

Zeitschrift: bulletin.ch / Electrosuisse
Herausgeber: Electrosuisse
Band: 97 (2006)
Heft: 4

Artikel: Electricity Markets : getting the picture straight and boosting market integration
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DOI: <https://doi.org/10.5169/seals-857654>

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Electricity Markets: Getting the Picture Straight and Boosting Market Integration

As the debate re-opens, both within the EU legislative institutions and among stakeholders, on the functioning of the liberalised European market, Eurelectric believes this is a timely moment to look at the benefits accruing from the liberalisation of the electricity markets and place market developments in a wider perspective with greater emphasis on the overall picture, notably price developments. The purpose of this paper is therefore to look at price evolution in the light of a recently-published report drawn up by KEMA on behalf of Eurelectric and also to highlight our industry's vision on further market developments and towards increasing confidence in the electricity market.

The reality of the liberalisation process: electricity markets have delivered lower prices

Price reductions

In order to assess price developments properly, one has to look back to the start of the liberalisation process, i.e. to about ten years ago. Eurostat figures for electricity end-user prices up to 2004 show a significant decrease in real terms compared to 1995 for both industrial and residential customers. In real terms, the price decrease for industrial customers on an aggregated European basis is over 15% and a similar decrease can be observed for household customers.

Looking solely at price increases since 2000 therefore creates a biased picture by taking as a reference point the lowest price levels – levels considered by industry observers to be unsustainable and insufficient to trigger new investment. This argument must be put further into context. It is clear that the actual decreases in end-user prices would have been much

more pronounced if it had not been for the significant rises both in taxes, levies and surcharges and in the price of fuels over the same period of time (see graphs).

Member states' policies in the fields of energy and environment (including promotion of renewable energy sources, CHP and energy efficiency, reduction of greenhouse gas emissions, etc.) have added extra costs to end-user prices which have to a significant extent offset the benefits of competition to electricity customers. While the aims of these policies are laudable, it is too often the case that the consequent burden borne by end-customers is simply overlooked, which leads to a partial and erroneous interpretation of price evolution. Looking only at the share of taxes which is directly imputable

to end-user prices, we see that this now represents on a European average 11.5% of industrial prices compared to 4.2% in 1995. The share is also significant for residential customers with 24% taxes compared to 18.5% in 1995. Given that this figure does not include charges levied on power generation and/or networks, the actual share is likely to be even higher.

The rise in coal, oil and – linked to oil – gas prices has also impacted considerably on electricity prices in recent years. Coal, oil and gas account for approximately 51% of the European power generation mix and these fuel costs have dramatically increased (see figure for oil and coal).

Large productivity gains and progress beyond the expected

Liberalisation, which has placed competitive pressure upon companies to reduce costs and improve efficiency, has brought about significant productivity gains that are far above the European average and have benefitted the entire EU economy. A study by the European Commission's Directorate-General for Enterprise shows labour productivity growth of 5.7% for electricity, gas and water supply in 1995–2001, compared to an average figure of 1.7% for the EU-15 economy as a whole.

Beyond this, it must be recognised that significant progress has been achieved in liberalising Europe's electricity markets.

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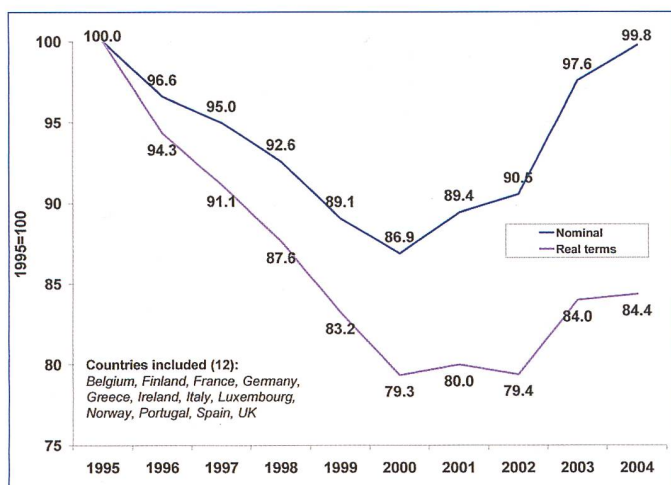
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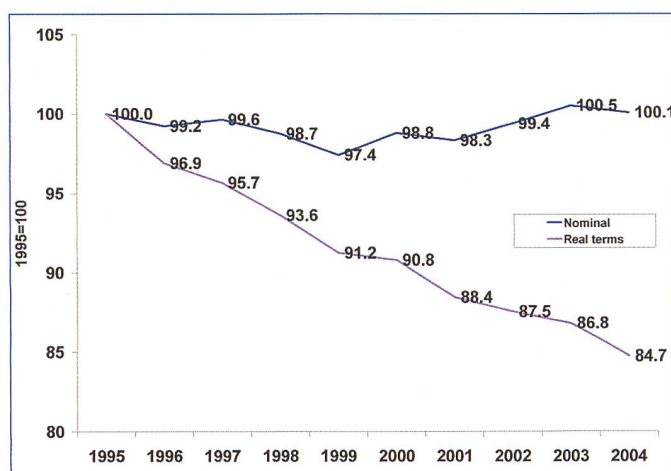
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Have electricity markets delivered lower prices? (photo EU)



