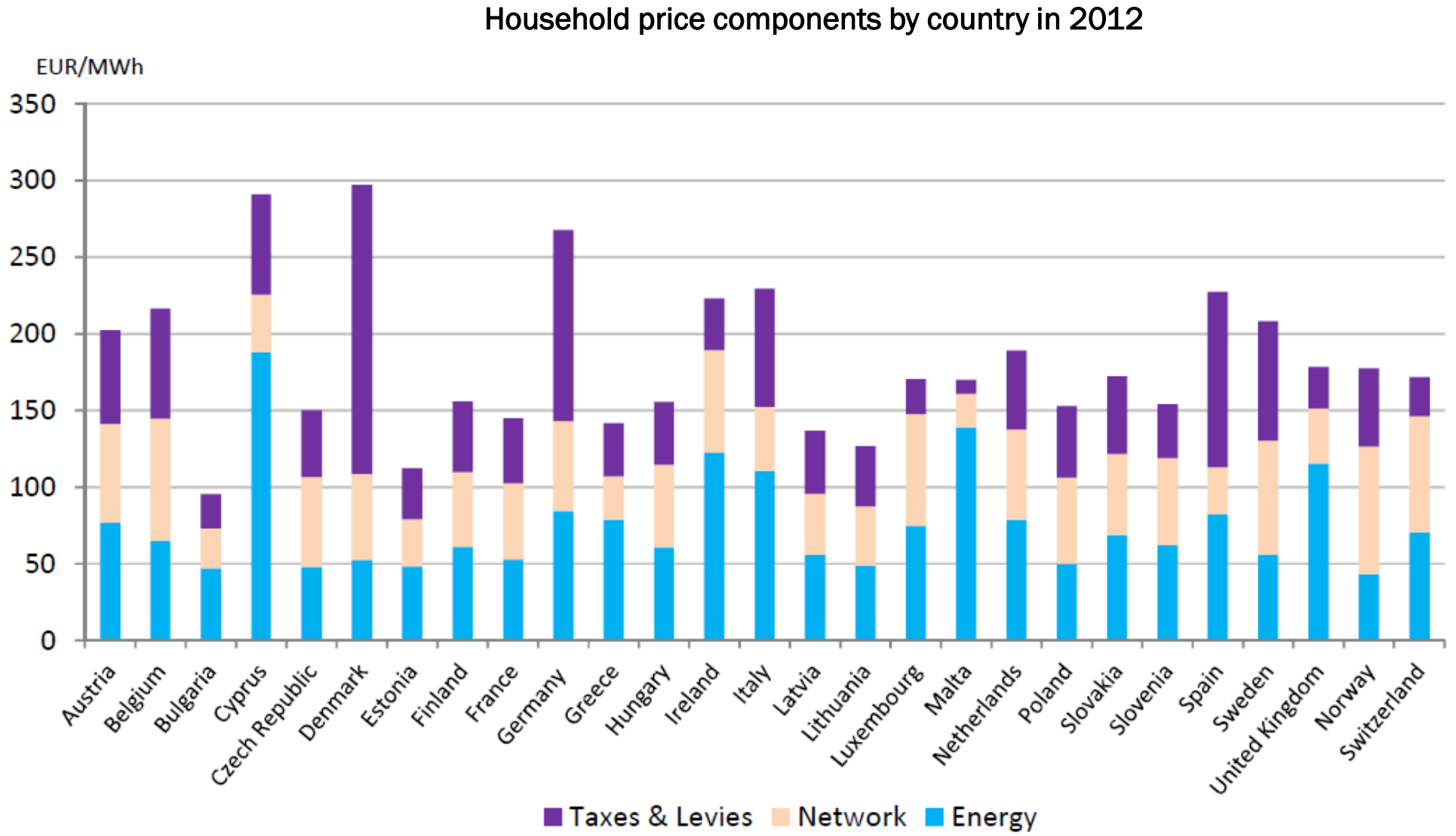
Taxes and levies, as well as network costs are the key drivers of end user price increases



Source: Energy prices and costs report, European Commission staff working document. {COM(2014) 21 final} {SWD(2014) 19 final} Brussels, 17.3.2014

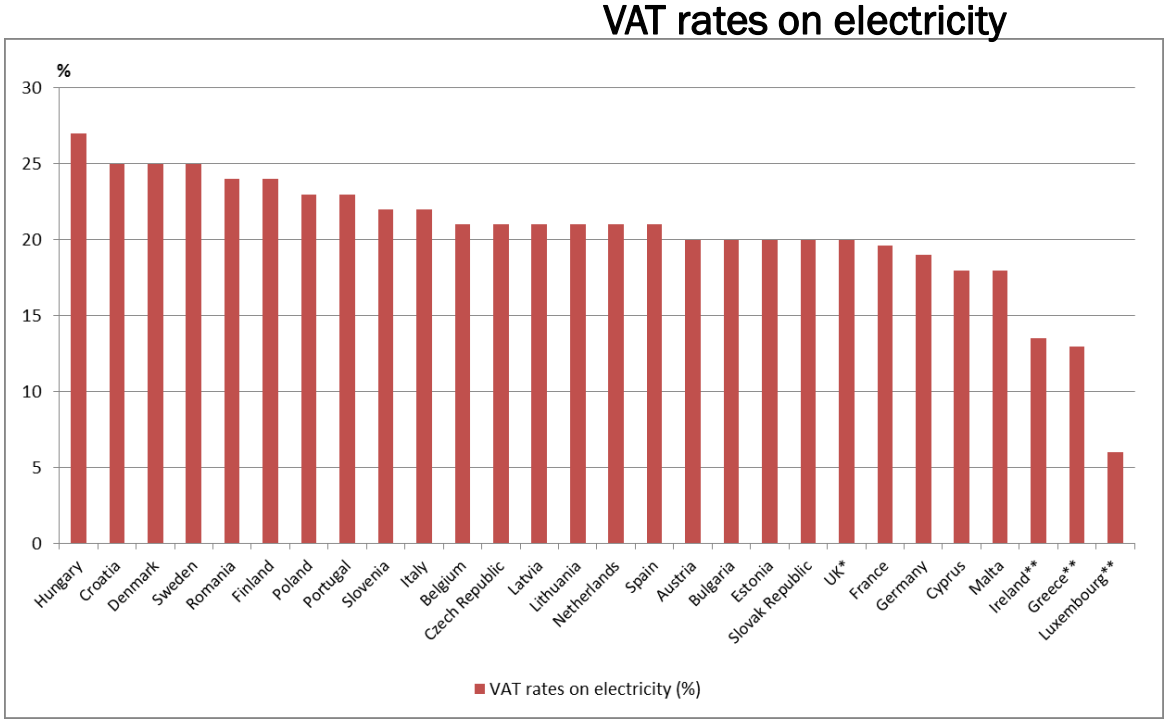
- The energy element went up only slightly in the case of households and went down in the case of industrial consumers.
- Taxes and levies went up by the most, especially for industry – by 127% for the EU weighted average price.
- In the case of households, the taxes and levies component of the EU weighted average price went up by 36% and its share accounts on average for 30% of the final price.
- Network costs went up by 30% for industrial consumers and by 19% for households.

