

ELECTRICITY SUPPLY PROBE



E-CONTROL

PROBE OF ELECTRICITY
SUPPLIERS ACCORDING TO SEC-
TION 21 PARA. 2
ENERGIE-CONTROL-GESETZ
(E-CONTROL ACT)

Sample period: 2008-2012

Data as of: 27th of May 2014



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Summary

A significant drop in electricity wholesale prices of approximately 35% between 2008 and 2012 and a concurrent rise in household electricity prices of 10% prompted E-Control to initiate a supply probe. The analysis focused on data regarding costs and revenues in the electricity retail market. Households and small businesses (mass segment with an annual consumption of up to 100,000 kWh) and the industry were looked at separately, taking into account the diverging price developments in these market segments.

The margin situation is also relevant from a competition law perspective. An analysis of previous studies, price differences, consumer switching behaviour and market concentration strongly indicates that even during the period of evaluation, i.e. ten years into liberalisation, there were still companies that dominate the electricity retail business in Austria. Such incumbents must not, however, abuse their dominant position.

REVENUES

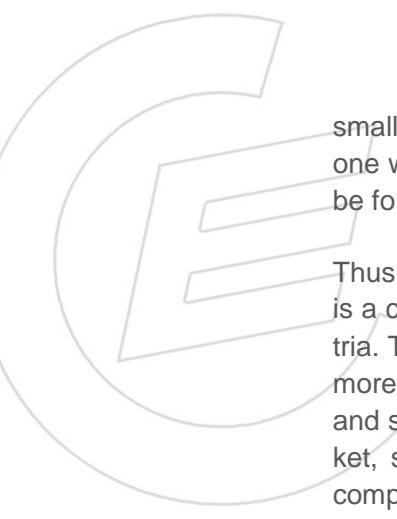
The supply probe showed that supplier revenues reflect the price development for the mass market and industry. The difference between revenues from household and small commercial customers on the one hand and the industry (with an annual consumption of more than 100,000 kWh) on the other hand increased continually between 2008 and 2012. By 2012, prices per MWh were almost EUR 12 higher on the mass market. While revenues from households per megawatt hour sold only exceeded those from bigger industry by 3% in 2008, this amount spiked to 19% in 2012. This can be interpreted as a sign of less intense competition in the mass customer segment.

COSTS

As far as procurement costs are concerned, large disparities could be observed between individual supply companies. A detailed evaluation shows that companies generally did not focus on exceedingly long-term procurement. Some suppliers, however, succeeded in procuring close to the market and thus making significantly better use of cheap prices on the wholesale market. At the same time the development of revenues revealed that these cheaper prices were often not passed on to the mass customers.

As opposed to the revenues, the difference in procurement costs between the industry and the mass segment was relatively low at up to 3 EUR/MWh.

The differences in retail costs between the individual companies were so stark that no conclusive statements can be made across Austria. Scale effects with respect to the sales quantity of a company could not be found either. In other words: there are a number of big suppliers that are burdened with significantly higher retail costs than



smaller suppliers, which is highly unusual for competitive industries, in the sense that one would expect inefficient firms either to be eventually driven out of the market or to be forced to increase cost efficiency over time.

Thus, the high variance of retail costs for households and businesses over five years is a clear indication of the low intensity of competition among energy suppliers in Austria. The low switching rates in the mass segment hardly induced suppliers to become more cost-efficient. Higher retail costs could thus be directly passed on to households and small businesses without the risk of losing customers. In a more competitive market, such inefficiency would certainly lead to a loss of numerous customers to the competition.


MARGINS

Based on the high variance in retail costs the calculated margins between companies also differ significantly. While, in an international comparison, very high margins of up to 19% could be observed on occasion, other energy suppliers made huge losses. On an annual average, taking into account all suppliers, the margins between 2008 and 2010 were negative. The average margin in 2009 was -8.6%, while the annual average in 2012 rose to +7%. In the more competitive industry segment margins were more constant at between -1.3% and 1.7%.

A look at company profitability (e.g. EBIT) across entire companies, however, often shows that their overall profitability is higher than that realised from electricity supply. Based on accounting data, selling energy to households and businesses thus seems far less profitable for individual companies compared to other sectors, such as production, or other products, such as district heating. The variance in the reported data and the business results may be caused by a multitude of reasons, such as, for example, the difficult and inconsistent cost allocation within a company and also between customer groups, or procurement costs that are passed on within a company, or, yet again, a lack of competitive pressure.

In a more competitive market it would be difficult to pass on opportunity costs for the use of production facilities which are e.g. determined by the most expensive hours on the wholesale market to sales as this cost disadvantage would leave the sales department with no chance to compete against other suppliers. Within a group of companies these negative margins are, however, compensated by positive margins in other segments. After eliminating companies that do not need to purchase significant amounts of energy from the market from the sample, the “crisis years” of 2009 and 2010 do not go unnoticed. However, the unweighted margins for 2011 and 2012 in companies that purchase most of their electricity are significantly higher at 6.5% and 11.8% on average, respectively.

All in all, the margin development must be closely observed also in the coming years. The wholesale price level, which has continued to drop since 2012, should be reflected by significantly reduced costs for electricity purchase on the procurement side, especially in the years from 2013 to 2016. These years will show whether the price



