

Design and impact of a harmonised policy for renewable electricity in Europe



Interacting aspects and policy design considerations for burden sharing agreements and future exemptions of EU energy intensive industries

Final Conference
Brussels, 21.10.2013
Residence Palace



Institute for Resource Efficiency
and Energy Strategies

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The main argument for a reduced or a total exemption for energy intensive industry, towards financial burden for RES-E development or other schemes, relates to **the disadvantages the increase in electricity costs** will have on the **international competitiveness** of selected industrial branches and industrial processes...

...to ensure that the competitiveness of the EU energy intensive industries is not jeopardized by high energy costs...



Highlight interacting policy aspects and provide an initial analysis on how burden sharing agreements with **energy intensive industries** should be designed in future policy proposals.

1. Indicators used for providing privileges
2. Influencing factors for international competitiveness
3. Relevance of electricity costs for inter. competitiveness
4. Considerations for future policy design

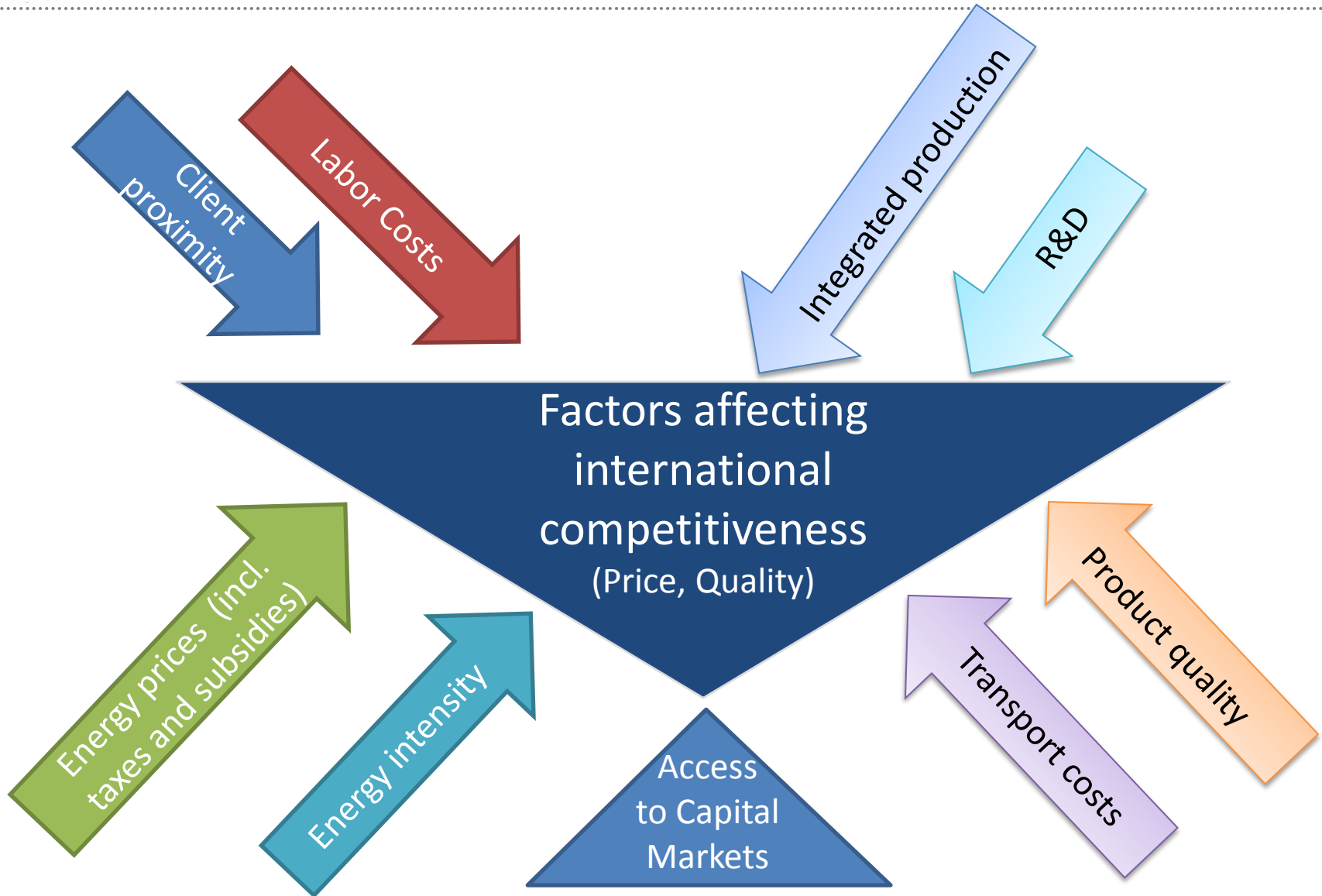


Criteria used for privileges

- Different Criteria/Indicators across the EU MS are used for providing **reduced contributions, (so called “privileges”)** for energy intensive industries for electricity taxes, EE payments, co-generation, etc. These relate to:
 - Total electricity consumption for industrial branches (GWh)
 - Electricity demand intensity (turnover, GVA)