Taxes and Levies represent a growing share of the total end user price in most countries



Source: Energy prices and costs report, European Commission staff working document. {COM(2014) 21 final} {SWD(2014) 19 final} Brussels, 17.3.2014

Costs related to taxation vary significantly across countries and between domestic and industrial users



Source: Energy prices and costs report, European Commission staff working document. {COM(2014) 21 final} {SWD(2014) 19 final} Brussels, 17.3.2014

Note: *Reduced VAT rate of 5% for electricity non-business use in the UK.

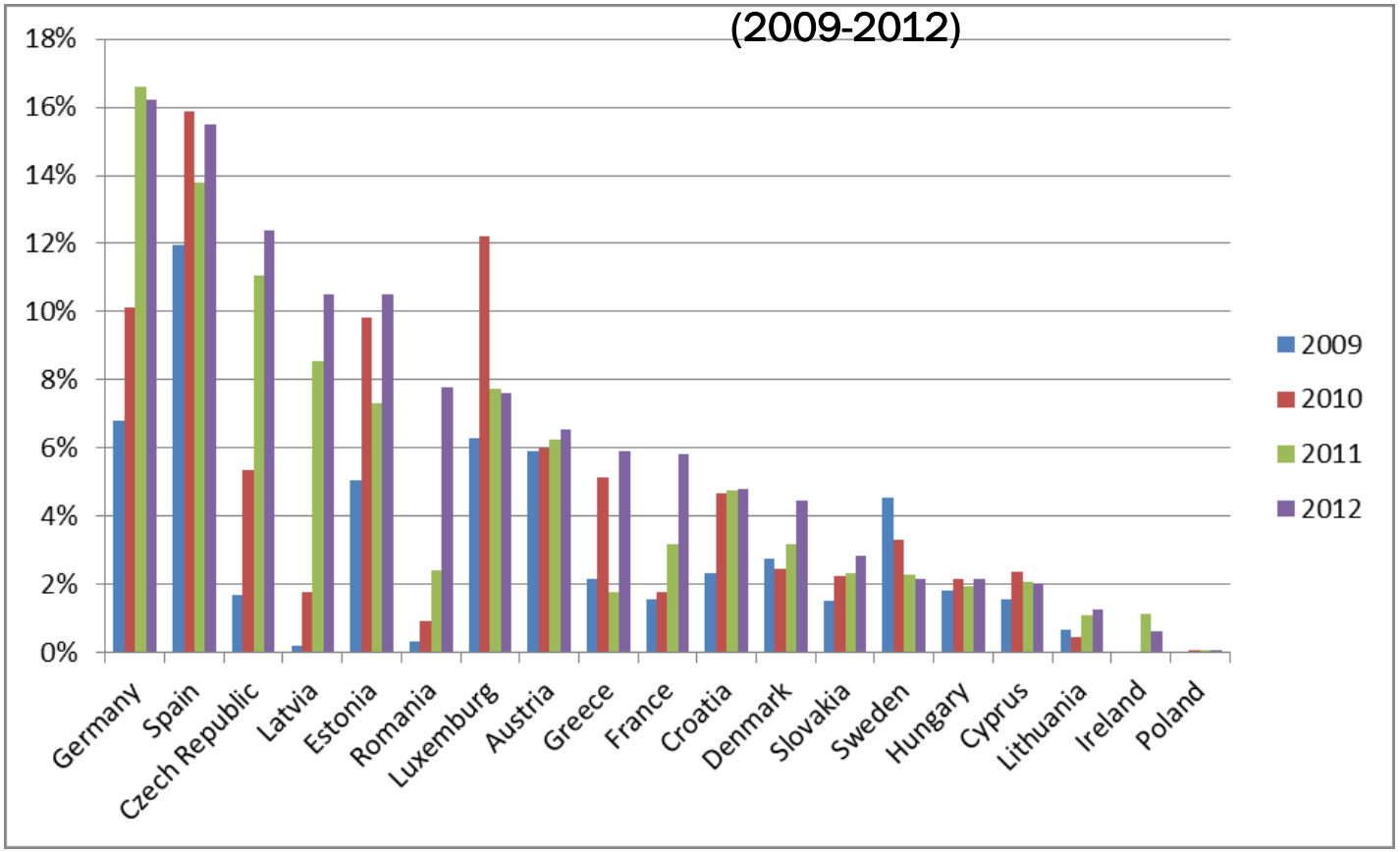
**Reduced VAT rates for electricity (business and non-business users) in Ireland, Greece and Luxembourg.

- Taxes on energy can be divided into broad consumption taxes (such as VAT) and specific taxes (such as excise duties, energy and carbon taxes).
- Carbon taxes are generally designed to complement rather than overlap with the ETS (e.g. Denmark and Sweden).
- The VAT Directive establishes a standard rate of at least 15%. In the case of electricity, VAT rates vary btw. 15% & 27%.
- The Energy Tax Directive sets minimum levels of excise duty for a wide range of energy sources and fuels, plus electricity, while recognising that "*certain exemptions or reductions … may prove necessary … because of the risks of a loss of international competitiveness or because of social or environmental considerations*".
- Many Member States set lower excise duty rates for commercial and/or industrial use.

RES support policies are a key driver of power price increases

Levies to finance RES development have significantly contributed to the recent end user price increase

Evolution of the share of RES-E levies in the electricity price for households in selected EU countries (2009-2012)



Source: Energy prices and costs report, European Commission staff working document. {COM(2014) 21 final} {SWD(2014) 19 final} Brussels, 17.3.2014

Note: Only states with data for all the years in the period 2009-2012 included. Calculated as % of price for consumers with annual consumption between 2500 and 5000 kWh (Eurostat consumption band DC), excluding VAT.