1 Evolution of end-user prices for industrial users (24 GWh, 1995 – 2004) – KEMA report. Prices exclude VAT; weighted average; prices in real terms based on the inflation for the EU-15; the following countries have been considered: Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Norway, Portugal, Spain, UK.



2 Evolution of end-user prices for households in the EU-15 (3500 kWh, 1995 – 2004). Prices include VAT based on EUROSTAT indicator; prices in real terms based on the inflation for the EU-15.

and also likely to be deemed to constitute state aid. With the introduction of competition in the electricity sector and the convergence of wholesale electricity prices, cross-subsidised prices are therefore no longer sustainable. The regulated prices that are still being offered to large industrial customers in some countries should, by the same logic, no longer exist in a liberalised market. Wholesale electricity prices are now market prices. They are determined by a multitude of physical conditions such as weather, hydrology, outages, fuel costs and the impact of environmental constraints, for example emissions trading, and by market factors such as the demand-supply curve and investment needs. The European electricity industry is facing huge investment needs, estimated by the IEA at around 1000 billion Euro by the year 2030. With price levels for end-users equivalent to the prices in 2000 these necessary investments simply could not take place.

Emissions trading is designed to give a market signal

The European emissions trading scheme (EU ETS) was designed as a market-based approach to contributing to the European Union's commitments under the Kyoto Protocol. As such, it is intended, by incorporating the cost of carbon into the cost of products covered by the scheme, to give a signal to move to lower-carbon products. Compared to other approaches such as taxes or command and control measures, emissions trading is considered to be the most cost-effective method of reducing emissions. (Eurelectric report «The Impact of Emissions Trading on Electricity Prices»).

It must be recognised that the electricity industry is the only one, under the first National Allocation Plans (NAPs), that is being asked to make significant reductions in its CO₂ emissions (about 10% or 300 million tonnes over the period 2005–2007). Given that in the time span of the first Allocation period, it is not possible to make significant investments, electricity companies must cover their “short” by making different use of their existing fleet and by use of the emissions market. The increases in gas prices, which have been driving wholesale electricity prices in recent years (pre-dating the introduction of EU ETS) have had a contributory effect on EU Allowance prices as coal burn has become more attractive. Equally, weather can also impact on the demand for carbon-intensive power generation as, for example, in Spain where hydro production this year has been 40% below last year's level. In short, there

Transmission and distribution network access (the principles for access to electricity grids now being the most advanced and market-oriented in the world), unbundling, creation of power exchanges and large trading-platforms with opportunities for hedging, wholesale price convergence, market mechanisms for congestion management, transformation of national players into international companies, market opening and customer choice have progressed at a speed beyond what most observers could have foreseen at the beginning of the liberalisation process.

Europe is generally considered to be the region of the world where the introduction and implementation of electricity liberalisation has been the most suc-

cessful, with steady progress and avoiding the crises observed in some other parts of the world.

Electricity prices are now market prices

Before market liberalisation, electricity prices were regulated and formed on a cost-plus basis. Under these regimes, many industrial customers enjoyed cross-subsidised prices, as electricity prices were used by many governments as a tool of industrial policy. Cross-subsidisation is not only incompatible with the competitive markets as it create inefficiencies and welfare losses, but is moreover clearly outlawed under the Electricity Directive

	EU-15			US		
	79–90	90–95	95–01	79–90	90–95	95–01
Total economy	2.2	2.3	1.7	1.4	1.1	2.3
Electricity, gas & water supply	2.7	3.6	5.7	1.1	1.8	0.1

Table I Labour productivity growth (%/a).