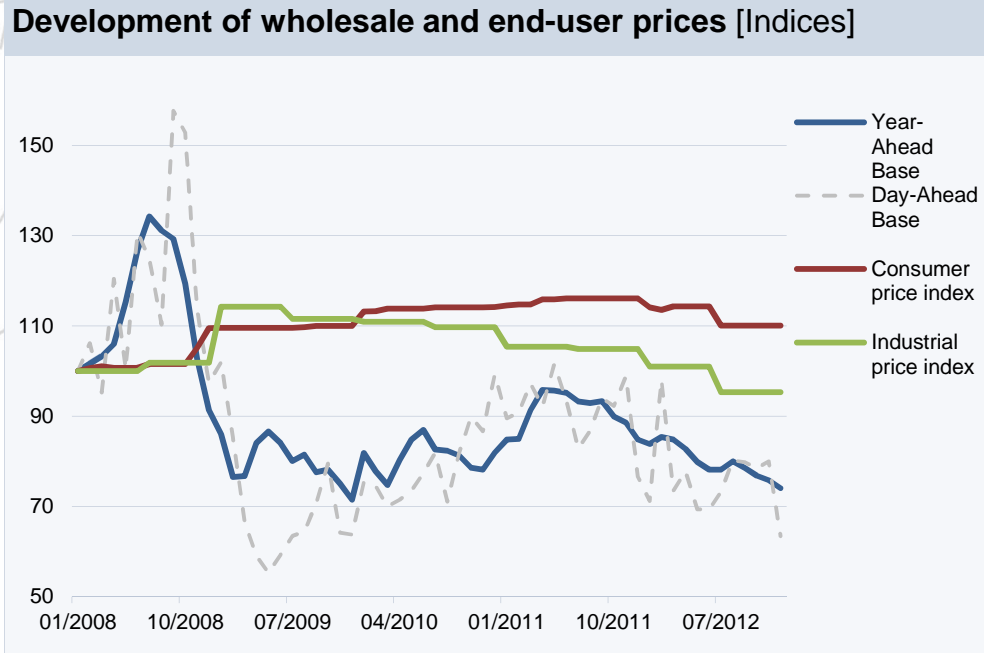
drops that have already been passed on to the industry will also result in lower prices for households and businesses. Based on the price reductions on the mass-customer market which were observed until the end of 2014, this does not yet seem to be the case.

E-Control will continue to observe the price developments and will repeat the supply probe for the years from 2013.

1 Background

- (1) Based on the development of consumer prices for electric energy from 2008 to 2012 and the change in wholesale prices observed during the same period, E-Control felt prompted to initiate a supply probe according to section 21(2) *Energie-Control-Gesetz* (E-Control Act) in conjunction with section 34 E-Control Act and section 10 *Elektrizitätswirtschafts- und -organisationsgesetz* (Electricity Act) 2010. At the close of 2013 and beginning of 2014, 21 companies were asked to submit data on revenue and cost structure necessary for the analysis to E-Control, itemised by products and customer groups in electricity supply. The original, January 2014 deadline for submitting data was prolonged until February 2014 for almost all companies upon their requests for extension of the deadline. The last reports were submitted to the authority at the end of May 2014, following final adjustments and corrections in the course of a data plausibility check undertaken by E-Control (for details see paragraph (23) seq.).
- (2) E-Control initially asked companies to complete and submit a survey form as part of a supply probe regarding electricity supply margins as early as August 2011 due to the market situation at that time. After legal clearance by the Austrian public law courts the data were again requested for the reporting years 2008 through 2012. These data are now the basis for the supply probe with regard to the development of end-user prices of electric energy and the concurrent change in wholesale prices.
- (3) Since market liberalisation in 2001, the market for supplying consumers with electric energy has been subject to free competition (as opposed to the regulated networks). In this context, price formation is a central element of the market result and thus an integral part of any analysis of the competitive situation. Price is also the most important factor from the consumer's perspective, particularly with a homogeneous product like electricity, for which a minimum quality is guaranteed. In a functioning electricity market with competing suppliers, fundamental factors such as the price development on the wholesale market should be reflected in consumer prices.
- (4) Due to a lack of corresponding data, the situation in Austria could so far only be assessed on an average basis, indicating a low degree of correlation between wholesale and end-user prices, especially in the mass market. While the wholesale price^a on the EEX/EPEX day-ahead market for baseload amounted to 66 EUR/MWh (6.6 cent/kWh) on average in 2008, the annual average^b in 2012 only reached 43 EUR/MWh (4.3 cent/kWh), equalling a percentage drop of 35%. The reduction of the peak index was even bigger at almost 39%, due to the structural changes in the installed capacity. The same period saw an almost 10% increase in household customer prices^c, rising from 72 EUR/MWh (7.2 cent/kWh) to 79 EUR/MWh (7.9 cent/kWh). The correlation^d between the day-ahead base index and the consumer price index across the observation period was -0.53 on a monthly basis, i.e. there was no correlation to speak of. This development is illustrated by Figure 1. For industrial large consumers a price drop of 2.74% could be observed during the same period. The industrial price survey^e showed a drop from 60 EUR/MWh (6.0 cent/kWh) in 2008 to almost 59 EUR/MWh (5.9 cent/kWh) in 2012.

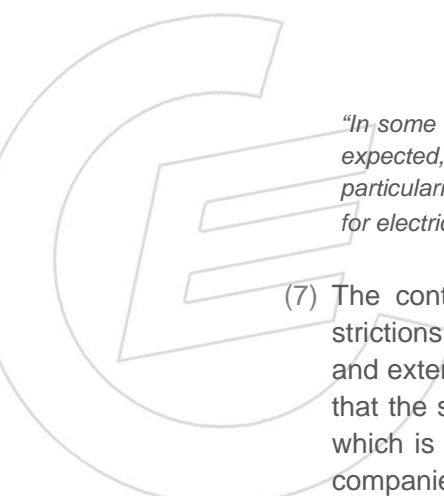
Fig. 1



Note: wholesale prices refer to the respective monthly arithmetic mean. The consumer price index refers to a typical household with an annual consumption of 3,500 kWh. The industrial price index is based on E-Control's industrial price survey.