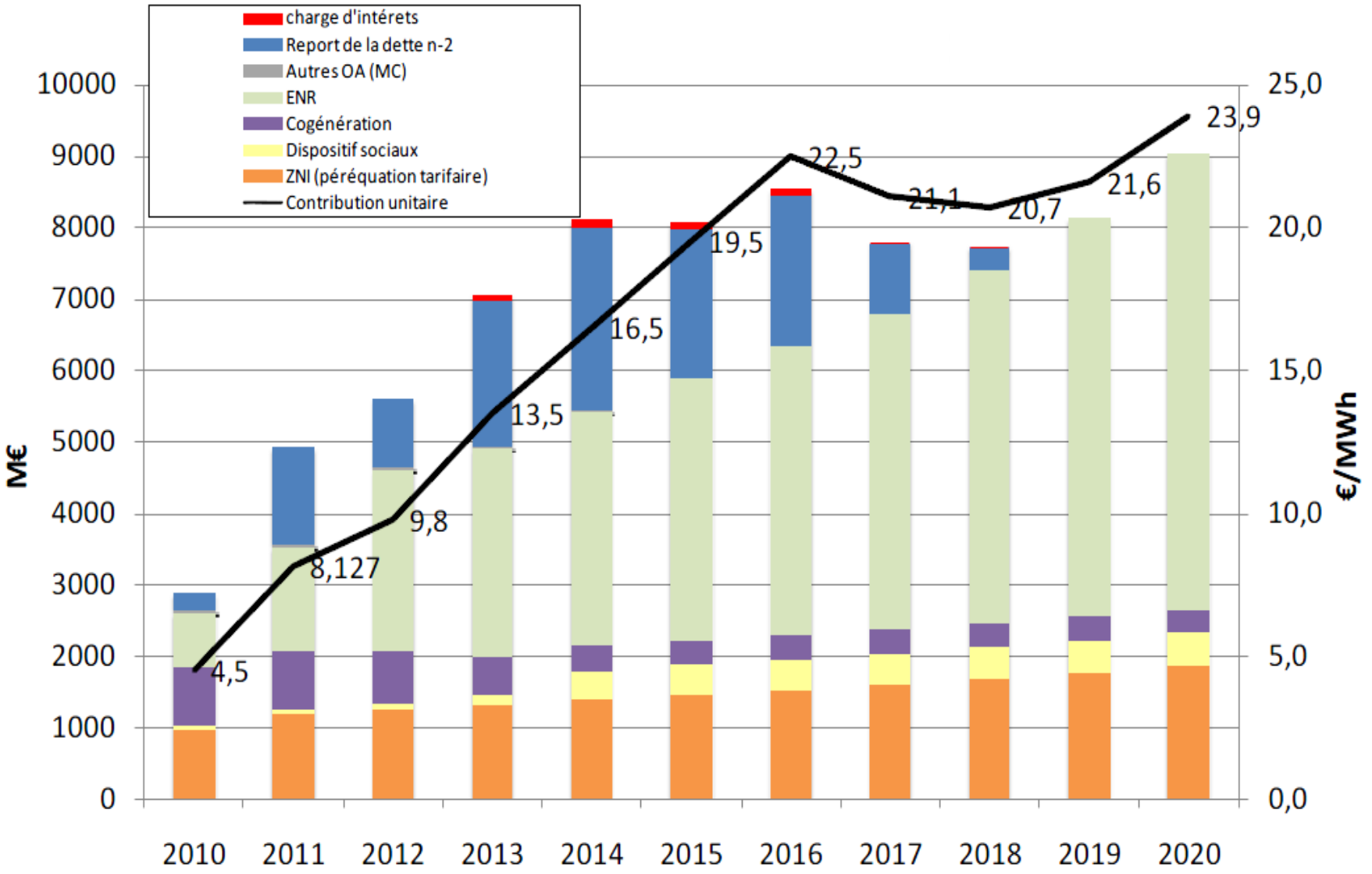
Source: Commission services calculations based on Eurostat and Member State data

- Emissions trading schemes, renewable energy policies, energy efficiency policies and investment in infrastructure are often funded through specific levies and all have an impact on electricity bills.
- In the period 2009-2012 the share of levies and charges used to support electricity generated from renewable energy sources has increased, rather abruptly in some Member States.
- In 5 Member States support for renewable electricity generation in 2012 accounts for more than 10% of household electricity price, excluding VAT.

The case of France – CSPE drives power price increase

Contribution au Service Public de l'Electricité (CSPE) : A five-fold increase in 10 years

Evolution prévisionnelle des charges et de la CSPE (en €/MWh)

