Household energy price index for europe

European Residential Energy Price Report 2011

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Introducing the European Residential Energy Price Report 2011

At the end of 2009, to correct for a persistent lack of current, frequently updated and methodologically reliable information on household prices for both electricity and gas at the European level, the Austrian regulator E-Control and VaasaETT developed a methodology that would help monitor residential energy prices. The results, updated monthly, are made available on our respective websites and sent to over 80 subscribers from regulatory or government bodies, utilities, research centres, consultancies and others across the globe. Based on the electricity and natural gas prices collected both for incumbents and competitor companies and taking into account different local consumption patterns, E-Control and VaasaETT compile and publish the Household Energy Price Index (HEPI) as well as a monthly ranking of prices within the EU-15 capital cities[1]. The methodology is designed in such a way that "HEPI prices" reflect prices paid by local typical residential customers and assess overall price developments in Europe. It does so by aggregating the incumbent supplier's standard tariff and the tariffs offered by the main players in each city according to their respective market shares. The HEPI is Europe's only independent comparative monthly index of electricity and gas prices across the EU-15 states. Data is collected directly from utilities and authorities in the respective markets using a thorough, precise and comparative definition and methodology described in more detail at the end of this report.

The *European Residential Energy Price Report 2011* summarizes our findings and tries to shed new light on selected price related issues such as potential savings from switching and the value of lowering electricity consumption from a residential customer's standpoint.

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Subscribe to the free monthly update of the HEPI index for Europe. Get the latest prices delivered automatically to your email. Just send a request indicating your organization and position to Christophe Dromacque at firstname.lastname@vaasaett.com

[1] The former EU-15 comprised Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom.

Highlights

- Residential electricity prices about 4% higher than in January 2009
- Residential gas prices about 8% lower than 2 years ago
- Residential energy prices increased in 2010
- Residential electricity prices far less volatile than residential gas prices
- Electricity retail prices less sensitive to changes in wholesale prices than gas retail prices
- Depending on where a customer lives in Europe, the price that customer has to pay per kWh can vary by as much as 130% for electricity and a staggering 340% for gas
- Market forces represent only half of the end-user price for both gas and electricity whereas national fiscal and regulatory elements are responsible for the other half through distribution tariffs, energy taxes and VAT
- Short term changes in electricity wholesale prices are a poor indicator of changes to come in retail prices
- Retail gas prices tend to follow wholesale prices relatively closely, but with a time lag
- European households could save approximately 9% on their electricity bills and 10% on their natural gas bills by switching supplier. Results show major differences in Europe
- European household could save between €38 and €100 a year if they lowered their energy usage by 10%. Many might think it is insufficient to convince them to change their habits
- There exist a relationship between potential savings and supplier switching levels. However, potential savings alone cannot explain switching levels
- Residential prices set to increase in 2011 as wholesale prices rise, Governments try to secure more revenues, networks are modernized and renewables are further supported

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About the VaasaETT Global Energy Think Tank

The VaasaETT Global Energy Think-Tank is a unique and independent collaborative concept based on the philosophy of mutuality. Through its network of thousands of senior executives, officials, researchers and other experts who are for the most part known and trusted personally, the Think-Tank provides value-to-all by combining an interactive Community and Collaborative Projects. The Think-Tank focuses broadly on practical strategic business and market issues, as well as envisioning state of the art innovations and developments. The VaasaETT Global Energy Think Tank brings together utilities, authorities, universities, NGOs and other players in the energy industry. **More Information at www.vaasaett.com**

The VaasaETT Global Energy Think-Tank offers knowledge sharing through its extensive online knowledge centre, unique data sharing through various projects such as the Household Energy Price Index for Europe and the Utility Customer Switching Research Project, networking integration through its intimate high level events, the VaasaETT Community and world leading round-tables and coalitions such as the Smart Energy Demand Coalition based in Brussels.

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The VaasaETT Global Energy Think-Tank also publishes an array of free reports, on its own or in partnership with other organizations such as Capgemini, and its collaborative projects such as the renowned Respond 2010 smart metering and demand response project, and incorporating the best partner organizations and experts that the world has to offer.

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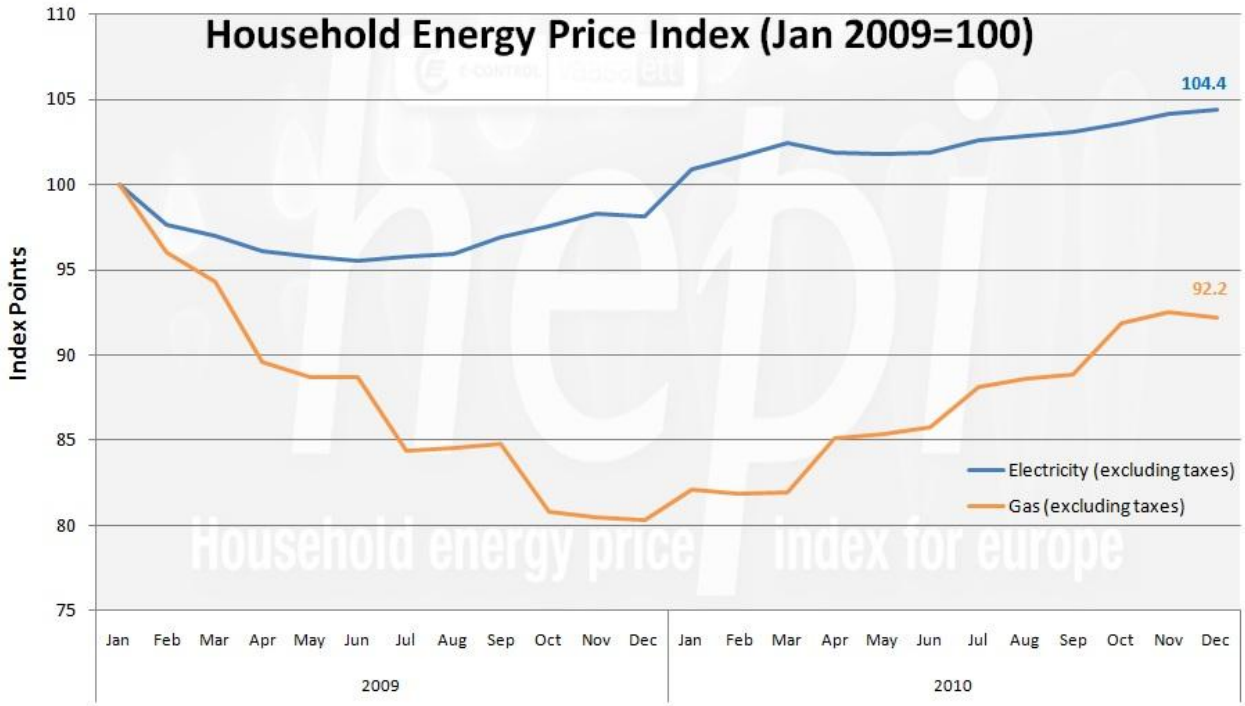
"We are particularly impressed with VaasaETT's in-depth knowledge and understanding of consumer related issues in European energy markets, the degree of professionalism VaasaETT has shown and the attention to detail they demonstrated. …We can highly recommend VaasaETT Global Energy Think Tank."

Walter Boltz, Director General, E-Control (Austrian Energy Regulator)

HEPI index: price developments over the past two years

Figure 1 – Evolution of residential prices excluding taxes in the EU-15 capital cities



Source: E-Control and VaasaETT, 2011

Figure 1 shows the evolution of residential energy prices excluding taxes between January 2009 and December 2010 in 15 European capital cities. In December 2010, electricity prices were about 4.4% higher than in January 2009 whereas gas prices were still about 7.8% lower than 2 years earlier.

Residential electricity prices steadily decreased over the first half of 2009 and reached a trough at 95.6 index points in June 2009. Prices started to recover in H2 2009 together with the first green shoots in economic activity and a general feeling that the worst of the economic crisis was behind us. They have been on an upward trend since then and reached their highest level since the survey started in December 2010 at 104.4 index points. Nonetheless, the graph shows that electricity prices have been largely stable in 2009 and 2010 despite important changes in wholesale prices. The index value remained within a +/- 5% range whereas European wholesale prices dropped by about 40% on average in 2009[2].

[2] Cap Gemini, European Energy Market Observatory, 12th edition, p23, November 2010

The economic downturn which impacted energy demand and wholesale prices in 2009 is much more visible in the development of residential gas prices. The price index dropped significantly in 2009 and reached its lowest value only in December at 80.3 index points (6 months after the electricity price index). Retail prices started to recover in December 2009 – January 2010 when a cold wave hit many parts of Europe. The index steadily increased in 2010 but has not yet attained its January 2009 level. The gas index shows an interesting pattern where retail prices are largely stable for 3 months and are then sharply revised. This stems from the fact that the majority of European household customers are still receiving by-default prices which are revised at the same time in a number of countries (typically quarterly). Electricity prices on the other hand tend to be revised at different times between countries and revisions of by-default prices are more seldom.