Source: EEX, EPEX, calculations by E-Control

- (5) This general comparison, however, only allows for limited conclusions due to the necessity of structuring supplies and the diversity of possible procurement strategies. Statements about the absolute difference between end-user prices and procurement costs, i.e. the actual margins, can hardly be inferred. Suppliers are, for instance, able to procure the required amounts of electricity beforehand via futures or forwards or bilateral, long-term full-supply contracts and to determine prices at an early stage. Especially when prices experience a sharp drop or are declining, this strategy can lead to significant divergences from more short-term wholesale price indices.
- (6) Moreover, risk-averse households benefit from the fact that price fluctuations on the wholesale market are smoothed to a certain extent over time. Such households thus do not face the volatility of wholesale prices to the same degree as large industrial consumers, which may have to fully bear market price fluctuations depending on their contracts. The margin model E-Control has applied so far considers at least some aspects of this issue. For further explanations, see paragraph (41) seqq. in section 3. However, due to a lack of data availability, so far only the procurement side could be analysed, leaving the second cost factor, namely retail costs, completely unexplored. The supply probe at hand is the first to provide data on actual revenues itemised by individual customer groups and all cost components in Austria. Based on these detailed data, an estimate can be made as to whether customers are offered prices that truly reflect the procurement costs and retail costs. The analysis of the development of gross margins (mark-ups) between 2008 and 2013 also raised questions on the EU level^f:



“In some of these countries, mark-ups seem to be higher than the values that could in principle be expected, posing questions about the extent of real price competition on these markets. Given the particularities of each country, the analysis of the relationship between wholesale and retail prices for electricity and gas markets merits further in-depth studies by NRAs.” (ACER/CEER 2014, p. 63)

- (7) The contents of the present, publicly accessible report are subject to certain restrictions. The evaluations and analyses undertaken by E-Control were more thorough and extensive than depicted hereafter. On the one hand it must be taken into account that the surveyed cost and revenue data are considered business and trade secrets, which is why the report does not allow for conclusions to be drawn about individual companies. Moreover, it aims to avoid giving companies the possibility to improve their coordination in an economic, game-theory sense, as this would harm economic welfare. On the other hand the report has to comply with the (information) responsibilities of E-Control, giving the interested public access to the results of the probe with the utmost transparency. The goal is to account for these partially contradictory claims as much as possible and to depict the most important results in this report in an aggregated form.
- (8) The report is structured in three sections. Section 1 covers the legal background, objectives and the structure of the supply probe. Section 2 treats the topics of market definition and dominant positions on the electricity market. Section 3 presents the main part of the analysis, namely the margins of Austrian electricity suppliers. To improve readability, technical details that are not absolutely necessary for comprehension are explained in the notes at the end of the report. In accordance with wholesale market conventions, all prices are indicated on a nominal basis and in EUR/MWh; they can easily be converted into cent/kWh by dividing them by ten.

1.1 Legal background

- (9) According to section 4(7) E-Control Act the regulatory authority is obliged to implement measures that guarantee, among other things, that customers benefit from an efficiently functioning national market and that contribute to the upholding of customer protection. Moreover, according to section 4(1) E-Control Act measures must be taken for the promotion of a competitive market. According to section 4(4) E-Control Act the regulatory authority must also provide for an, inter alia, consumer-oriented development of the market system.
- (10) According to section 21(2) E-Control Act the regulatory authority is charged with producing studies, reports and opinions regarding the market and competition situation in the fields of electricity and natural gas. According to section 24(1) E-Control Act the regulatory authority is responsible for overseeing competition on the electricity and natural gas markets. E-Control must therefore order market participants that have engaged in illegal behaviour to comply with the law. Moreover, E-Control can also exercise the application rights granted to the regulatory authorities according to the *Kar-*

tellgesetz (Cartel Act) 2005 if an act constitutes an abuse (section 21(3) E-Control Act, section 36(4)(2) Cartel Act 2005).

(11) To fulfil this task E-Control is thus authorised according to section 34 E-Control Act to inspect all documents of market participants, system operators, storage system operators, balance responsible parties and clearing and settlement agents and request information on all circumstances with respect to their activity. Moreover, section 10 Electricity Act 2010 stipulates that electricity undertakings shall be obliged to permit the authorities, including the regulatory authority, to inspect any documents and records relevant for their business activities at any time, as well as to furnish information on any facts relevant to the respective authority's sphere of competence.

(12) Regarding the legality of the legal basis, please refer to the finding of the Austrian Constitutional Court of 29 September 2012, B 54/12 ua, in particular margin numbers 31, 37, 42, 45, 47 and 51.

“As already indicated by the use of the phrase ‘in particular’ in section 24 para. 1 item 2 E-Control Act as well as the assignment of tasks regarding the market and competition situation in the electricity sector in general in section 21 paras 2 and 3 E-Control Act, the ‘supervising and monitoring task’ of E-Control actually exceeds the ‘regulated sector’ in the strict sense and also encompasses the electricity sector and thus the electricity market as such.” (margin number 31, quote translated from German)

(13) Further:

“Investigatory powers as stipulated for E-Control by section 21 para. 2 E-Control Act are meant to enable the regulatory authority to obtain indispensable knowledge about the markets it is supposed to regulate and monitor, which is a prerequisite in particular for the fulfilment of its regulatory tasks in the stricter sense.” (margin number 37, quote translated from German)

“The general supervising and monitoring function of E-Control stipulated by section 21 para. 2 in conjunction with section 24 para. 1 item 2 E-Control Act describes, in conjunction with section 4 items 1 and 7 E-Control Act, in sufficiently concrete terms the purposes for which E-Control is allowed to collect confidential market data from the market participants as discussed here. The data survey conducted by the Executive Board of E-Control and the described supervising and monitoring task legally conferred to E-Control are thus directly linked. This task in principle requires ongoing market surveillance. Apart from that, the data collection is also prompted by a specific development. [...] Therefore it does not constitute an instance of ‘retention of data’ which is illicit according to constitutional law.” (margin number 45, quote translated from German)

“In this context the legislative authority is in particular not required to list in the act the individual concrete data which the Executive Board of E-Control is allowed to collect within the scope of the task it has been legally conferred. On the contrary, the legislative authority in the context at hand fulfils the requirements stipulated by section 1 para. 2 Datenschutzgesetz (Data Protection Act) in conjunction with section 18 Bundesverfassungsgesetz (Federal Constitutional Act) to previously define the interventions to which E-Control shall be authorised if the legislative authority requests to be provided a concrete connection with the regulatory authority's task (section 34 E-Control Act) and defines the adequacy of the respective measure with regard to the task it should fulfil (first sentence in section 4 E-Control Act).” (margin number 47, quote translated from German)