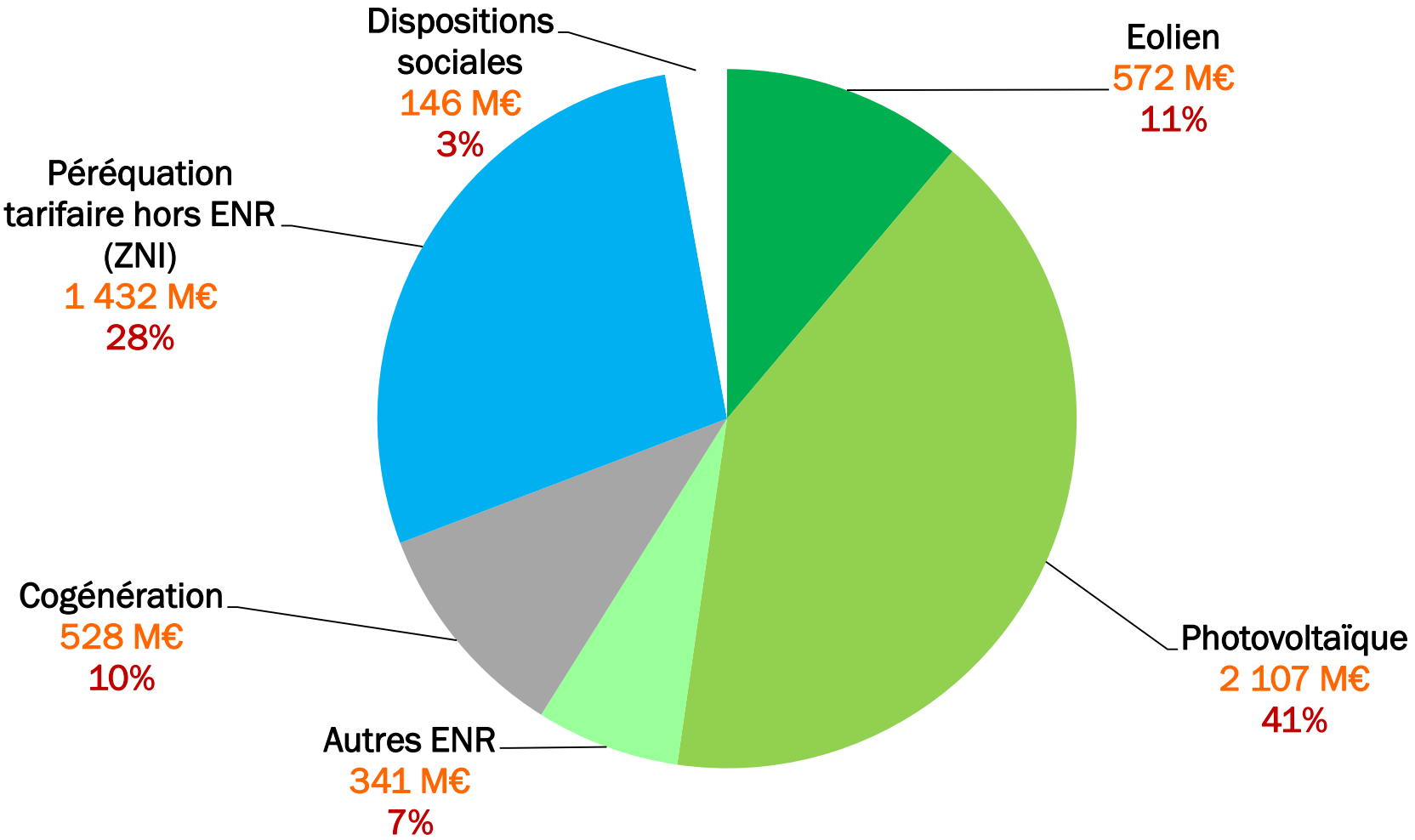


Source : Ministère de l'Ecologie, du Développement Durable et de l'Energie

Breakdown of the CSPE: solar PV represents a growing share

Répartition des charges de service public en 2013

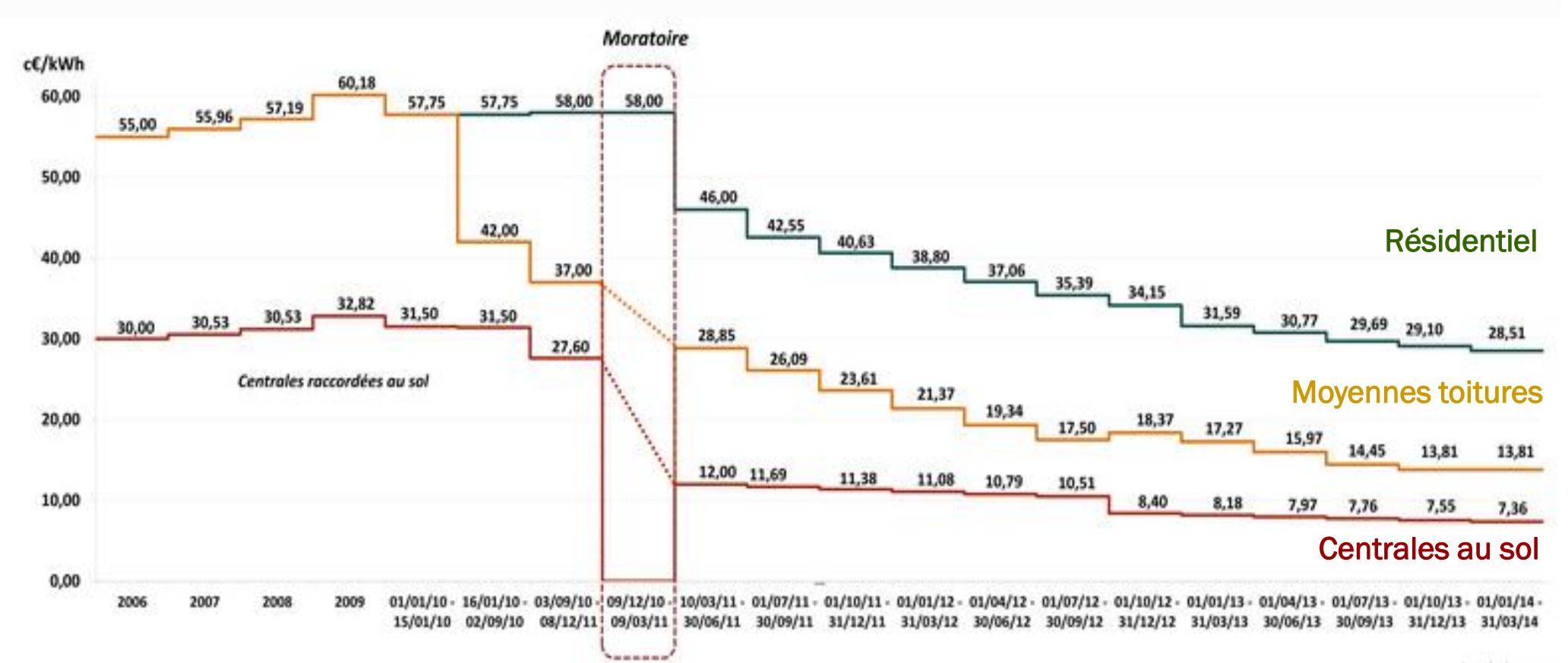
5,1 milliards d'euros au total (p)