Overall, figure 1 shows that residential electricity prices have been a lot less volatile than residential gas prices in 2009 and 2010. It also points to the fact that changes in wholesale prices are passed onto final customers to a lesser extent for electricity than for gas.

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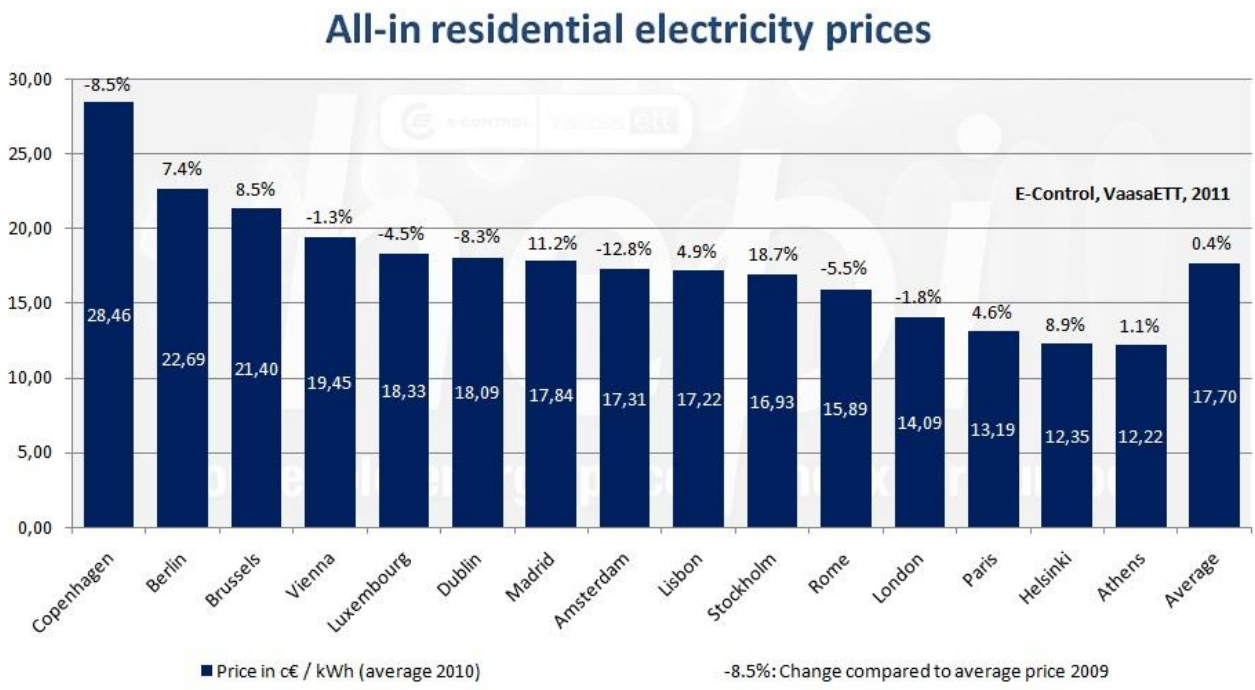
Energy prices in EU-15 Capital cities

Figure 2 : Average residential electricity prices including taxes (2010)



Source: E-Control and VaasaETT, 2011

Figure 2 shows that depending on where a customer lives in Europe, the price that customer has to pay per kWh of electricity can vary by as much as 130%. Household customers in Copenhagen pay by far the highest price within the capital cities of the EU-15 (though 55% is made up of taxes as detailed later), while customers in Athens pay the least. Copenhagen and Berlin were the most expensive cities in both 2009 and 2010. Amsterdam, which was the third most expensive city in 2009, saw all-in prices paid by typical customers decrease by almost 13% in 2010 and is now below the EU-15 average price. The ranking remained unchanged at the bottom of the table with Athens, Helsinki and Paris being the cheapest cities for electricity in both years even though they saw prices increase in 2010.

The stability of average prices in the EU-15 capital cities (+0.4%) between 2009 and 2010 does not reflect some major differences between cities. Indeed, while prices increased by almost 19% in Stockholm, they decreased by 13% in Amsterdam over the same period of time.

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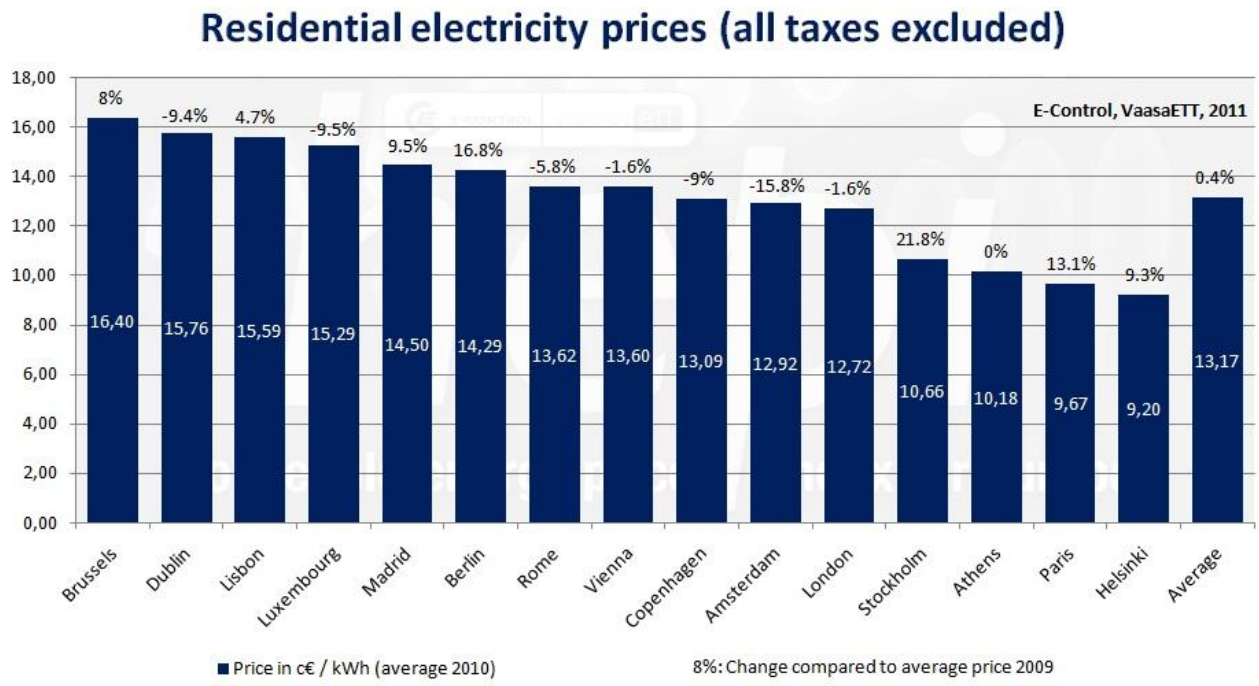
Figure 3 : Average residential electricity prices excluding taxes (2010)

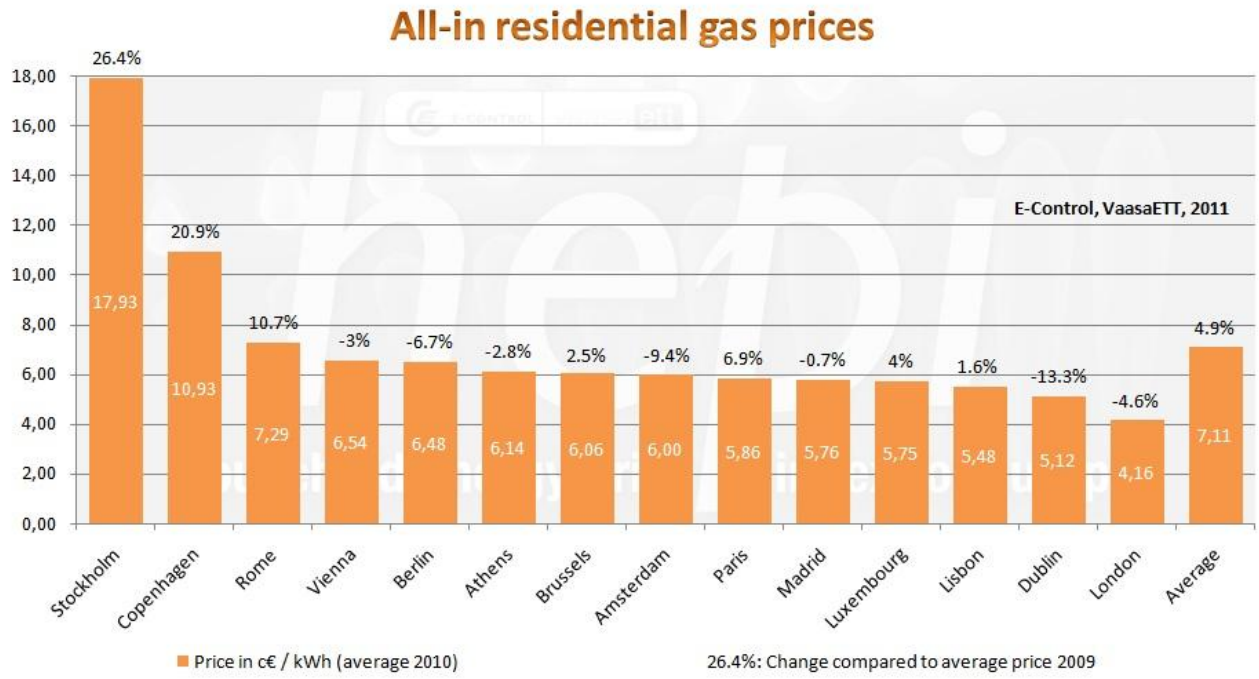


Source: E-Control and VaasaETT, 2011

The picture is quite different when taxes are excluded. Prices in Copenhagen are now below the European average and the city becomes the 7th cheapest for electricity whereas Brussels, Dublin and Lisbon become the most expensive ones. On the other hand, even when taxes are excluded, Helsinki, Paris and Athens remain the cheapest cities for electricity.