(14) And also:

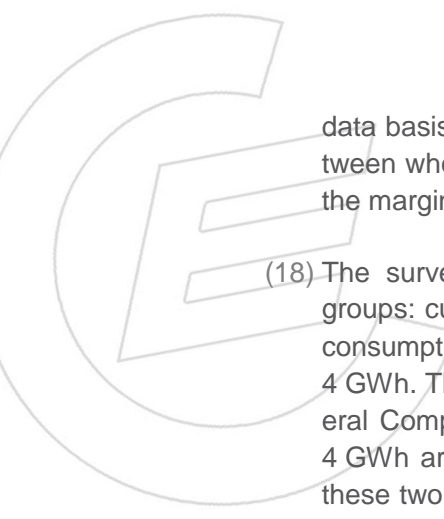
“This, however, does not stipulate an ‘exclusivity claim’ by the competent provincial government to the collection of data to be specified in the respective provincial legislation according to section 88 para. 2 Electricity Act 2010. This already results from the provision (which constitutes directly applicable federal law) of section 88 para. 2 Electricity Act 2010, according to which the parties to whom reporting obligations apply according to section 88 para. 2 Electricity Act 2010 shall submit the data specified therein to the regulatory authority and the respective provincial government electronically and in a format defined by the regulatory authority.” (margin number 42, quote translated from German)

“The provisions of the Electricity Act 2010 thus already stipulate an information claim of the regulatory authority to the data specified in section 88 paras. 1 and 2 Electricity Act 2010 that is independent of the claim of the respective provincial government.” (margin number 43, quote translated from German)

- (15) It must therefore be noted that this supply probe does not violate the basic right to data protection (see Austrian Constitutional Court finding of 29 September 2012, B 54/12 ua, margin number 51).
- (16) The Austrian Administrative Court also evaluated the procedure undertaken by the authority as objective and legal and expressed no concerns (see Administrative Court finding of 27 September 2013, ZI. 2012/05/0212-10). The requested data are therefore directly connected to the tasks which E-Control must fulfil and can be considered plausible and also suitable to subsequently implement measures enabling all customer groups to draw benefits from the efficient functioning of the national market. From a constitutional point of view, it is therefore deemed permissible and reasonable to impose information and participation duties in order to fulfil public tasks. Solely the qualitative questions regarding the procurement strategy on sheet number 10 of the survey form was not deemed sufficiently justified by the Administrative Court, which is why this sheet was not included in the 2013 survey.

1.2 Objective and structure of the supply probe

- (17) Unlike in a general industry or sector enquiry the objectives of the supply probe were much more narrowly phrased. The objective of this survey was not to analyse all competition-relevant aspects governing the market for the supply of electricity to consumers (hereinafter also referred to as electricity supply market), but to answer concrete questions regarding price formation and transparency of prices for different customer groups based on the development of retail prices, which E-Control considers difficult to explain based on public data. Questions regarding market definition, entry barriers, switching costs, etc. are not investigated here, but only serve as the backdrop against which this supply probe should be considered. Based on the concrete question regarding the amount and composition of revenues and costs of the Austrian electricity suppliers, which in turn constitute the basis for the price development to be observed, a detailed survey form and, subsequently, a concept for evaluation were developed. The



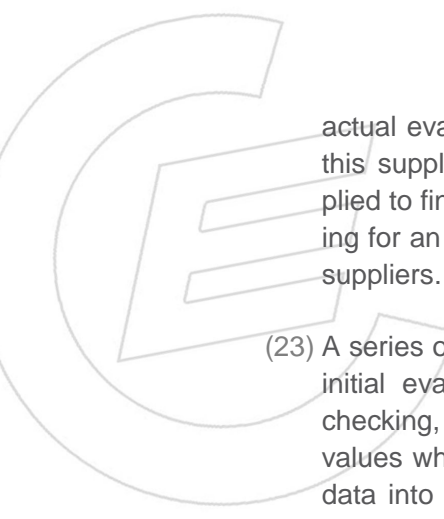
data basis thus created is intended to enable an analysis of the lack of correlation between wholesale and retail prices. Moreover, the data also allow for a comparison with the margin model that E-Control has used until now.

- (18) The survey form collected information on quantities, revenues and costs for four groups: customers with (i) an annual consumption $\leq 100,000$ kWh, (ii) $100,000$ kWh $<$ consumption ≤ 1 GWh, (iii) 1 GWh $<$ consumption ≤ 4 GWh and (iv) consumption > 4 GWh. The first group comprises the small or mass customer segment (also see Federal Competition Authority 2005). Customers with an annual consumption exceeding 4 GWh are categorised as large-scale industry. It can be assumed that treatment of these two customer segments differs greatly when it comes to procurement as well as product and contract design. Contracts for the large-scale industry usually reflect the market situation more closely and result from individual contract negotiations. Procurement for this customer group usually follows the *back-to-back*⁹ principle, meaning that volume or price risks can be passed on at least partially or according to the wishes of the customer. Households and the small-scale industry, however, are usually offered standardised contracts and products, which may, under some circumstances, be linked to a stock exchange index, but are not individually adjusted. The price and volume risk, e.g. with regard to imbalance charges, is largely borne by the supplier that procures for the entire portfolio of the mass segment (structured procurement). These differences are also reflected in the often quite different price developments for these customer groups during the period of observation (see paragraph (4)).
- (19) Small and medium-sized enterprises, businesses and smaller municipalities, which have access to products and pricing models of their own, are situated between these two segments. While no final classification was made for businesses and the small-scale industry with an annual withdrawal between 100,000 kWh and 1 GWh in the course of the sector enquiry (Federal Competition Authority 2005, p. 70), the analysis of customer-specific gross margins showed big differences between households, businesses and the industry. For this reason, the present supply probe inquired about these customer groups. Their definition may, however, differ according to different suppliers.
- (20) In order to account for this fuzziness, it was agreed in written information and recorded conversations with the companies that divergences between the definitions of the groups are generally permissible and possible. As far as contents are concerned, it is in fact irrelevant for the scope of this supply probe whether the large-scale industry group starts at a consumption of 4 GWh or 4.2 GWh. The basic issue at hand deals with the question whether margins for the mass segment differ systematically from those for SME/businesses and those for the industry and whether the price fluctuations observed can be explained by different procurement strategies and retail costs.