Source : d'après données CRE

Despite a steady and significant decrease of solar PV feed in tariffs

Evolution du tarif de rachat photovoltaïque : l'exemple de la France

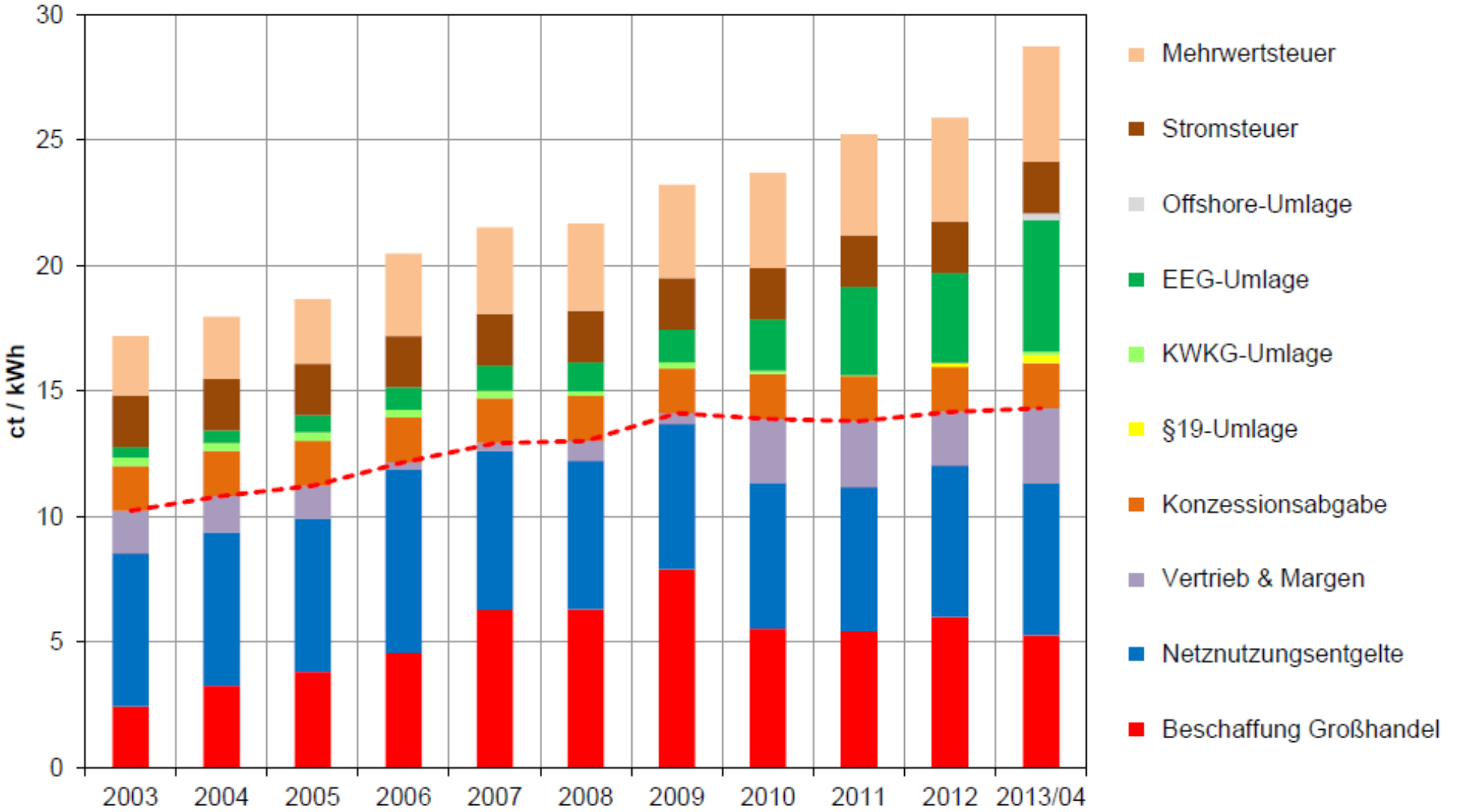


Source : Observatoire de l'énergie solaire photovoltaïque

The case of Germany – residential users pay for RES support policies and industrials are largely exempted

The case of Germany – a significant increase in prices largely driven by the EEG cost