Between 2009 and 2010, prices excluding taxes increased the most in Stockholm (+21.8%) and decreased the most in Amsterdam (-15.8%) while the average barely budged (+0.4%).

Figure 4 : Average residential gas prices including taxes (2010)

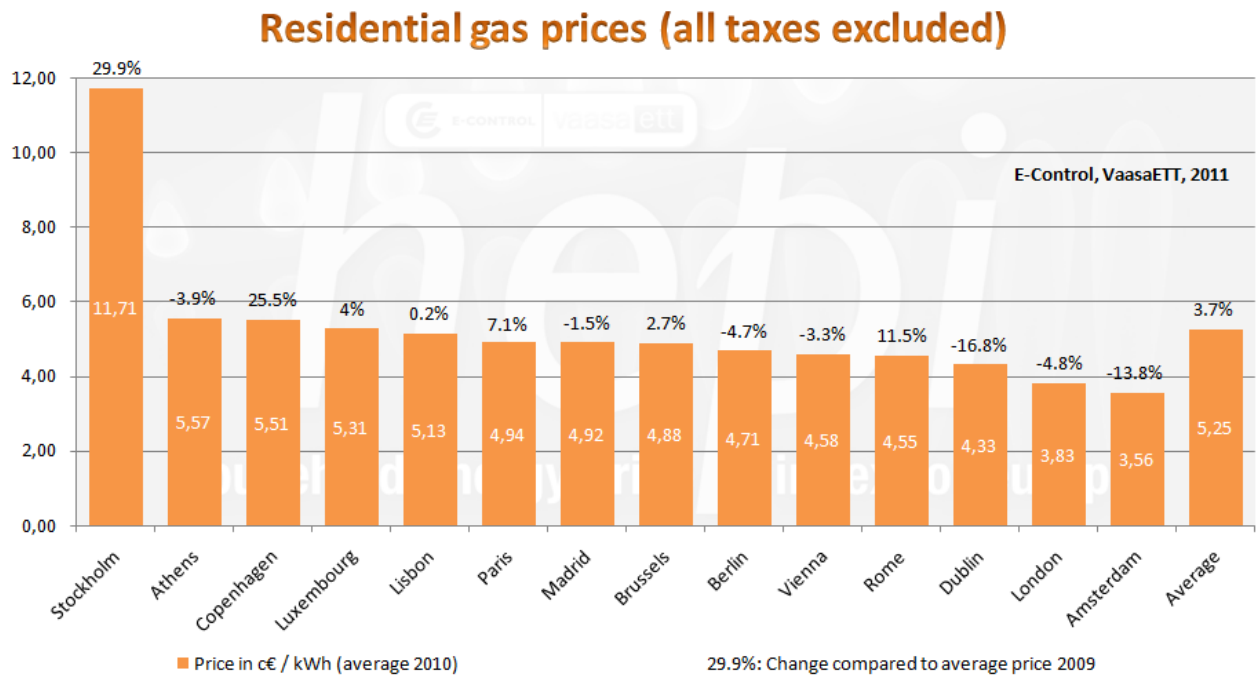


Source: E-Control and VaasaETT, 2011

Figure 4 shows that the price paid by European residential gas customers can vary by a staggering 330% depending on where they live. Natural gas household customers in Stockholm pay by far the most within the capital cities of the EU-15 where end-user prices are about 65% higher than in the second most expensive city Copenhagen and over four times as much as in the British capital city where Londoners enjoy the lowest prices. The incredibly high prices in Stockholm can largely be explained by the limited size of the residential market (there are only about 44,000 gas household customers in the whole of Sweden[3]) and the fact that gas heating is almost inexistent in Sweden. Perhaps unsurprisingly, Stockholm and Copenhagen were the most expensive cities in both 2009 and 2010. These two cities also witnessed the largest price jumps of all surveyed cities, although the weakening Euro over 2010 might have magnified the price increase. Despite regular criticisms of the British energy industry, London was the cheapest city for gas in both 2009 and 2010 and even saw prices decrease in 2010 compared to 2009. Average natural gas prices increased by almost 5% between 2009 and 2010.

[3] The Energy Markets Inspectorate, The Swedish electricity and natural gas markets 2009, June 2010.

Figure 5 : Average residential gas prices excluding taxes (2010)



Source: E-Control and VaasaETT, 2011

The exclusion of taxes leads to a rather different picture. Though Stockholm is still by far the most expensive city, Copenhagen becomes cheaper than Athens and is now not much above the EU-15 average. This points again to the importance of taxes in Danish energy prices. Amsterdam becomes the cheapest city for gas when taxes are excluded while it is in the middle of the ranking when they are included.

Stockholm and Copenhagen saw the highest jump in gas prices excluding taxes of the EU-15 capital cities with an increase of 30% and 25.5% respectively between 2009 and 2010. On the other hand, Dubliners saw the largest price decrease (-17%).

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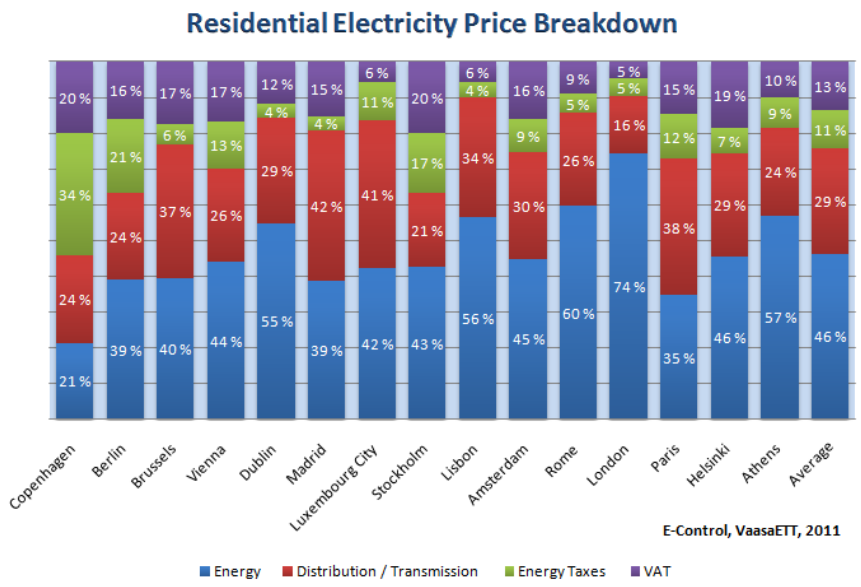
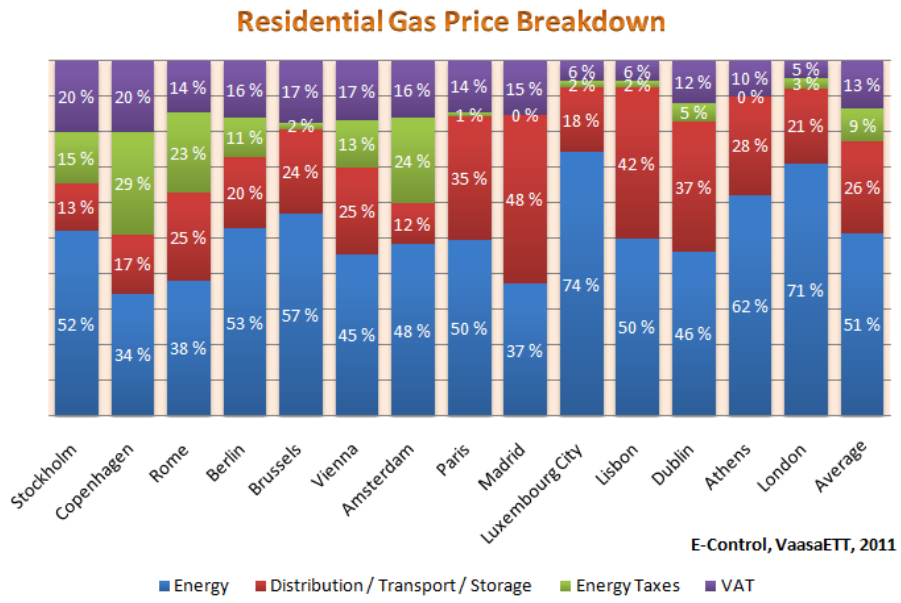
Energy price breakdowns

Figure 6 : Residential electricity price breakdown (as of December 1st, 2010)



The breakdown of end-user electricity prices into four main components (energy, distribution, energy taxes and VAT) shows major variations in Europe. On average, the energy price component (including retail margins) represents a mere 47% of the total cost; distribution 29%; energy taxes 11% and VAT 13%. Copenhagen is a very unusual case; the cost of energy represents just over a fifth of the end-user price, by far the lowest of all surveyed cities, whereas energy taxes represent an astonishing 34% (three times the EU-15 average) and 54% if we include VAT.