Table 1

Contents of the survey form for the reporting years 2008 to 2012		
The following data were collected:	For all customer groups	Mass segment (annual consumption ≤ 100,000 kWh)
Quantities in MWh, number of metering points	Supplied quantity, in total	
	Supplied quantity per network area and customer group	
Share of products in total supply, number of metering points and quantities in MWh		Share of offered products in the overall supply quantity (percentage)
		Metering points and supplied quantities for all products with a share exceeding 5% per network area
Revenues in EUR	Total revenue	
	Revenues from additional expenses for green electricity	
Costs in EUR	Procurement costs	
	Retail costs	
Cost details in EUR and MWh	Procurement on the spot market	
	Procurement in the reporting year without spot market	
	Procurement in the year prior to the reporting year	
	Procurement two years prior to the reporting year	
	Procurement three years prior to the reporting year	
	Procurement more than three years prior to the reporting year	
	Balancing energy	
	Guarantees of origin	
	Additional expenses for green electricity allocated by OeMAG	
	Other electricity procurement costs	
	Procurement in one's own company, as long as not based on stock exchange or reference price	

- (21) Table 1 gives an overview of the data contents that were collected separately for the four customer groups. In general, the allocation of costs to individual customer groups had to be appropriate and technically correct. In cases where this proved impossible E-Control defined pro rata, quantitative allocation as standard.
- (22) The extremely detailed survey made it necessary to weigh feasibility against significance in the selection of the companies. A full survey of the far more than 100 suppliers active in Austria would likely have resulted in a reduction of data contents and would thus have essentially limited the potential significance as well as the



actual evaluation. Eventually, the data of 21 suppliers were collected in the course of this supply probe, representing approximately 90% of the electricity quantities^h supplied to final consumers in Austria in 2012. The sample also comprises entrants, allowing for an at least qualitative identification of differences between new and established suppliers.

- (23) A series of necessary steps was defined with regard to a data plausibility check. In the initial evaluation, the survey answers were tested regarding internal consistency, checking, for instance, whether subsets in individual table sheets corresponded to sum values which were also collected. We also attempted to identify outliers by converting data into percentages or EUR/MWh in order to recognise potential data errors. The corrections reported by the companies were then newly evaluated and compared with external data sources, such as reports by the Court of Audit, entries in the Commercial Register, annual reports, monitoring data, etc.
- (24) As far as the data plausibility check through entries in the Commercial Register or annual reports is concerned, it must be noted that the business activities of supply companies or a group of companies often comprise more than just the supply of electric energy. The collected data thus generally constitute a subset of the company's business activities or sold products. In these cases, we used diverse approaches to estimate a range of costs and revenues for the reported values regarding in the electricity supply over the period, verifying whether the reported data correlated plausibly with the rest of the products or business activities.

2 The market

- (25) In this section, the insights into the Austrian market concerning the electricity supply to end-users obtained so far are briefly summarised in order to position the analysis of margins within an informative context. The focus is on the topics of market definition and market concentration. For more general information about the mechanisms and functioning of the Austrian electricity market, please refer to any of the other publications dealing with this issue, for instance the market reports of E-Control (<http://www.e-control.at/en/publications/market-reports>) or the report reviewing 10 years of energy market liberalisation^l.

2.1 Market definition

- (26) Against the backdrop of rising electricity prices in the mass and large customer segment, the Federal Competition Authority initiated a sector enquiry in 2004, cooperating with E-Control and the Federal Cartel Prosecutor. The following statements were made in the summary of the analysis (emphasis in original):

“Both qualitative and quantitative survey methods thus strongly indicated that for customers connected to network level 7 – i.e. households, small commercial and agricultural customers – and, to a lower extent, also for customers connected to network level 6 (medium-sized commerce) the network area serves as the geographically relevant delineation.

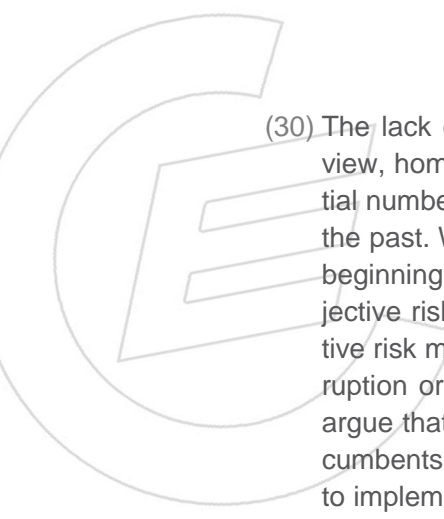
Market share calculations suggest that **on the small customer market, practically all large energy suppliers with a network area of their own that were established in Austria before the start of the liberalisation process occupy a position of market dominance.** In the large customer market, there is – based solely on market shares – one Austrian company with a dominant position.” (Federal Competition Authority 2005, p. 11, quote translated from German)

- (27) The EU Commission stated as early as 2003 that at least a distinction should be made between the two customer groups of mass and large customers (COMP/M.2947 – *Verbund/EnergieAllianz*):

“As the parties submit, and as the Commission’s enquiries confirm, there are substantial differences between the demand behaviour of large customers and mass customers. Large customers are usually more price-sensitive, and correspondingly more ready to change suppliers than small customers are. Negotiating power and conduct of negotiations are also different. This is reflected in different sales strategies adopted by the energy suppliers and a different level of prices.” (COMP/M.2947, margin number 36)