Source: DG Enterprise publication, “EU productivity and competitiveness: an industry perspective. Can Europe resume the catching up process?”

exist a number of price-drivers in the electricity market, carbon being only one of them. It must be recognised that, in the long run, electricity prices must be sufficient to cover the cost of investment and to ensure an adequate return on that investment.

The need to maintain momentum

Further progress is needed. The liberalisation process is still in a transition phase and it is vital to maintain the momentum. Within the consultation process launched by the European Commission prior to the publication of its progress report, Eurelectric put forward a plan comprising four recommendations (Eurelectric Position Paper «Contribution to the Commission's consultation on the progress report»).

Ensure full and effective implementation of the liberalisation package

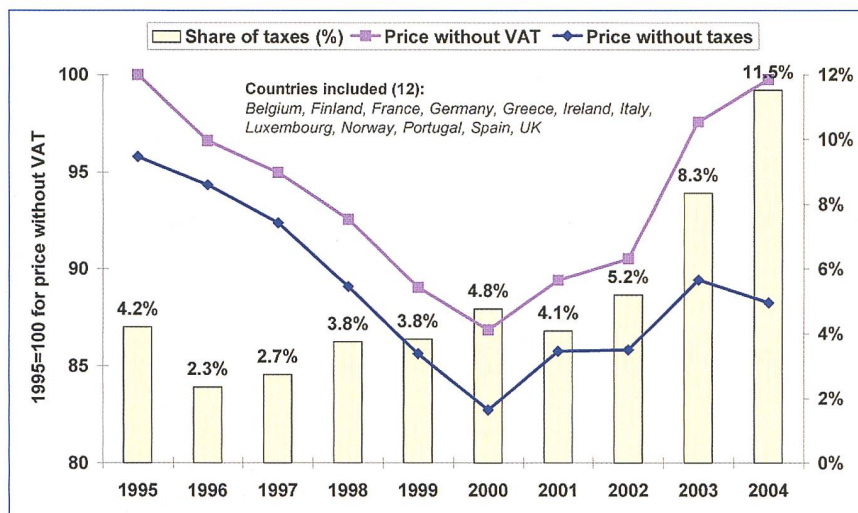
If properly implemented, the Electricity Directive together with the Regulation on cross-border trade will provide a sufficient regulatory framework to allow further market integration. This prospect may be undermined by delayed or incorrect transposition of the package and it is therefore vital that Member States do their utmost to ensure swift implementation.

Create a culture of unbundling

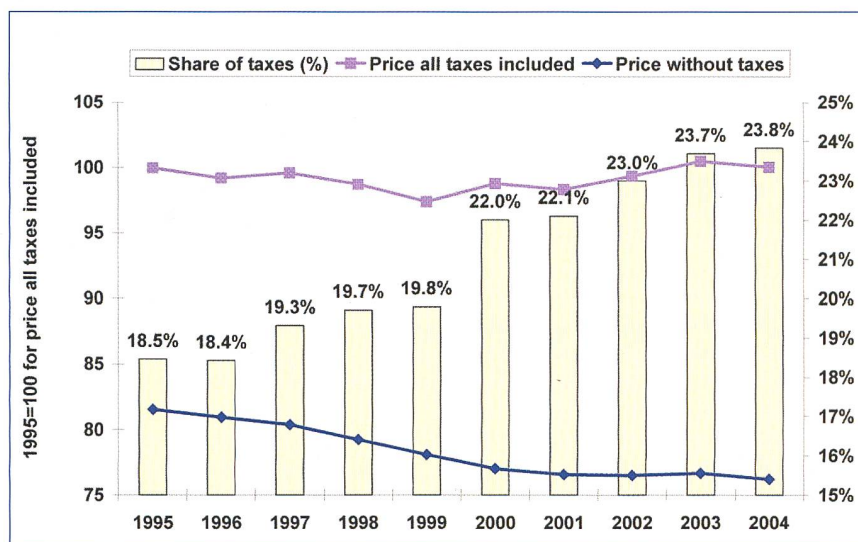
Non-discriminatory access to the network is a key requirement for a properly functioning market. Eurelectric is committed to the smooth and effective implementation of this provision and has highlighted a way to develop a «culture» of unbundling. In a recommendations paper (Eurelectric Position Paper «recommendations on unbundling»), our association has set out in detail how to implement strict unbundling of information and non-discriminatory procurement of services.