Figure 7 : Residential gas price breakdown (as of December 1st, 2010)



As for electricity, the breakdown of end-user gas prices into four main components (energy, distribution, energy taxes and VAT) differs a lot within Europe. On average, the energy price component (including retail margins) represents 51% of the total cost; distribution 26%; energy taxes 9% and VAT 13%. The proportion of taxes in the overall price is extremely high in Copenhagen where energy taxes represent about 30% of the end-user price (over three times the EU-15 average).

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Overall, our survey shows that market forces represent only half of the end-user price for both gas and electricity whereas national fiscal and regulatory elements are responsible for the other half through distribution tariffs, energy taxes and VAT. The electricity component (in blue in the graphs) represents in effect the "switchable" part of the cost or in other words the cost the customer can seek to decrease through switching to a cheaper supplier. The lower the energy price component, the lower the incentive for customers to look for more competitive offers. It also means that retailers can hide relatively high energy prices without much notice.

Study of retail and wholesale prices

Though the correlation between retail electricity prices and power exchanges should go without saying, it is worth remembering that most of Europe's electricity is sourced through bilateral agreements between companies or between generation and retail businesses of what is in effect in the same company (with the notable exception of Swedish suppliers who normally purchase the vast majority of their electricity from NordPool). Furthermore, only a small percentage of residential customers have spot-price-tied contracts. On average, 75% of residential customers still receive by-default prices in the EU-15 countries (rarely revised more than three times a year) and a significant number of customers who have switched chose fixed price contracts thereby reducing retail price volatility. Again, Sweden stands out in the markets we monitor for HEPI since 30% of residential customers have variable contracts[3]. As a result, it is likely that short term changes in wholesale prices are a poor indicator of changes to come in retail prices. Research looking at the Nordic markets showed however that retail prices tend to adjust to long term (year) trends in wholesale prices. The researchers also found evidence that retail prices are adjusted sooner when wholesale prices increase than when they fall[4].

The following graph shows the evolution of retail electricity prices in the EU-15 capital cities compared to day ahead prices on some key European power exchanges for the years 2009 and 2010.

[4] Johnsen, Tor Arnt & Olsen, Ole Jess (2008). The relationship between wholesale and retail electricity prices to households in the Nordic countries.

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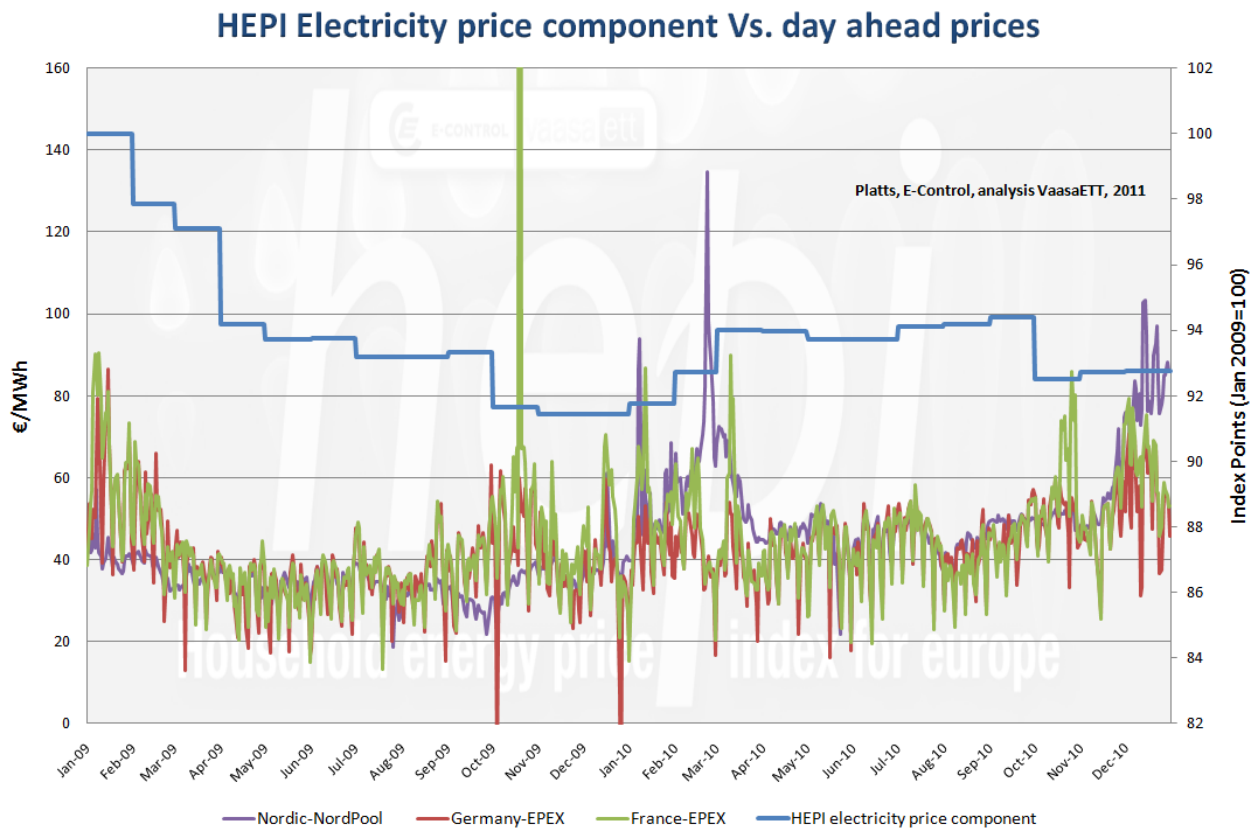
Figure 8 : HEPI electricity prices vs. day ahead electricity prices



Source: Platts, E-Control, analysis VaasaETT, 2011

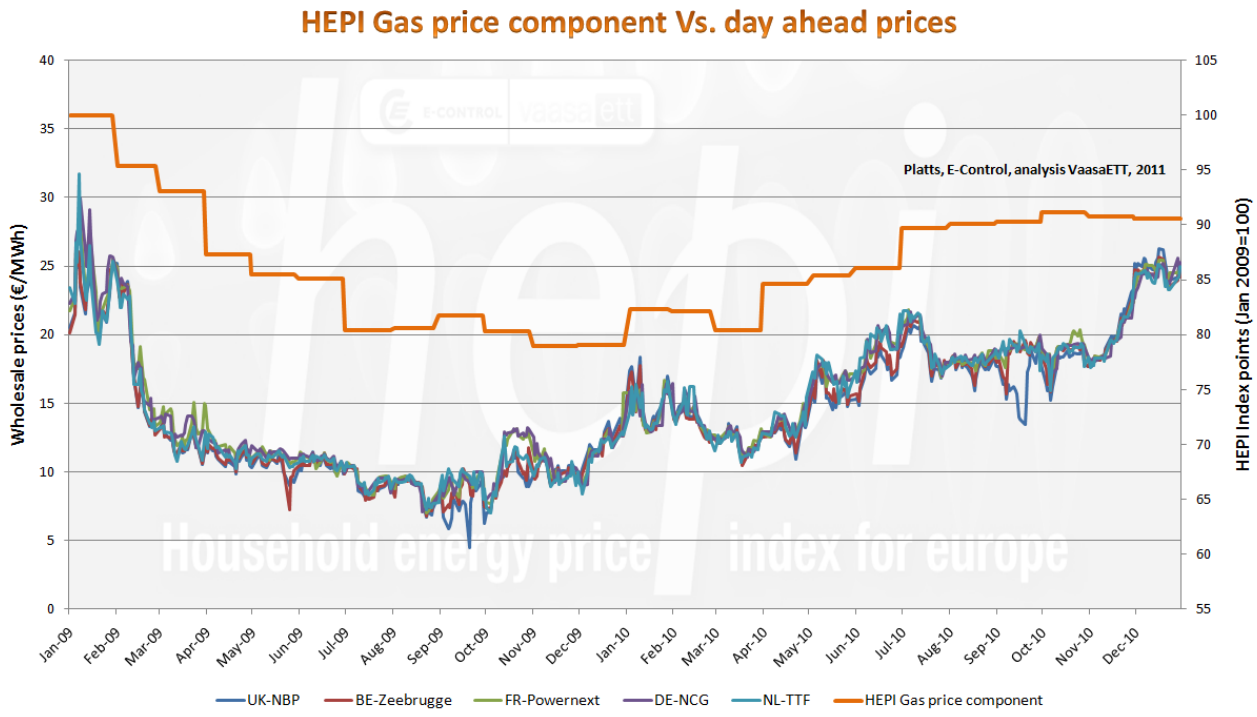
Electricity day ahead prices decreased over the first quarter of 2009 and remained somewhat flat at a low level until the last months of the year. It coincided with deceasing retail electricity prices in Europe though at a milder pace than wholesale prices (from 100 to 92 index points).