The Commission confirmed this distinction between product markets for industrial and large commercial consumers with an annual withdrawal exceeding 0.1 GWh and the mass segment with an individual withdrawal below this threshold in 2012. (COMP/M.6641 – *Verbund/Siemens/E-Mobility Provider Austria*, esp. margin numbers 23 and 24, in German)

- (28) The present supply probe by E-Control does not primarily deal with the extent to which market definition has changed since the 2004 sector enquiry. In a first step, this question does not have to be answered conclusively in this analysis, instead evidence for it should be presented in future actions taken to declare or stop the abuse of a dominant position according to section 5 in conjunction with sections 26 and 28 *Kartellgesetz* (Cartel Act) 2005.
- (29) Considering the switching rates and the saving potential, which is also telling in terms of consumers’ preferences and their demand function, it can, however, be safely assumed that there have hardly been any changes in the mass segment during the observation period. From the onset of liberalisation until the end of 2013, annual switching rates for metering points with a standardised load profile were below 2% across Austria, and the maximum for any individual network area was 3.1%.^j The annual saving potential offered by the cheapest alternative supplier compared to the incumbent amounted to a double-digit percentage for the average household, depending on the network area. In January 2009, a switch would save a maximum of EUR 112 (16% of the total price) and in January 2012, a maximum of EUR 115 (19% of the total price).^k The large saving potential, especially compared to the total price, is remarkable in particular because the price of energy itself accounts for no more than 40% of the total price, the rest being composed of regulated network charges as well as various taxes and surcharges.



(30) The lack of readiness to switch the supplier of an, at least from a technical point of view, homogeneous product raises a number of questions. For this reason, a substantial number of publications on the energy sector have dealt with switching behaviour^l in the past. Watson, Viney & Schomaker (2002) show, for example, that especially at the beginning of the liberalisation process switching to another supplier can entail a subjective risk, which in turn raises the costs of looking for a different supplier. A subjective risk may be the consumer's fear of not being provided with energy in case of a disruption or an outage because they switched suppliers. On the other hand, they also argue that with increasing experience and transparency the marketing strategies of incumbents aiming at confusing consumers and creating insecurity are becoming harder to implement. Galus & Schwabe (2008) compare experiences in the UK and Germany, two countries with comparable saving potentials but widely disparate switching rates. They conclude that psychological switching barriers, such as trust, commitment and sympathy, are decisive for the differences in the switching rates.

(31) Irrespective of subject-specific discussions of what causes switching costs and behaviour, the existence of considerable switching barriers and low switching rates on the Austrian electricity market during the observation period from 2008 to 2012 is highly relevant in connection with the present supply probe. It means that new entrants on the market have to offer substantial discounts to consumers, at least in the mass segment, in order to be able to acquire customers in the first place. Incumbents within a network area are thus able to raise their prices, at least within a certain range, without having to risk losing a considerable share of their customers. The Court of Audit commented on this in 2011:

“The electricity market is characterised by the regional incumbents’ prominence and market power in their supply areas from the times of their monopoly position (their so-called home markets) and the strong ties between customers and their long-standing suppliers. Electricity consumers are therefore reluctant to switch suppliers if price differences are low [...]. The mass customer segment is thus a secure and easy-to-plan sales opportunity compared to the more volatile large customer segment.”
(margin number 2, p. 225, quote translated from German)

(32) All in all E-Control assumes, based on the currently available information, that the market definition for the mass segment, also with regard to the geographical limitation to the network area, is still valid in a renewed study with an observation period from 2008 to 2012.

2.2 Market dominance

(33) Irrespective of the specific geographic market definition, statistical evaluations show high market concentration on the Austrian electricity market. The market statistics^m depicted in Table 2 provide a rather optimistic evaluation from the perspective of competition. On the one hand, it is an Austria-wide survey, which possibly does not depict the geographical market area adequately. On the other hand, the statistical evaluation describes all suppliers individually even if they have merged and exercise one, de fac-

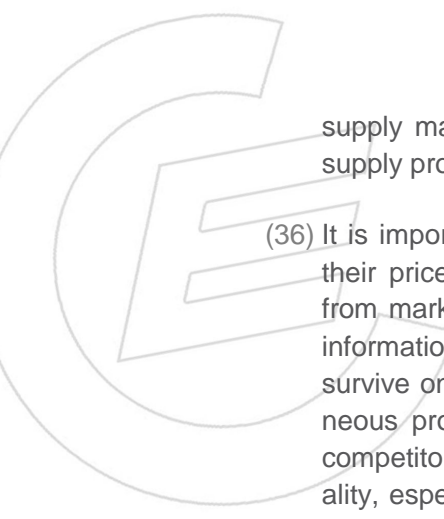
to joint sales policy regarding price or product design, geographical allocation of customers, etc. Even in this very conservative survey, the biggest five suppliers had a market share of 55% in the household segment in 2012. In agriculture, this share was even trumped at 69%.

Table 2

Market share 2012					
Number of suppliers	Households	Business consumers	Agriculture	Other	Other (interruptible)
5	55.15%	47.16%	68.69%	72.80%	61.82%
10	80.50%	72.57%	87.16%	88.42%	81.44%
15	90.06%	83.26%	92.38%	92.10%	88.16%
20	92.59%	88.79%	94.40%	93.66%	91.11%
25	94.12%	91.40%	95.50%	94.94%	92.90%
30	95.21%	93.14%	96.41%	96.02%	94.14%
35	96.17%	94.30%	97.16%	96.97%	95.15%
40	96.95%	95.28%	97.74%	97.81%	95.96%
45	97.56%	96.13%	98.20%	98.49%	96.69%
50	98.04%	96.85%	98.56%	98.93%	97.34%
100	99.81%	99.75%	99.93%		99.91%
120	99.97%	99.95%	100.00%		100.00%
140	100.00%				

Source: extract from E-Control's electricity market statistics – suppliers, calendar year 2012