 - The voltage level of the network connection
 - Production process (electricity intensive)
 - The peak load, individual production, energy management systems, etc.

- Not only RES-E aspects are considered but also co-generation contribution, Grid payments, social contributions, etc.

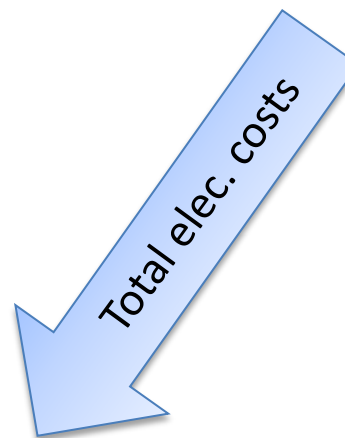
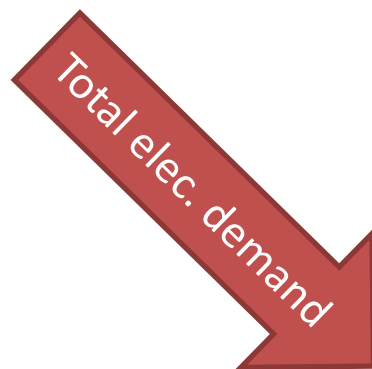




Indicator	Description	Area
Market share (Production or Revenue)	Shows the concentration of production	Industry, Sector, National
Absolute output/ Production volume	Shows the absolute Size and Value of an Industry or a Sector	Industry, Sector
Relative Trade Shares	Shows trading structure respectively degree of speciliaziation of a country with help of Import- and Export data	Industry, Sector, National
Trade Intensity Indicator	Ratio of Imports and Exports to the total Revenue of a specific sector gives information of the environment where the sector competitiveness prevails between domestic and non domestic industries	Sector
Global market price for selected products.	The existance of a global market price means that there are industries which have an international participation worldwide. It also indicates the existance of an homogenic product (quality differences play a minor role)	Sector
Scope/Range of the Product Yield on turnover	The range of a product varies, e.g.: Transport costs	Sector
Learning index, learning rates, progress rations	Theoretical value that gives the difference between achieved sale prices and the marginal costs of the production	Industries, Sectors

Dependency of Company on Electricity factor

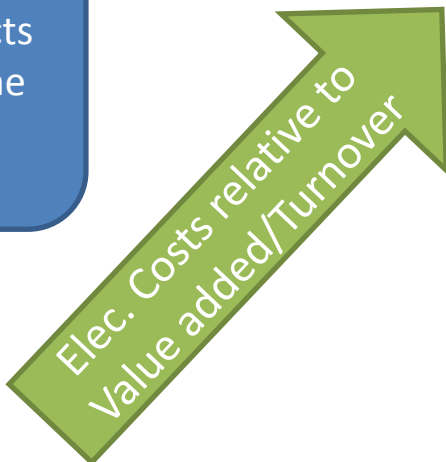
(Sector, Company, Country)