The trend changed in early 2010 when wholesale prices started to recover and retail prices stopped decreasing. However, while wholesale prices subsequently decreased and remained flat at a low level during most of 2010, retail prices remained somewhat flat between 92 and 94 index points until the end of the year.

As a storable commodity (largely unlike electricity) with clear cost-origins, retail gas prices tend to follow wholesale prices relatively closely, but with a time lag. This may be due to the fact that the majority of European household customers still receive by-default prices which tend to be revised quarterly and usually include a gas spot price component in the formulae.

The following graph shows the evolution of retail natural gas prices in the EU-15 capital cities compared to day ahead prices on some key European exchanges for the years 2009 and 2010.

Figure 9 : HEPI gas prices vs. day ahead gas prices



Source: Platts, E-Control, analysis VaasaETT, 2011

Gas wholesale prices decreased and remained at historically low levels in 2009. They only started to recover during the icy temperatures of the winter 2009/2010 and have been steadily increasing ever since. It is interesting to see the similarity between price developments in wholesale and in retail markets. Retail prices decreased significantly in 2009 (though not as dramatically as wholesale prices) until the trend changed in December 2009 when retail prices reached their lowest level. Just like on the wholesale market, retail prices have been increasing in 2010. In conclusion, wholesale prices seem to be a good indicator of where retail prices will be heading over the next quarter.

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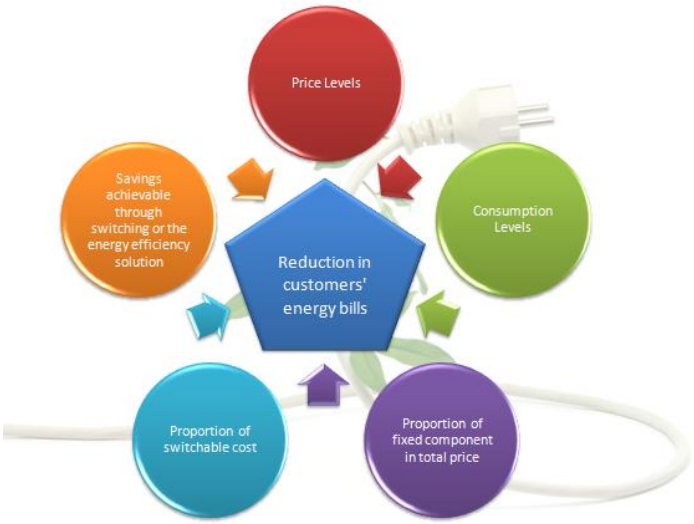
Measuring the value of savings for residential customers

The full opening of many European energy markets to competition and the arrival on the market of energy efficiency electronic devices such as "energy boxes" make it possible for residential customers to lower their energy bills in different ways:

1. Residential customers are able to actively seek better deals and switch to cheaper suppliers;
2. They can also use different devices ranging from "simple" energy boxes to sophisticated home energy management systems which all offer to help customers decrease their energy usage;
3. Customers can combine both of the above possibilities.

The goal of the following two sections is to find out what is the value of switching or of lowering consumption for typical European households.

Figure 10 : Determinants of financial savings on energy bill



From a customer's perspective, the financial savings they can potentially achieve through switching or through lowering their consumption depend on a series of factors. They include:

1. Consumption level: large energy users are able to benefit the most from lowering consumption in absolute terms (in €);

2. Energy price level: assuming the same consumption level, customers in places where energy prices are relatively high are able to benefit the most from lowering consumption in absolute terms (in €);

Factor specific to switching:

3. Proportion of the "switchable" cost: the amount customers can save through switching to a cheaper supplier also depends on the proportion of competitive price in the total price. Figure 6 and 7 show that the electricity or gas components (which can be lowered through switching) represent only about half of the total energy price. Logically, customers in places where the share of the "switchable" cost is higher are deemed to benefit the most from changing supplier.

Factors specific to lowering consumption:

4. Proportion of standing fees: the amount customers can save through lowering their energy usage also depends on the proportion of the annual cost which is not directly related to consumption levels. Typically, European customers pay a capacity-based monthly-fee which does not directly vary according

to consumption. Logically, customers who proportionally pay low standing charges are deemed to benefit the most from lowering energy consumption[5].

5. Energy savings enabled by energy efficiency solutions or technologies: logically, the more electricity usage the solution or the technology helps reduce, the higher the potential financial savings.

6. The cost of the energy efficiency solution or technology: logically, the higher the cost of the solution or technology, the lower the aggregated savings are since a higher share of the financial savings is used to pay for the solution.

Potential savings from Switching

Figures 11 and 12 show the potential annual savings in € (left axis) and in percent of the current annual energy bill (right axis) achievable by typical households who switched from their local by-default contract[6] to the cheapest offer available in December 2010[7]. We assumed that they will remain with the same contract for at least 12 months. The calculations take into account local consumption levels and the proportion of switchable costs. The results show that the EU-15 capital cities' inhabitants could on average save about 9% on their electricity bill and 10% on their natural gas bill. In addition, the results show once again major differences in Europe.

[5] The proportion of standing fees in a typical household's electricity bill varies from 0% to 41% in the EU-15 capital cities.
[6] On average, in each of the EU-15 countries, about 75% households still receive by-default prices
[7] We ignored temporary discounts or rebates in this analysis

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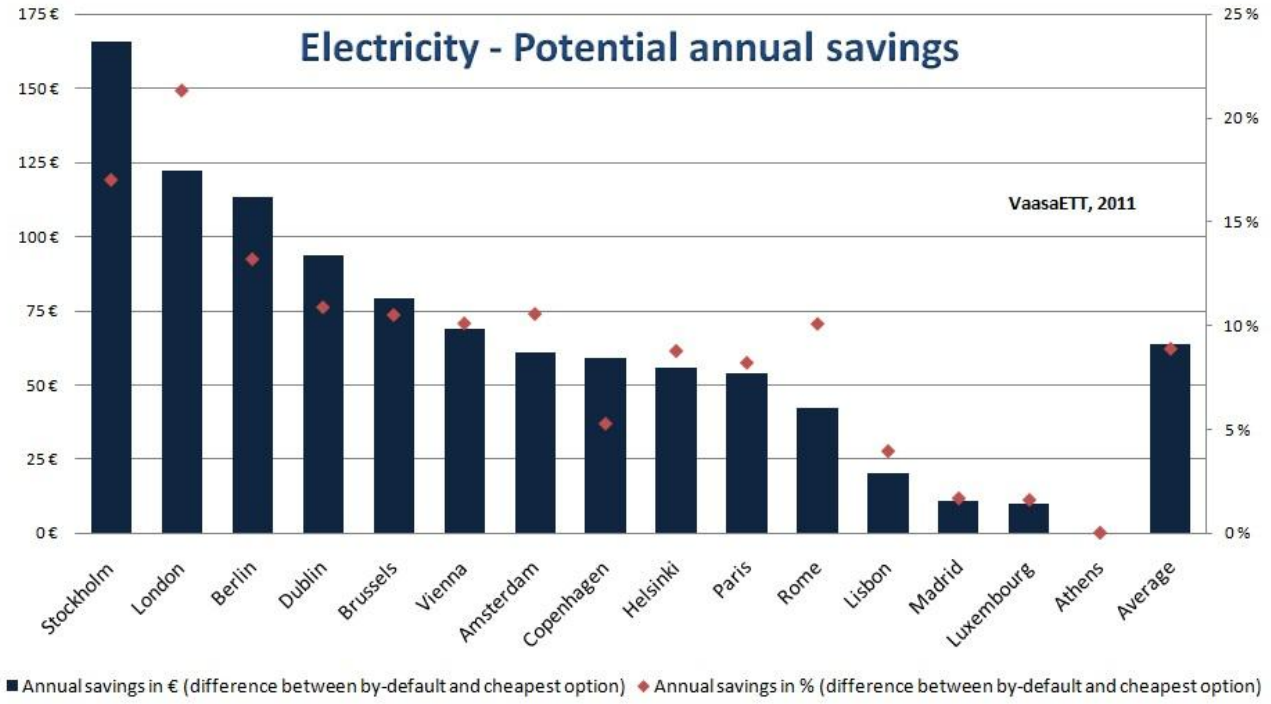
Figure 11 : Potential savings from the by-default to the cheapest electricity contract