- (34) Apart from the anonymised published statistics that do not allow conclusions about individual companies, E-Control has collected data on the market shares of specific companies from its ongoing monitoring activities. These data enable E-Control to draw conclusions about the market concentration and the market shares of individual companies.
- (35) Though market shares alone only serve as an indication of market powerⁿ or functioning competition (in an economic sense), they play a vital role in the legal assessment of a company's dominant position. This is relevant because dominant companies are subject to specific rules (see paragraph (37) below). The *Kartellgesetz* (Cartel Act) 2005 defines a dominant company as a company that is exposed to little or no competition at all, occupying a superior market position in comparison with its competitors (section 4(1) Cartel Act 2005). The question whether a company dominates the market therefore has to be assessed on an individual basis. Without a comprehensive market definition, an analysis of market entry barriers and, especially, considering all competition-relevant circumstances, a conclusive assessment of this question, which is significant with respect to cartel law, would go too far within this supply probe. Based on all present information on switching behaviour, market entry, market concentration, market behaviour and market structure as well as the analysis of the Federal Competition Authority (2005), a substantiated evaluation can be made nevertheless. E-Control continues to assume, based on all these factors and at least for the observation period between 2008 and 2012, that there are dominant companies on the Austrian electricity



supply market. This is also relevant with respect to price formation and the present supply probe.

(36) It is important to keep in mind that companies in competitive markets are free to set their prices according to their company strategies. In a market that does not suffer from market failure, i.e. that is characterised by sufficient competition and symmetric information, companies with extremely high costs or prices compared to others cannot survive on the market for long because their prices can be undercut. With a homogeneous product, consumers would base their decision on the price and switch to a competitor's product. This economic standard model naturally comes to its limits in reality, especially because markets hardly ever conform to the theoretical model of perfect competition without market failure. Both the sector enquiry of the Federal Competition Authority (2005) and various analyses in the market reports of E-Control point out that especially in electricity supply, these conditions are not met.

(37) In cases where damage to economic welfare through market failure is substantial enough to justify direct regulatory intervention, for example in the case of the regulation of natural monopolies such as with distribution or transmission networks, an ex-ante intervention of the market takes place. In other cases there are regulations (competition and cartel law) that aim at guaranteeing functioning competition also in markets that do not conform to laboratory conditions. Dominant companies thus have to follow special rules also with regard to price formation.

(38) In particular the abuse of market dominance is forbidden: abuse is constituted, on the one hand, by the sale of products below the acquisition price if such sale is not objectively justified (section 5(1)(5) Cartel Act 2005), or, on the other hand, by the request of buy or sell prices (or other terms and conditions) that deviate from what would likely have resulted in a market with functioning competition. In this case, especially the behaviour of companies in comparable markets with functioning competition has to be considered (section 5(1)(1) Cartel Act 2005). Dominant companies therefore do not enjoy complete freedom when it comes to price formation, as would result from the interplay of supply and demand in a competitive market, because they are per definition able to exert market power and make prices. Without entering into the legal provisions and analyses^o in this area in too much detail it should be mentioned that hardly any cases of excessive prices could be documented, neither on the European level nor in the individual member states.

"If the main objective of competition law is to promote consumer welfare, prohibiting excessive prices surely makes perfect sense. Or does it? The answer to this question is surprisingly complex and controversial for a host of practical, legal, economic, and ideological reasons." (Niels et al. 2011, p. 268)

(39) Apart from these difficulties it must be stated nonetheless that excessive prices, i.e. prices above the competitive level, lead to a loss of welfare, especially manifested in a reduction of consumer surplus. For this reason, E-Control continuously observes the price developments in Austria as part of its monitoring activities and calculates procurement cost scenarios in order to obtain an estimate of the probable margin devel-

opment. In the course of these monitoring activities, questions have been raised regarding this development that can be dealt with through a supply probe. In the following, the most significant results of the supply probe with respect to the procurement and retail prices on the Austrian electricity market are outlined.



3 Margins

- (40) The main part of the supply probe is divided into three sub-sections. The first sub-section describes the margin model E-Control has used so far to estimate the gross margins (i.e. excluding retail costs and the like) for electricity supply in Austria. In sub-section 3.2 the main results are discussed. The topic of additional expenses for green electricity is separately examined in sub-section 3.3. Sub-section 3.4 concludes with an outlook on the expected developments in the near future.

3.1 Present model of E-Control

- (41) In its present approach to estimating the market conditions, especially with regard to the relations between consumer and wholesale prices, E-Control has used a (gross) margin model that it developed in cooperation with Frontier Economics: Gross Supply Margins for Electricity (GSME). It is based on publicly available data, including wholesale prices (EEX futures and EPEX SPOT) and the load profile for households, H0, which is published by the clearing and settlement agent APCS^P. The procurement prices calculated on the basis of these data can then be compared to the prices in the Tariff Calculator of E-Control or the price lists for consumer products published by suppliers.
- (42) In these calculations, additional costs resulting from the procurement of electricity, e.g. brokerage or stock exchange fees, costs for the deposit of securities (e.g. variation margins), risk surcharges or IT equipment and personnel for a trading floor are not considered. It has to be mentioned, however, that in cases of companies that only engage in trading or electricity generation the total costs of a trading floor cannot be assigned entirely to the activity of supplying consumers. This means that the GSME model is based on simplified assumptions and the resulting procurement prices should thus be considered an indication based on public data. Moreover, the GSME algorithm can be used to calculate various procurement scenarios with regard to the share of spot market procurement and the lead time of the respective procurement strategy.
- (43) Table 3 below presents a selection of scenarios in which the above parameters differ. The “short” scenarios assume that the load profile, which represents the load or the demand of households, is covered by yearly or quarterly futures as much as possible, and that the remaining volume is purchased on the spot market. There is no excess

volume in these scenarios, i.e. no quantities are sold on the spot market. In the “balanced” scenarios, the supplier procures in balance and thus the quarterly and yearly futures are added to the load profile in a way that the same volumes are bought and sold for the remaining delta. Over the year, the volumes that must be purchased and sold on the spot market are thus identical. The numerical codes such as (12;0) refer to the beginning and end of the procurement period, as it is assumed that the procurement scenarios also differ with regard to the procurement dates (see also E-Control 2012, p. 56). In the scenarios (24;0) procurement begins 24 months prior to the delivery date and lasts up until the actual delivery date.