Boost market integration: follow the Eurelectric road map

The electricity industry has consistently advocated acceleration of the liberalisation process and the removal of related barriers and our association is determined to play a key role in maintaining momentum and achieving further market-integration. This was the basis on which we drew up our road map towards a pan-European electricity market (Eurelectric Report «Integrating Electricity Markets through Wholesale Markets: Eurelectric Road Map to a Pan-European Market»),



3 Evolution of prices and share of taxes (excl. VAT) for industrial users (24 GWh, 1995-2004). Based on weighted average; absolute values shown in nominal terms based on EUROSTAT.



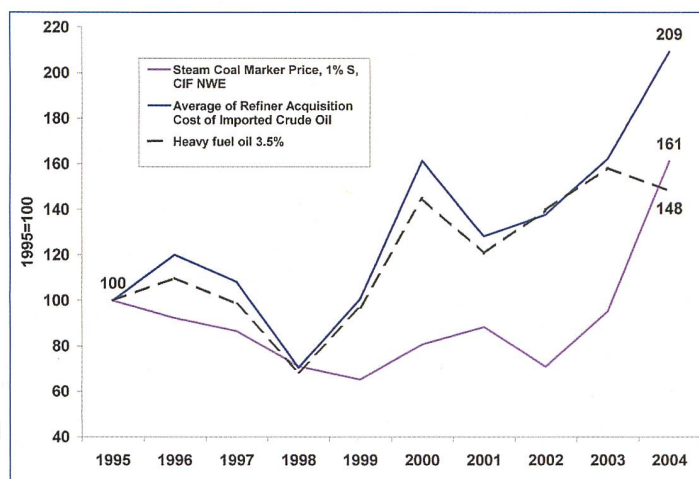
4 Evolution of prices and share of taxes (incl. VAT) for households (3500 kWh, 1995-2004).

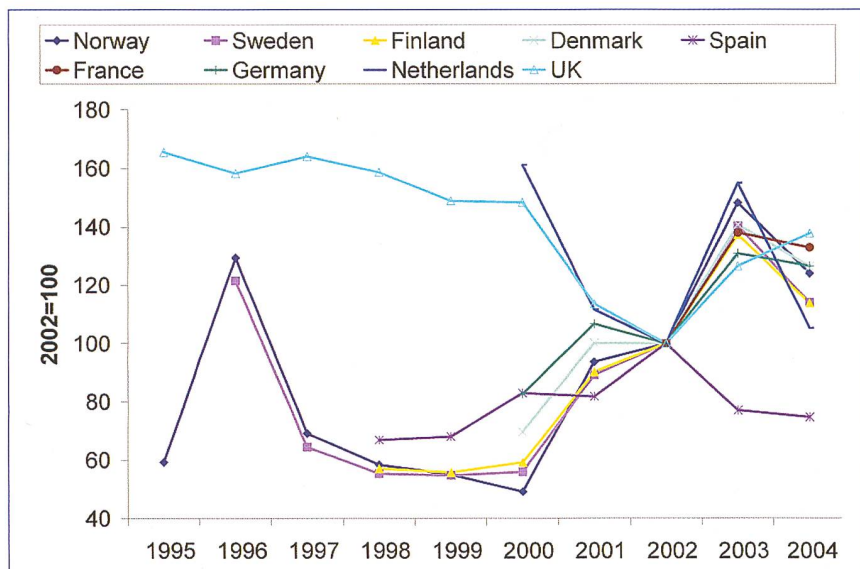
which was presented at the European Regulatory Forum (Florence Forum) on 1-2 September 2005.

This blueprint for an integrated pan-European market envisages stepwise in-

tegration of electricity markets through the establishment of regional markets and the expansion of wholesale markets. This will stimulate liquidity on the trading markets and emphasise the need for com-

5 Evolution of oil and coal prices (1995-2004) based on nominal prices in Euro.





6 Nominal wholesale prices based on national power exchanges (2002 = 100). Prices used are annual simple averages of day-ahead prices. UK prices are based on the pool selling price (PSP) for the period 1995–2000 and the Base load Price Assessment for day-ahead prices from the Heren Report for the period 2001–2004.

mon rules on transparency. This approach will then increase the number of market participants in each regional market and thus alleviate current concerns over market concentration. Ultimately, it will reinforce trust in price formation and in the ability of the markets to deliver. However, in order to succeed, integration of wholesale markets requires a strong commitment from all stakeholders and close co-operation between the various market participants, including electricity companies, TSOs, power exchanges, customers and others, plus the Commission, regulators and governments.