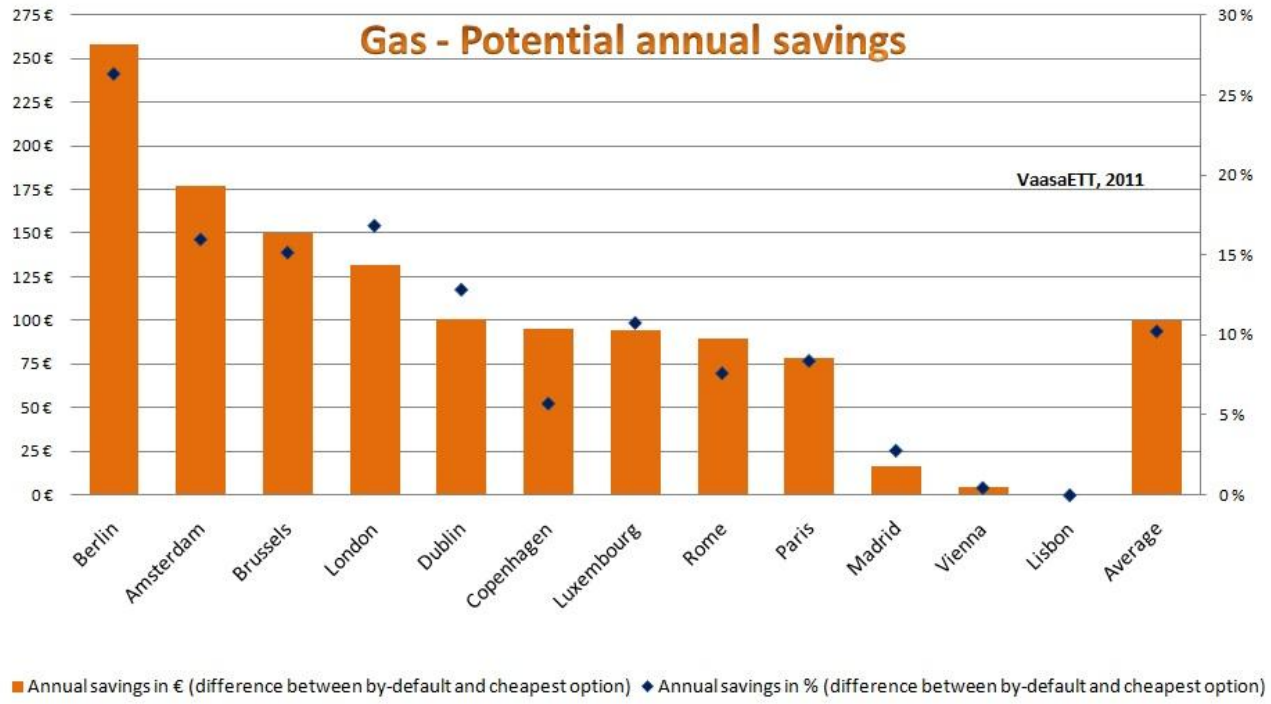


Source: Price comparison websites, companies websites, analysis VaasaETT, 2011

With regards to electricity, inhabitants of Stockholm could save the most in absolute terms (left axis); a typical customer in the Swedish capital city could save €166 per year which is equivalent to 17% of its current annual bill by switching from the standard incumbent to the cheapest offer. Though electricity prices in Stockholm are not among Europe's highest, consumption is typically high and by-default prices are much higher than competitive ones. Londoners who, in addition to having among the lowest prices for electricity, are able to save about 21% on their annual bill (highest percentage in the EU-15 capital cities) by switching from the local by-default contract to the cheapest one. Berliners also have the possibility to realize sizeable savings on their energy bills as the city comes third for potential savings both in Euros and in percent of the current annual bill. Dublin, which comes fourth for potential savings in Euros, is an interesting case. In order to encourage competition in the residential segment, the regulator (CER) sets by-default prices at a high level from which the incumbent is not allowed to discount. The regulation has the effect of allowing for new competitors to enter the market and offer attractive prices while making profits.

On the other hand, the graph shows that the by-default contract is the cheapest option for inhabitants of Athens. In the same vein, inhabitants of Lisbon, Luxembourg and Madrid may feel they have little incentive to actively seek for better deals since the amount they would be able to save seems hardly impelling (between €10 and €20 a year). Prices in these three cities are not especially low as shown by figure 2 but consumption is lower than in most European countries and competitors seem unable to significantly discount the standard incumbent price. Finally in Copenhagen, the fact that the electricity component accounted for only 21% of the total electricity price (see figure 6) is reflected by the fact that household customers can save at best 5% on their annual bill by switching to the cheapest supplier.

Figure 12 : Potential savings from the by-default to the cheapest gas contract



Source: Price comparison websites, companies websites, analysis VaasaETT, 2011

With regards to natural gas, inhabitants of Berlin could save the most both in Euros (€256) and in percent of their current annual bill (26%) if they switched from their local standard incumbent contract to the cheapest option available in December 2010. Inhabitants of Amsterdam and Brussels could save over 15% of their annual bill by switching in December. It is interesting to note that the top three cities for potential savings have prices below the EU-15 capital cities average. As for electricity, even though Londoners enjoyed the EU-15 capital cities' cheapest gas prices, they were still able to enjoy significantly lower prices by switching from their by-default contract to the cheapest option (17%).

To the contrary, inhabitants of Lisbon (where the by-default tariff is the cheapest option), Vienna and Madrid might see little incentive to actively look for better contract terms as far as financial savings are concerned. Athens, Stockholm and Helsinki were left out for this analysis for different reasons. The residential gas market is not open to competition in Athens, there is only one retailer supplying natural gas to household customers in Stockholm and there is no residential gas market in Helsinki.

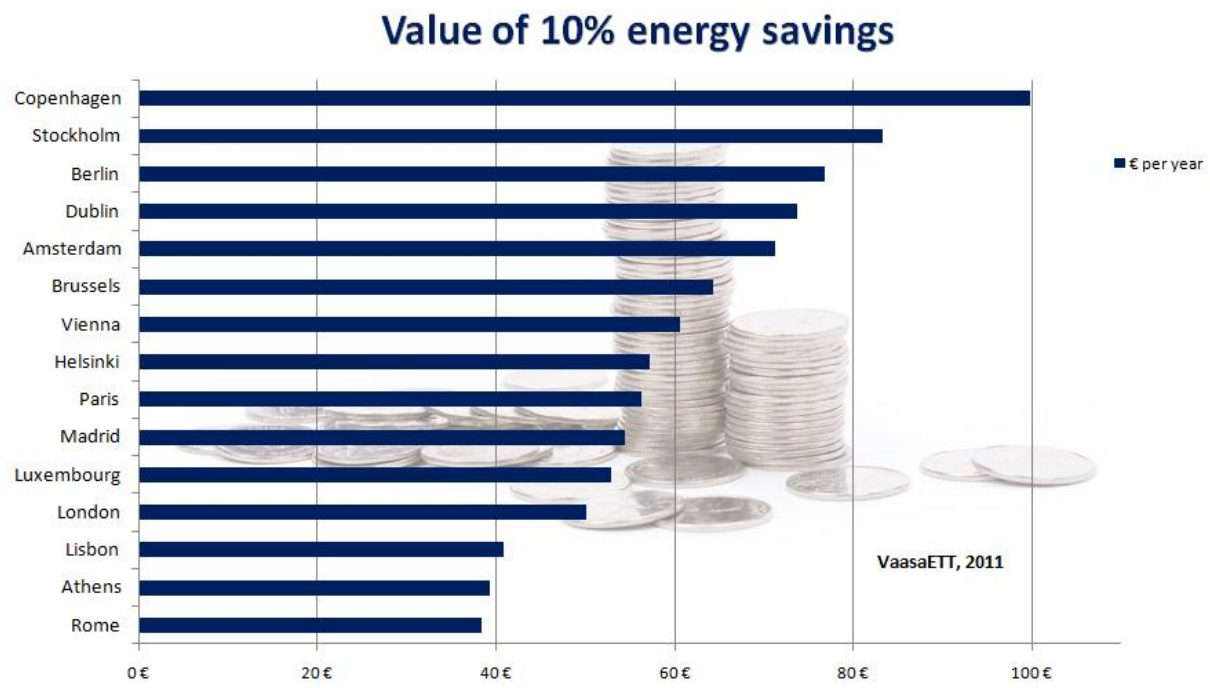
Potential savings from lowering electricity consumption

A vast market is developing around helping customers monitor and ultimately lower their electricity consumption. Consumer electronics vendors, IT companies, web search engines and other companies of all backgrounds and sizes are developing different solutions which range from somewhat basic real time

information displays that can be used with traditional meters to sophisticated home energy management systems. In turn, many retailers in a thin margin industry saw an opportunity to move competition away from prices only to added value services. For example, in France, a market largely dominated by the historical incumbent, Poweo has been offering the "*Poweo box*" since June 2007. In the UK, a number of leading retailers are now offering customers in-home feedback displays to assist them to save energy and therefore money. These offerings are accompanied by energy savings advice, associated tariffs and sometimes the ability to remotely turn off devices. Not only do such offerings help customers to save money in other ways than switching suppliers, potentially avoiding the need to change supplier to ensure a good deal, but they also build a more mutual relationship with the customer. This to some extent may tie in the customers, and may go some way to reversing the negative images associated with the utilities and the energy industry. In the longer-term they may also enable more advanced revenue generating or cost-reducing offerings to the mass market.