Evolution of end user electricity price for German households



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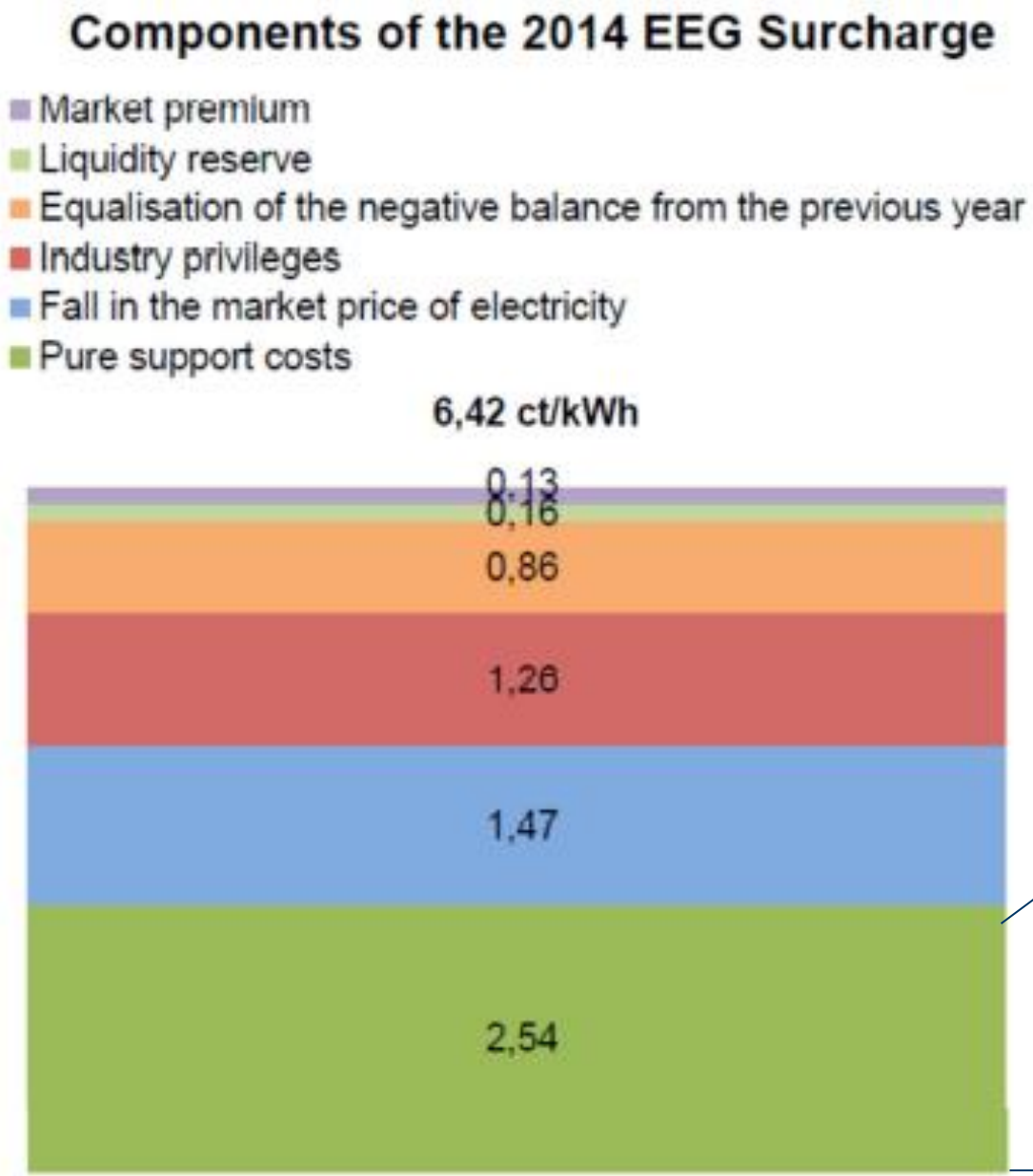
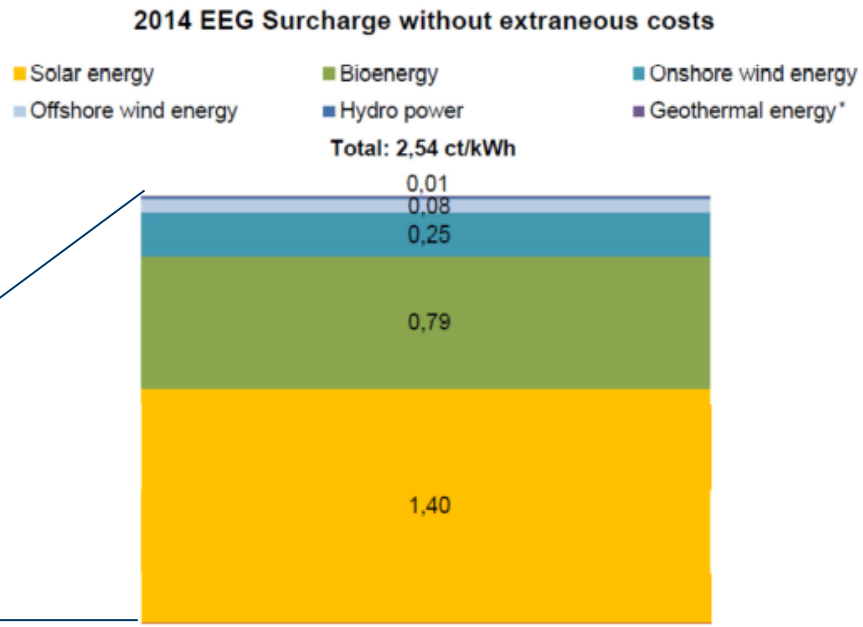
Source: Okoinstitut. EEG-Umlage und die Kosten der Stromversorgung für 2014. Eine Analyse von Trends, Ursachen und Wechselwirkungen. Kurzstudie im Auftrag von Greenpeace. Berlin, Juni 2013

Breakdown of the German EEG RES surcharge

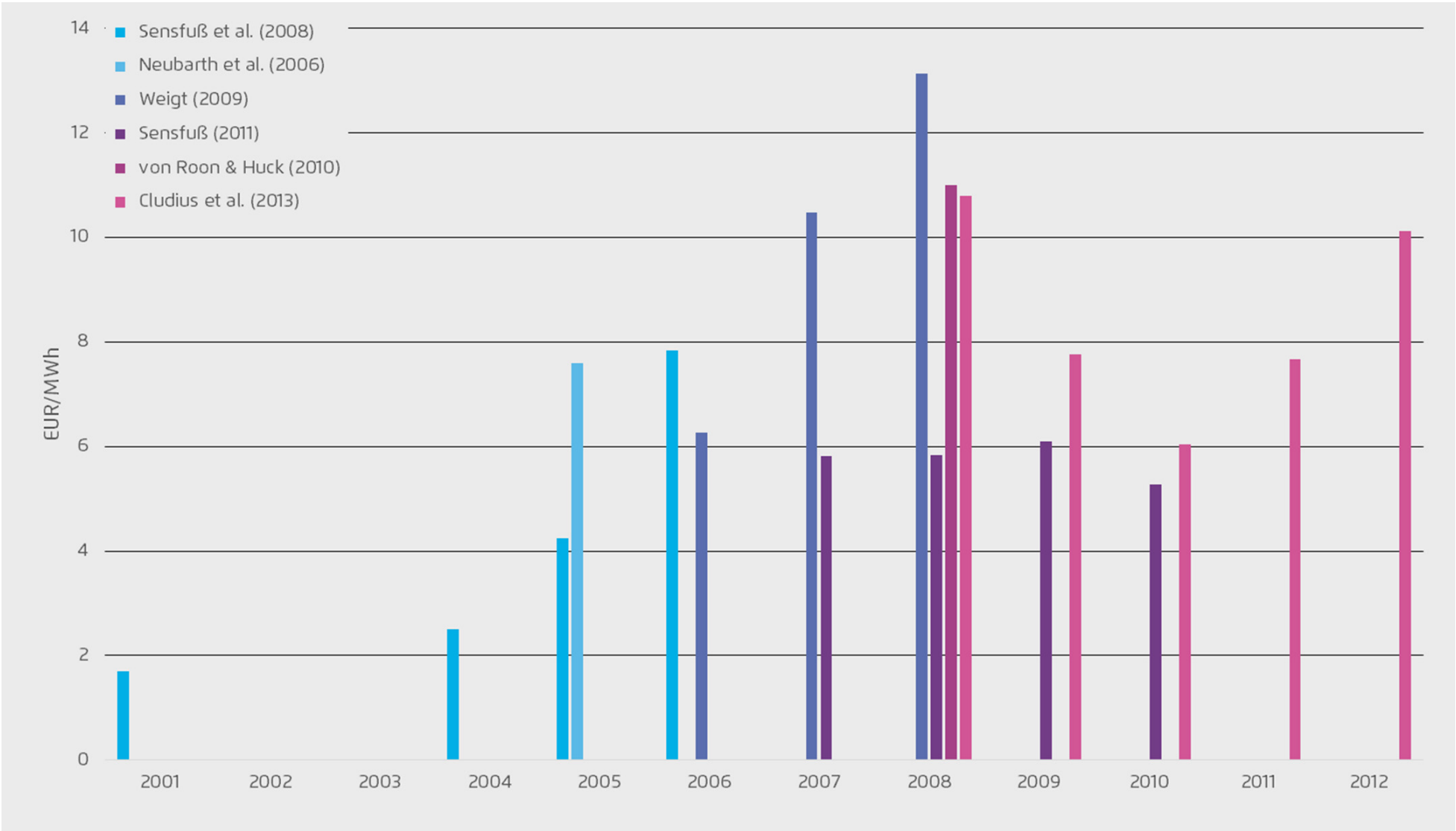


Source: BEE (Bundesverband Enerneuerbare Energie e.V.) 2013. The EEG surcharge for 2014. 4 September 2013.