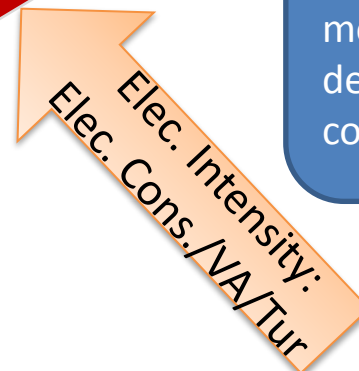
Internat. context:
– Elect. Costs Effect on prod. Factors
– Sector/Company/Country

Indicators to measure Electricity vs. int. competitiveness

Effect of high elec. Prices on products dependent on the elec. cost share



Products with higher Elec. Intensity are more affected by the development of elec. costs



- For **future policy proposals** with the objective of deriving exemptions and privileges for EU energy-intensive industries, **an elaborated set of criteria and indicators are necessary** in order to identify those companies affected by energy or climate policy measures in relationship to their international competitiveness position.
- Initially, indicators such as **the trade intensity or world prices** for selected products appear to lead towards the desired identification, combined with consideration for (among others) **electricity intensities indicators** of the companies or industrial branches due to reduced transaction costs for authorities and reduced manipulation data for companies.
- However, **more in-depth analysis and interaction** is needed, in particular with the impact which this concern with the position of EU energy-intensive industries is likely to have upon other emerging policies such as the **Energy Efficiency Directive**.



- On one hand, there is the objective of **enhancing energy efficiency**; on the other, **exemptions might motivate increased energy consumption**, which result in inconsistency with the desired energy efficiency.
- possible exemptions – e.g. for renewable energy contributions, energy taxes, peak loads, etc. – **should be gradually introduced**. This should be done not only based on the electricity consumption and intensities of branches and their trade intensities, but should be adjusted and complemented with:
 - *(I) the recognition of the implementation by EU energy-intensive industries of **energy consumption monitoring schemes** and programmes, leading towards **identifying profitable energy efficiency potentials**,*
 - *(II) the **implementation of profitable Energy Efficiency Measures** with TIR over **10% and with amortization times over 3-5 years, and***
 - *(III) the **introduction and maintenance of energy management systems**, which have increased the efficiency of production and services.*



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Table: Total support for energy intensive industries (EIIs) in Germany 2010-2013

In millions of euros	2010	2011	2012	2013
Ecotax (Okostuer)	5,740	4,730	5,110	d/k
CHP bonus allocation	40	4	20	d/k
Special compensation rule, section 40 ff. of the German Renewable Energies Act (EEG)	1,125	2,080	2,315	2,500-3,200
Certificate allocation	1,643	1,408	1,408	d/k
Energy & climate funds	-	-	-	500
Network fee exemption	43	d/k	319	d/k
Industry levy	-	-	12	d/k
Total relief	8,591	8,223	9,185	d/k

Immunities of the energy-intensive industries in Germany from energy taxes, March 2012:
www.arepo-consult.com



Factor	UK	Germany
Amount of compensation	£210m over 3 years, £70m pa	8bn euros annual average
Time period	2013-2015	Not time limited
Sectors	15 of European Commission's sectors at risk from carbon leakage, based on trade intensity and cost impacts.	Wide range of industrial sectors under section 40 special compensation: no apparent sector limit.
Level	Company	Company and process level: for example, about 1,000 firms in certain processes, such as metal fabrication, are exempt from electricity tax.
Number of companies benefitting	Figure not available	97,000 cos benefit from the "general discharge". 23,000 cos compensated for peak power. 1,000 firms 100% exempt from electricity tax.
Energy intensity	Company carbon costs (CPF and ETS) in 2020 = at least 5% GVA	Electricity consumption of more than 10 GWh per delivery point (subject to 10% cost share); and electricity costs of more than 15% of GVA added. Companies >100 GWh electricity and electricity costs > 20% GVA exempted from cost sharing.
Maximum compensation per eligible installation	Linked to UK marginal emissions factor: gas emissions at 0.411tCO ₂ /MWh	Information not available
Exemption from energy taxation of mineralogical processes	None	Exemption for mineralogical transformation processes (applies to ceramics, cement, lime, glass), for example, €5.50 / MWh on gas.