The basic idea behind the following analysis is to translate the effect of lowering electricity consumption into financial savings. We conducted the analysis assuming 10% energy savings and the cost of the solution to be zero (i.e. given by the supplier to its customers). Pilot studies have shown that 10% electricity savings can be achieved through decent customer education and well designed real-time feedbacks without having to engage in more expensive home energy management systems or automation. Currently, most energy efficiency solutions freely available to residential customers are of this kind. In a way, the results also help get a feeling of the maximum price households might be willing to pay for such solutions. In economic terms and unless other added services such as security or automation (to cite only the most common ones) are included, there is a trade-off between the additional costs of feedback on the one hand and the savings that can achieved on the other hand.

Figure 13 : Value of lowering electricity consumption by 10%



Source: VaasaETT, 2011

Figure 13 "translates" the value of lowering electricity consumption by 10% for European household customers. The results take into account local consumption levels and the proportion of standing fees in the total electricity price. Indeed, because a proportion of the electricity price is not directly dependant on consumption, using 10% less electricity does not lead to a 10% reduction in a customer's annual bill.

Perhaps not surprisingly given high local electricity prices, typical households in Copenhagen would benefit the most from lowering their consumption (€100 off their annual electricity bill for 10% electricity savings), followed by inhabitants of Stockholm where prices are below the EU-15 average, but consumption is relatively high and the fixed fees represent only 9% of the annual bill and Berlin where prices are high but consumption is low.

Perhaps one of the main conclusions from the graph, which applies to many cities, is that financial savings alone may hardly be enough to motivate typical residential customers to lower their electricity usage let-alone paying for devices that would enable them to. Of course this may be a different story for large users such as individual houses with electric heating for which financial savings would be more significant.

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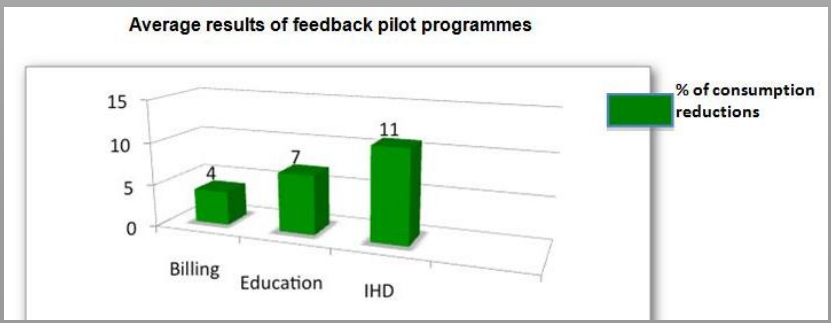
Topic Focus - Feedback Definition and Programs

Abstract from "*Demand Response Pilot Comparison*", VaasaETT, Respond 2010 by J. Stromback, C. Dromacque, D. Golubkina. More information available at: http://www.vaasaett.com/projects/respond2010

Feedback programs aim to help consumers change their behaviour through providing them with feedback / information about the consequences of their actions. This does often lead toward investments in energy efficient household appliances or repairs but because of the difference in emphasis and focus the two will not be viewed as directly interchangeable. Feedback programmes differ from public education programs in that the information given is directly related to that particular consumer's consumption levels, and is repeated over time, enabling the consumer to track and influence their own actions have on the amounts of energy they consume. A feedback program will therefore be defined as a customer oriented, information based program, which provides the consumer with feedback information about their consumption levels and patterns – repeatedly over an extended period of time. The aim of a feedback program is to enable consumers to change their behaviour and lower their energy consumption. Feedback can be included in a DR program and it improves the results of these programmes but the two are not interchangeable as one focuses on shifting consumption to cheaper times and the other on lowering over all consumption. Sarah Darby makes a distinction in her report, written for the British Government, "*The Effectiveness of Feedback on Energy Consumption*" (2006) between *direct* and *indirect feedback.* This distinction will be maintained here, as it is a useful tool for differentiating between what can otherwise become a confusing array of programs.

Indirect feedback is aggregated and arrives at the customers house at certain pre-decided times. Informative billing is an example of indirect feedback. Most residential consumers in Europe now receive estimated bills, which are adjusted for the time of year and the customer's average consumption. They therefore do not accurately reflect the actual usage for a given month. The difference between the estimated average consumption and the actual usage is made up at the end of the billing period or when a resident changes electricity supplier. Informative billing will bill for the actual consumption and provides either historical information comparing what the consumer used this month to last month or to last year during the same period. The bill may also provide information on how much the household consumed in comparison to other dwellings of the same description.

Direct feedback includes communication techniques, which are immediate and directly available to the consumer. This includes in-house displays, websites, or ambient displays. Consumers have continuous *direct* access to these sources. They provide such information as: how much energy is consumed at any given time, and the current cost or savings made. It will sometimes also allow consumers to set personal consumption goals and warn them if they are exceeded. Some feedback displays systems will provide information to the consumer about how much each of their various appliances are consuming individually. This brings the added benefit of security and ease. For example there are systems now through which a consumer can see if they have left their iron plugged in or their stove on, through their mobile phone. If the program includes automation – they will be able to turn these devices on/off or down remotely.



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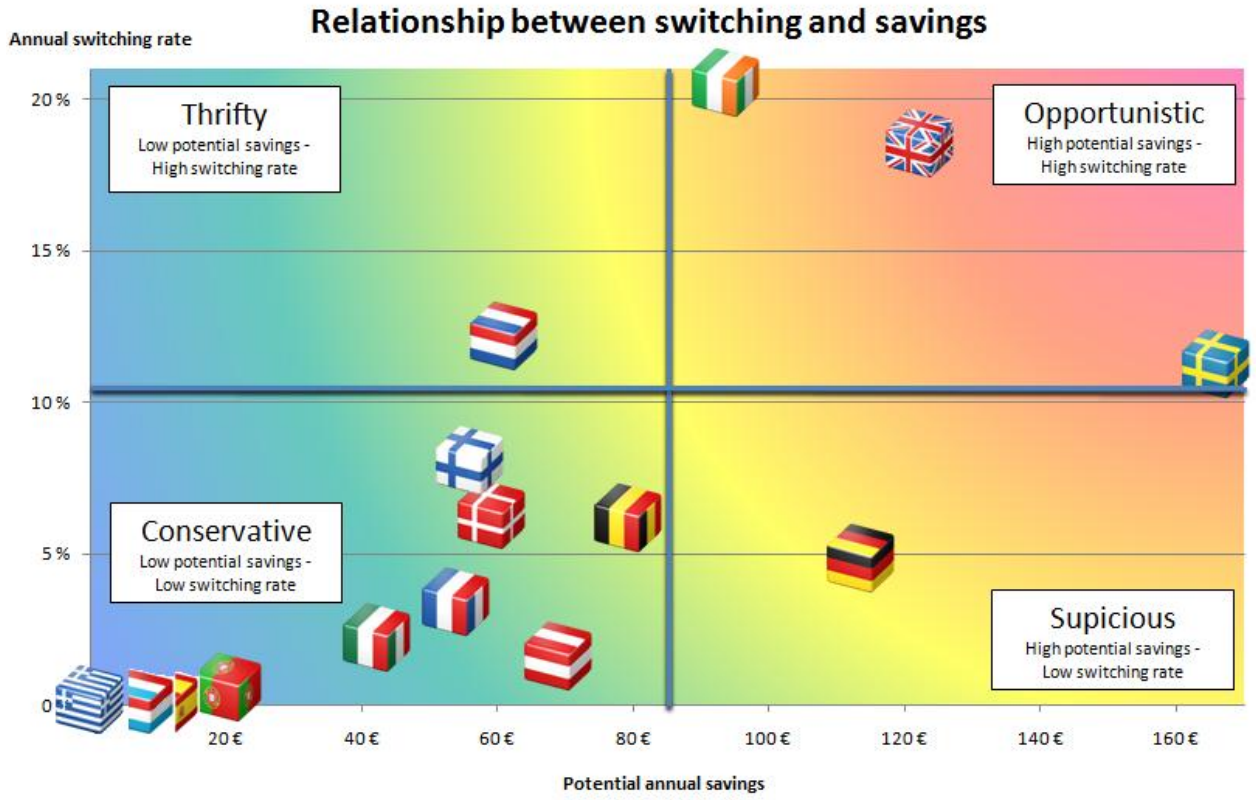
Potential savings and switching levels

Saving money is widely accepted as a key pre-requisite for and determinant of customer switching. However, as the following analysis shows, there is only mixed support to the argument that savings are a key determinant of switching in residential markets. To illustrate this fact, we compared the switching level and the potential annual savings[8] in 15 European countries for the year 2010.