Depressive effect of RES on wholesale power prices a key source of EEG increase… and end user price increases

Reduction of the wholesale price on the electricity exchange due to renewable energies (merit order effect)



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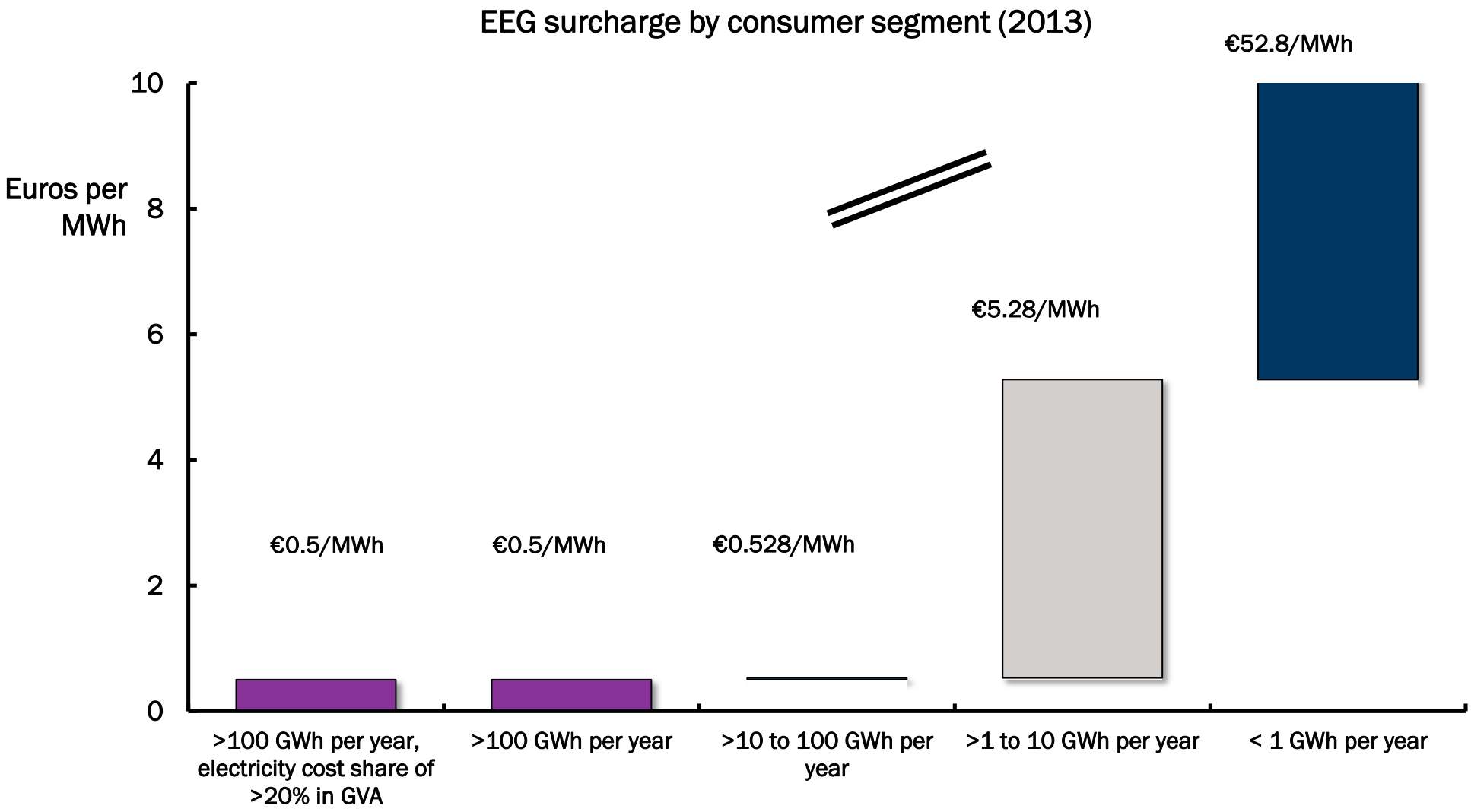
Source: Okoinstitut, in Proposal for a Revision of the Industry Exemption rules under the German EEG Towards a model that complies with European Laws and balances energy, industry and consumers' stakes

German industrial users are largely exempt from the EEG surcharge costs



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Source: eeg-kwk.net. Note: MWh = megawatt-hours; GWh = gigawatt-hours; GVA = gross value added

Tax exemptions for industrials are not limted to the EEG in Germany

Transport cost reduction

- German electro-intensive industrial with a continuous consumption are totally exempted from grid access charges (consumption>7000 hours).
- Counter cyclical industrial (industrial with lower consumption during peak hours) are exempted from 80% of the grid access charges.