Build trust in market fundamentals and reliance on prices

It is essential that further market developments be accompanied by growing confidence in the functioning of the market. In order to achieve this, Eurelectric has proposed the two following lines of action:

Increase participation from large industrial customers in the wholesale market

There is at the moment still rather low participation by large industrial customers in the wholesale market. It is important that, while a number of trading-platforms are already well-advanced and others are maturing further, those developments are accompanied by greater involvement on the part of intensive energy-users. In this regard, there is a need to raise the awareness among this category of customers regarding the opportunities arising from active participation in wholesale markets and for the hedging of price risks, as is widely practised for other commodities. Creating a better understanding of market fundamentals and overcoming hesitancy over the complexities of trading-places could significantly help to alleviate the perceived distrust and criticism of market functioning. This applies also to the CO₂ emissions-trading market.

Make longer-term contracts and partnership possible

Longer term contracts and partnership should also be given further consideration as a way of diversifying the range of offers already available to electricity customers. The background for this can vary: this approach can be used for example on the basis of joint investment in power generation facilities or simply as a way of procuring electricity on a longer term and more stable basis. It is reasonable to assume that a mix of varying contract terms, as developed by the market on a competitive basis, will help arbitrage between short and longer term supplies.

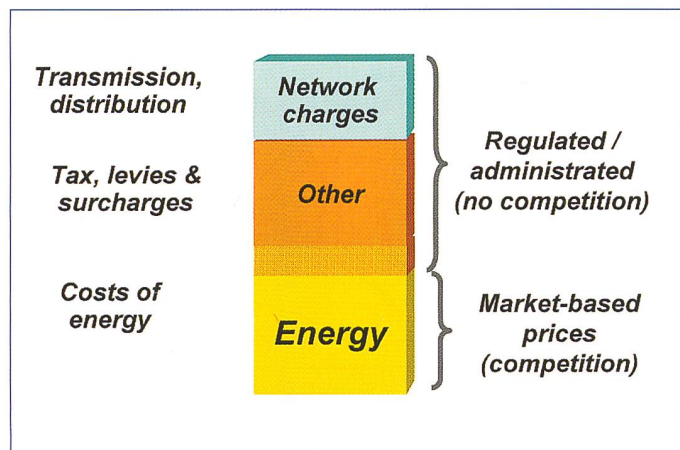
The electricity industry recognises the added value of longer-term contracts since this is a way to reduce the price risks for customers and at the same time reduce the investment risks for generators. These longer-term contracts should develop alongside liquid, transparent wholesale markets and be market-based. In order for such contracts to develop, further consideration should be given to the following:

- Major uncertainties in the system which are difficult to hedge against. For example, developments in the emissions trading regime, in particular allocation levels and methodologies in the EU ETS, plus current instabilities in oil (and consequently gas) and coal prices.
- Legal uncertainties, as these contracts might need to be examined by competition/regulatory authorities, while large electricity companies may also be limited in their actions by the application of competition law.

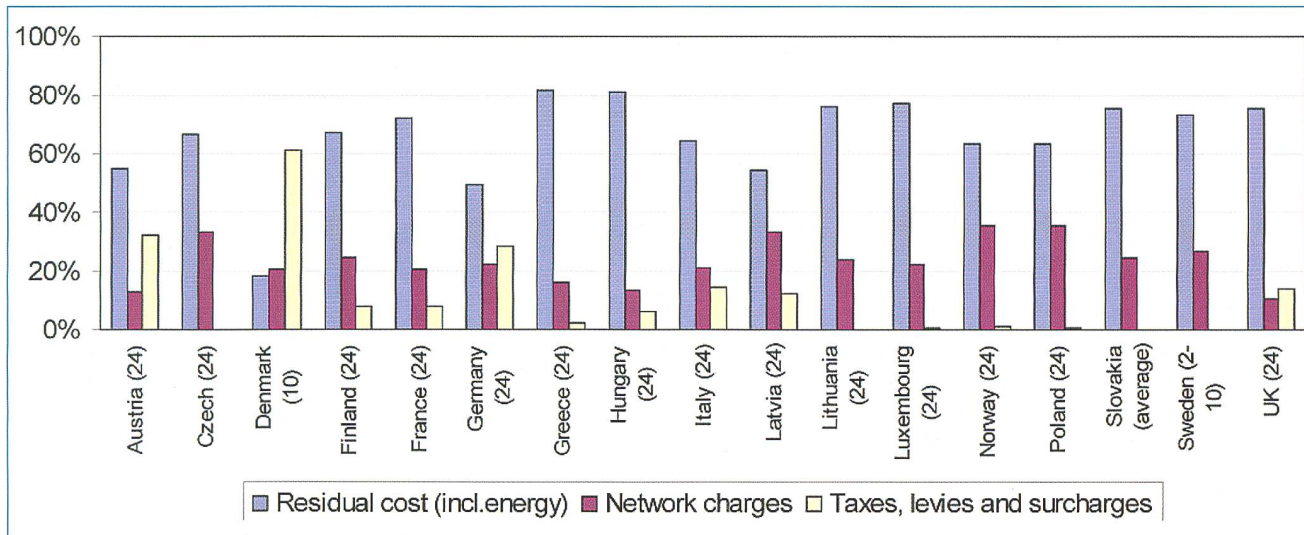
What should be done next?