Figure 14 : Relationship between switching rates and potential savings in electricity market



Source: Utility Customer Switching Research Project, price comparison websites, companies' websites, analysis VaasaETT, 2011

As one might expect, the graph seems to indicate that there is a relationship between potential savings and switching levels. However, this relationship seems to work best for extreme cases. For instance countries where potential savings are extremely low also have the lowest switching rates (Greece, Luxembourg, Spain and Portugal) whereas countries with the highest potential savings also have the highest switching rate (Sweden, Great Britain and Ireland). Electricity prices in Luxembourg, Madrid and Lisbon are not especially low (as shown by figure 2) but competitors seem to be unable to offer significant discounts on the standard

[8] Potential savings are defined as savings achievable by switching from the by-default contract to the cheapest available option.

incumbent price that would induce customers into switching. This may partly explain the low switching rates and the very high proportion of customers who have never switched in these markets.

The fact that the switchable cost (i.e. the electricity component) accounted for only 21% of a typical household's bill in Copenhagen in effect smothers any impetus for the end customer to search out better deals or for retailers to offer them resulting in low saving potential (at best 5%) and relatively low switching levels.

However, the correlation is far from perfect with some clear outliers:

- Given Germany's high potential savings, its switching rate *should* be higher
- Given moderate potential savings, Holland's switching rate *should* be lower
- Sweden's switching rate seems *abnormally* low given high savings potential
  And
- Ireland's switching rate seems *abnormally* high given switching potential

Ireland is a very good case in point. The CER (the Irish energy regulator) has been very assertive in promoting competition in the residential sector. As explained earlier, it forbids the incumbent from discounting by-default prices which are set at a level that allows new competitors into the market. There are however other reasons for Ireland's high level of switching. The new competitors (BordGais and Airtricity) offered significant price saving and had outstanding marketing campaigns with extensive use of online and social media and timely and opportunistic energy purchasing strategies at a time when customers were more receptive to saving money as the economic downturn was biting the country. The result of all this was that Ireland had the world's second highest residential switching rate in 2010[9] and the rule forbidding the incumbent from competing on prices might be relaxed in the coming months (earlier than first envisaged) as ESB's market share approaches the 60% threshold down from 95% as recently as September 2009[10].

The argument therefore is not that potential savings are unimportant when it comes to residential switching but rather that the level of market activity depends on a myriad of determinants. It may be because in practice customers are not so precisely aware of price levels or how much they can save and how. VaasaETT lists over 140 explanatory factors to switching such as extensive unbundling of retail, distribution and generation, new market entrants, critical aware customers, competitor differentiation, sufficient price float, volatility and margins etc., with financial savings potential only one of many factors.

[9] VaasaETT Global Energy Think Tank, World Energy Retail Market Rankings Report, fifth edition, 2011.
[10] CER, Review of the Regulatory Framework for the Retail Electricity Market, Competition Review Q4 2010, February 2011.

TOPIC FOCUS - Switching and the importance of timing

From a marketing perspective, there is no more important determinant of switching than effective timing. Timing manifests itself in the dynamics of switching through a multitude of ways.

Whether competing to win or keep customers, utilities must consider factors such as seasonality, cyclicality, taking advantage of competitors' price rises and publicity mishaps and playing to customer emotions and levels of critical awareness, to name but a few.

Furthermore, we are not just talking about approximate timing; sometimes windows of opportunity extend no more than a matter of days.

No switching determinant dominates however. VaasaETT has identified and analyzed over 100 variables that are all significant within the context of switching rates. It is the state, interplay and dynamics of all these variables that determines switching levels and trends.

Dr Philip Lewis, CEO, VaasaETT

Abstract from the "*2010 World Energy Retail Market Rankings Report*"

More information available at:

http://www.vaasaett.com/2010/12/world-energy-market-rankings-report-2010-released

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Price trend forecasts for 2011

Film producer Samuel Goldwyn is one of several people believed to have said, "Never make forecasts, especially about the future." We will nonetheless take the risk in this section and hope to have not been completely wrong when we look at it next year.

In our opinion, several factors indicate that residential prices are set to increase in 2011:

- Futures prices are on the rise for both electricity and gas. Research has shown that at least on the long run (years) wholesale prices are reflected in retail prices although competitive and political considerations, as well as profiteering can markedly influence the elasticity of retail prices in response to changes in wholesale prices.

- Many cash strapped European countries are likely to increase taxes and VAT on energy to secure more revenues. Greece increased its VAT rate three times last year, and Spain and Portugal did so once. Even Finland with much healthier public finances increased its VAT rate last July. We anticipate that more countries are likely to follow suit in 2011.

- The modernization of the electricity and gas networks and the integration of more and more renewables will require massive investments which are likely to lead to higher distribution tariffs and / or taxes. Analyses conducted in early 2011 seem to confirm our opinion since distribution tariffs and taxes related to transport and distribution of energy saw a spike in January in many countries. Distribution companies and Regulators often justified the price rise by the large investments required to modernize the network and to support the integration and development of renewable energy sources.

Many economists believe that the economic recovery will be short-lived and that we are likely to witness a double-dip recession. If they are right, wholesale energy prices are likely to suffer as they did in 2009. However, we also believe that the effect of lower wholesale prices on residential prices would be more than compensated by the increase in taxes and distribution tariffs and that "all-in" prices would still increase even if the economy was to slow down again.

The methodology behind the Household Energy Price Index

The methodology surrounding the HEPI project is designed to reflect the prices typically paid by residential customers in State capital cities in order to obtain:

- Comparable prices for household energy consumption (both electricity and gas)
- In relatively short time intervals (monthly)
- Taking into account different national consumption patterns (typical consumption levels)
- Reflecting different emerging tariff schemes, such as standard and competitive tariffs offered by incumbents and tariffs offered by competitors.
- Clearly separating out between the price for energy as a commodity, distribution and transmission charges, associated taxes and VAT.

It does so by aggregating the incumbent supplier's standard tariff and the tariffs offered by the main players in each city according to their respective market shares (in most cases the local incumbent and its main competitor). By using these 3 tariffs, we cover most customers in each capital city (from 60% in London to over 99% in many other cities).

Definitions

1. **Incumbent:** The former (or current) monopolistic electricity supplier, which typically sells electricity to customers in the State capital city area.

2. **Standard incumbent price:** The price that residential customers in the incumbent's area receive without any negotiation (by default).

3. **Competitive incumbent price:** The price which residential customers of the incumbent supplier receive if they leave the regulated price or request a better or different price or tariff type but remain with their by-default supplier. This price may be a variable or fixed term tariff (real-time, spot and other market based tariffs are at present not included).

4. **Leading competitor price:** The price which residential customers of the leading non-incumbent competitors (most successful in terms of organic customer wins) in the State capital city receive. This price may be a variable or fixed term tariff (real-time, spot and other market based tariffs are at present not included).

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Other Data Characteristics

All prices and other statistics relate to:

- The first day of the month the data is collected
- Residential customers with a typical consumption for the State capital city
- Customers in the State capital city area of the state concerned
- To ensure comparability, sign in and other temporary bonuses and other forms of non-monetary benefits are not taken into account since they can distort the overall tariff offered, especially in cases where they are offered on a "one-off" basis
- Standing fees are added to the price per kWh so that the entire end-user cost is taken into account.

Energy Price Formula

1. **Incumbent Standard Price Component** = Incumbent Standard Price x Incumbent Standard Price Weighting*

2. **Incumbent Competitive Price Component** = Incumbent Competitive Price x Incumbent Competitive Price Weighting**

3. **Leading Competitor Price Component** = Leading Competitors Price x Leading Competitors Price Weighting***

4. **Total Price (State price)** = **Incumbent Standard Price Component + Incumbent Competitive Price Component + Leading Competitor Price Component**

*: Proportion (%) of all customers in that city who remain of their by-default price.

**: Proportion (%) of all customers in that city who have one of the incumbent's competitive prices.

***: Proportion (%) of all customers in that city who have the non-incumbent competitive price.

Limitation: It is possible that in some States, competitive tariffs actually offered by incumbent and competitors may in some cases be lower than those officially published. This may raise the apparent relative price averages of such States within HEPI. In addition, it should be noted that it is accepted that not all customers receiving competitive prices receive the same price. This price represents the average price of the most popular players for the period being measured.

Meet the Author

Christophe Dromacque

Christophe Dromacque joined VaasaETT in October 2008 as a research assistant whilst studying Finance and Economics at the University of Vaasa in Finland. He is now an energy price specialist at VaasaETT and the manager of the renowned Household Energy Price Index (HEPI) project. Christophe is currently working on expanding the coverage of the HEPI project to more countries.

Christophe Dromacque took part in "Respond 2010"; one of the leading global studies into smart metering-based demand response and related in-home services which was released at the end of May 2010. He has also participated in numerous research projects and consulting work for various organizations such as Panasonic, CRIEPI (Central Research Institute of Electric Power Industry) of Japan, Onzo, E-Control, ADEME, the World Energy Council and Cap Gemini among others.

Christophe Dromacque is familiar with collecting and correlating comparable pricing and other benchmark data from nearly all European markets and is experienced at gathering, analyzing and presenting data in a form which delivers clarity, transparency and value to regulators, consumers and other interest groups.

- Christophe Dromacque (English / French)

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http://www.vaasaett.com/projects/hepi

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