Tax exemptions

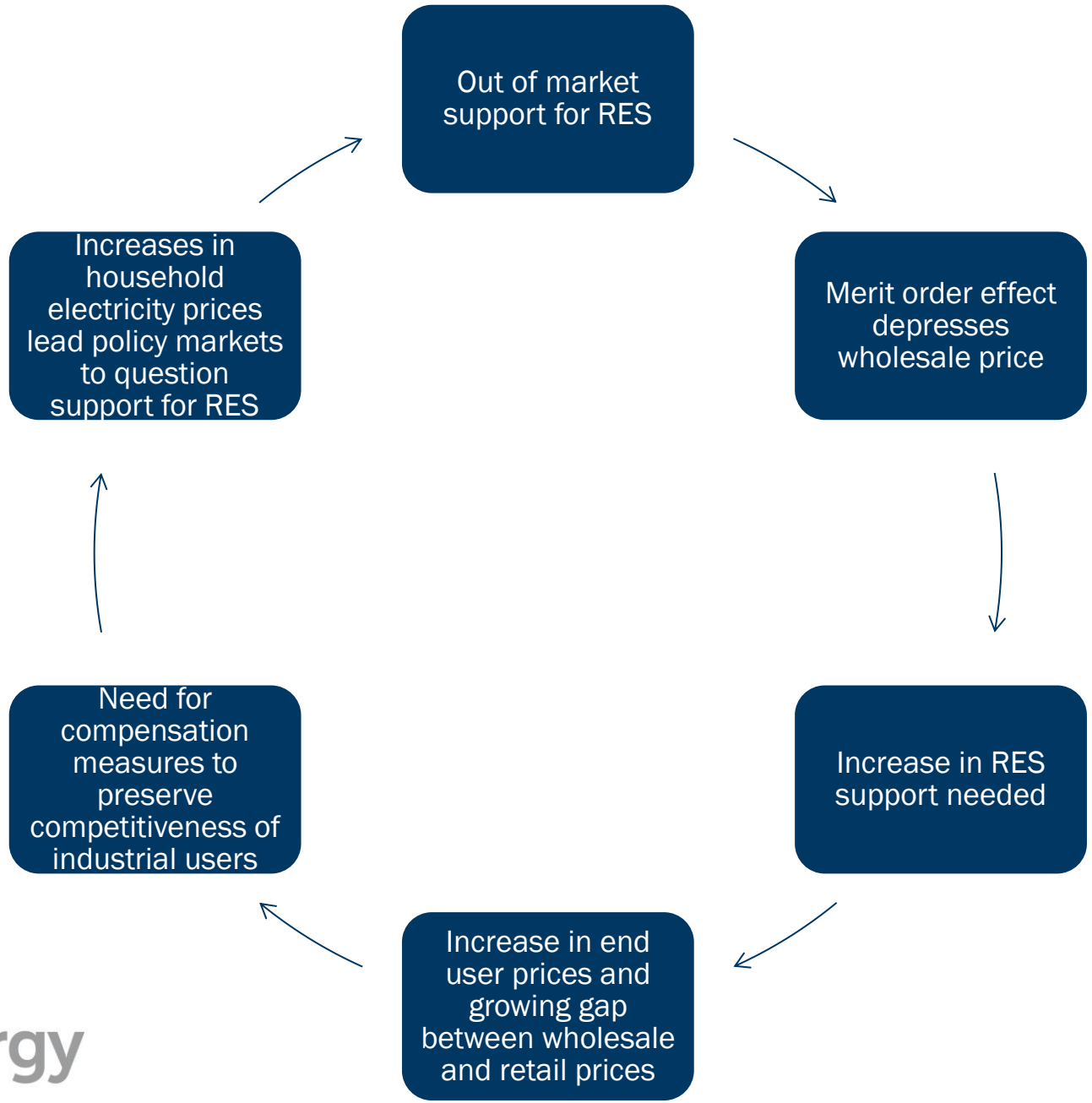
- Green energy surcharges: Large electro intensive industrials pay €0.5/MWh instead of €62/MWh
- CHP support tax: The support scheme of €1.26/MWh (in 2013) can be reduced to €0.5/MWh beyond 100 GWh of consumption
- Offshore-Haftungsumlage (offshore support scheme): the €2.5/MWh tax can be lowered to €0.25/MWh if electricity cost exceeds 4% of sales.
- Local taxes: Their amount depend on each locality and can often be reduced according to the size of the plant.
- Transport contribution: The contribution created to compensate the industrial grid access exemption is about €3.29/MWh (in 2013) for regular consumer vs €0.25/MWh for electro intensive industrial
- Electricity tax: In 2013, electro intensive industrials have paid a reduced electricity tax of €1.54/MWh instead of the regular rate (€20.5/MWh)

Most countries offer tax exemptions or reductions for energy intensive industries

Country	Tax exemption	Figures
Germany	▪ Energy intensive industries are shielded from green energy surcharges ▪ The taxation rate on electricity consumption is lower for EIIs. ▪ Under the electricity tax law of 1999, most of EIIs are qualify for a complete reimbursement of energy taxes.	▪ German plants paid about 5% of the full RES-levy size
United Kingdom	▪ EIIs are exempted from 80% of the Climate Change Levy (energy consumption based tax)	▪ EIIs would pay GBP 1.018/MWh instead of GBP 5.09/MWh for a regular industrial consumer
Denmark	▪ Under the Green Tax Package scheme, EIIs are completely exempt from energy taxes ▪ EIIs are almost totally exempt from carbon taxes	▪ EIIs which participate in Voluntary Agreements and commit them to energy efficiency are eligible for a 100% energy tax exemption and a rebate of 97% on carbon tax
France	▪ Reduced rate of public electricity service charge for EIIs (moreover CSPE is capped for companies using more than 7GWh) ▪ Exemption of local electricity consumption tax	▪ EIIs are completely exempt from local electricity consumption tax (TCFE)
The Netherlands	▪ Taxes on natural gas and electricity consumption are based on the amount of use. The rates decrease with increased use. ▪ Business use of electricity greater than 10 GWh/y is exempted if the consumer has agreed to improving energy efficiency	▪ According to OECD, industrial are taxed in average €0.006/kWh vs €0.113/kWh for residential
Belgium	▪ Tax on electricity consumption and fuels used	▪ EIIs with an environmental agreement are entitled to a 100% exemption of both taxes

Conclusions

How can we breaking the vicious cycle?



Conclusions

- On average, EU household electricity prices increased by more than 4% a year between 2008 and 2012, and EU industrial electricity by 3,5%.
- Increases in taxes – particularly levies to finance RES deployment – and in network costs represent the bulk of the increase, as energy costs remained stable or decreased over 2008-2012.
- In France, the CSPE will have increase fivefold in a decade, largely driven by the costs of solar PV feed in tariffs. This remains small compared to Germany, where the EEG contribution represents up to 18% of the residential users bill.
- Despite some caps for the largest industrials, the contribution to finance the CSPE in France remains more evenly spread among consumers than in Germany, where residential user bear most of the burden.
- The depressive effect of RES on wholesale prices benefits the German industry, which is largely exempt from the EEG cost. Whilst low industrial power prices used to be a competitive advantage for the French industry, many industrials are today at a competitive disadvantage compared to their German counterparts.
- This raises a fundamental question: who should pay for the energy transition: residential users, all electricity users, and / or tax payers?

Merci pour votre attention

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