The debate on electricity end-user prices is unfortunately often obscured by short-term or opportunistic viewpoints. The European electricity industry invites policy makers, opinion makers and customers to mark a distance from these arguments and to address the fundamentals for creating a pan-European electricity market capable of delivering competitive prices to customers, while also ensuring fair compensation of capital to companies so that the necessary investment can be made to ensure inter alia future security of supply. These fundamentals include:

- further market integration on the basis of the Eurelectric road map towards a pan European market, i.e. full and speedy implementation of the existing legislative package, establishment of a culture of unbundling, development of



7 Main components of end-user prices.



8 Share of different price components in industrial end-user prices (last available year; based on national data; levels of consumption are mentioned in brackets [GWh]).

regional markets, expansion of liquid wholesale markets, common rules on market transparency, seamless cooperation among regulators, TSOs and power exchanges;

- greater regulatory stability which is essential for investment-decisions;
- a reversal of the trend towards ever-increasing taxes, charges and levies that weigh on end-user electricity prices;
- growing participation by large industrial customers in the wholesale market as buyers or sellers, in order to rebuild trust and increase the number of market participants;
- creation of the necessary conditions for arbitrage between liquid wholesale markets and competitive longer-term contracts;
- streamlining of authorisation process for building generation plants and transmission lines;
- improve competitive access to primary fuels, in particular oil and natural gas;
- security of supply: keeping all energy options open;
- a world-wide and long-term-oriented approach to climate change and the contribution of all sectors to the reduction of greenhouse gas emissions instead of a unilateral burden on the electricity industry;
- a market-oriented, consistent and least-cost approach to the many policies at the interface of energy and environment;
- realistic objectives and due impact assessments for any forthcoming EU legislation.

Strompreise seit Beginn des Liberalisierungsprozesses

Eurelectric wies in einem jüngsten «Issue Paper» darauf hin, dass die realen Werte für die Preise für grosse Industriekunden seit Beginn des Liberalisierungsprozesses annähernd um 15% gesunken sind. Für die jüngsten Preisanstiege sind neben dem Einfluss der Emissionszertifikate weitere Faktoren wie die gestiegenen Brennstoffpreise, Steigerungen bei Steuern, Abgaben und Zuschlägen sowie zusätzliche Umweltvorschriften verantwortlich. Die Angaben zu den Preisen beruhen auf einer von dem Beratungsunternehmen KEMA durchgeführten Studie «Review of European electricity prices since 1995». Zur Herstellung des Vertrauens in den Markt schlägt Eurelectric die Entwicklung einer nachfrageseitigen Beteiligung am Grosshandelsmarkt und beim Emissionshandel vor.

Baisse moyenne de prix de quelque 15%

Depuis les premiers pas de la libéralisation il y a dix ans environ, les consommateurs d'électricité européens ont constaté une baisse moyenne de prix de quelque 15% en termes réels. Par ailleurs, les récentes augmentations de prix sont le résultat du fonctionnement normal du marché, sur lequel de nombreux facteurs, notamment les fortes hausses des prix du pétrole, les signaux envoyés par le marché du commerce des émissions, associés à l'augmentation des charges imposées par le gouvernement, jouent un rôle dans la formation des prix. Ces constats sont mis en exergue par un nouveau rapport, élaboré par les consultants KEMA au nom d'Eurelectric, qui dresse un bilan des prix de l'électricité en Europe depuis 1995.



Wie viel brachte den Konsumenten die freie Wahl der Lieferanten im liberalisierten Markt? (Bild EU)



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