Table 3

Gross Supply Margins Electricity (GSME): comparison of various procurement scenarios [EUR/MWh]					
Year	12;0 short	18;0 short	24;0 short	12;0 bal- anced	18;0 bal- anced
2009	60.59	58.46	57.17	78.70	74.11
2010	49.35	51.99	52.18	48.87	57.61
2011	54.31	55.34	55.92	48.30	49.83
2012	52.62	52.12	52.13	56.24	54.72

Year	24;0 bal- anced	Spot only	18;6 short	18;6 bal- anced	Mean
2009	71.00	41.74	56.98	70.58	60.80
2010	59.96	47.23	54.00	62.86	48.21
2011	50.66	53.94	55.91	50.69	46.94
2012	54.40	45.65	52.03	54.04	47.54

Source: E-Control supply probe 2014

Notes: calculations by E-Control, based on publicly available data (EEX/EPEX prices, APCS load profile H0)

- (44) The calculated scenarios show that while the difference between the cheapest and the most expensive scenario still amounted to as much as 36.95 EUR/MWh in 2009, it dropped to 7.62 EUR/MWh and 10.60 EUR/MWh in 2011 and 2012, respectively. The convergence of the various procurement strategies reduces the probability that the price differences among companies can be explained by procurement-related factors. This was one of the reasons that suggested that a survey of the procurement costs was necessary. Moreover, the findings to be gained from the supply probe will be used to enhance the model. Additionally, the results will allow for a comparison with the costs for other components, especially retail costs, and, if needed, an adjustment of the model.

3.2 Results

- (45) In the following, the most important evaluations are presented by topic: (i) volumes and revenues, (ii) procurement costs, (iii) retail costs, (iv) margins. As a general rule, we show unweighted arithmetic means because volume weighting might permit conclusions about the strategies of individual companies due to the relatively high market

concentration. However, to facilitate interpretation of the anonymised results, we also indicate standard deviation, either in the text or tables. Individual extreme outliers were eliminated for the public report if they noticeably influenced the findings and significantly distorted the respective mean. As a matter of course, the companies were considered individually in the internal analysis, as a direct comparison is only meaningful to a limited extent due to the varying factors, e.g. different sales volumes (economies of scale) or definition of customer groups.

(46) *Volumes and revenues.* – The evaluation of the sampled quantity structures showed, as expected, that households and the small-scale industry accounted for 95% of metering points, but for only 40% of supplied energy volumes in the sample in all reporting years. In the mass segment, the companies each offered on average four products with a share of over 5% of the quantity delivered, whereby the largest product in terms of market share on average generated higher revenues (in EUR/MWh) than the smallest. Looking at the revenues, the average revenues in the mass segment were a bit lower in absolute terms (EUR) than in the case of larger customers. The relative development of revenues in the mass segment compared to the mean values of all other customer groups, shown in Table 4, is particularly interesting.

(47) Revenues from households or the small-scale industry have been stable or even risen slightly over time, while revenues from “others” have declined sharply since 2010. The main driver for this change was the development in the segment with an annual consumption > 4 GWh. Regarding this aspect, the high standard deviation should be noted, as a (small) number of companies reported lower revenues for the customer segment with higher consumption, while others continuously showed much higher revenues (in EUR/MWh). Despite the large variance of the sample, a structural change over time can be ascertained. It corresponds to the previous price analyses conducted by E-Control, such as the industrial price survey or the price monitor for households, which show that larger industrial companies were more likely to benefit from falling wholesale prices. The gap between revenues in the mass segment and the larger customer group (“others”) has subsequently increased steadily and amounted to almost 12 EUR/MWh in 2012.

Table 4

Revenues: mass segment minus “others” [EUR/MWh]					
	2008	2009	2010	2011	2012
Mean	2.12	-0.93	4.12	8.78	11.92
Standard deviation	5.55	7.60	8.60	8.78	8.22

Source: E-Control supply probe 2014

Notes: unweighted arithmetic mean and standard deviation. Extreme outliers were removed.

(48) *Procurement costs.* – Procurement costs, which were inquired about in relatively great detail, rose at the beginning of the sample period but dropped from 2010 in line with the price decline on the wholesale market. Table 5 shows this development for the individual customer groups, also revealing that the differences among customer groups are only minor. The deviations between the large-scale industry group (annual con-

sumption > 4 GWh) and households and the small-scale industry (annual consumption ≤ 0.1 GWh) were higher in years when prices on the wholesale markets were very volatile, namely in 2009 and 2010. In 2012, the difference between the procurement costs for households and the small-scale industry on the one hand and the large-scale industry on the other hand again dropped to 1.62 EUR/MWh. The procurement costs of the mid-sized customer segments generally range between those of the mass and large-scale industry segments.

Table 5

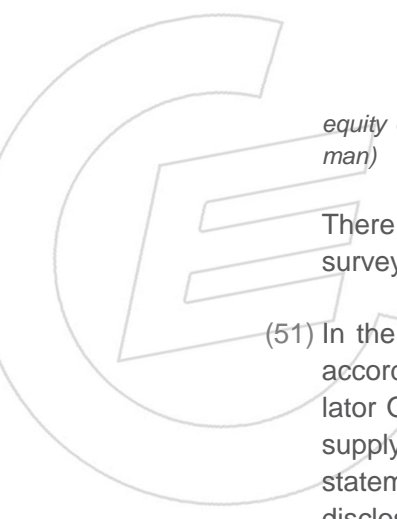
Procurement costs according to customer group [EUR/MWh]					
	2008	2009	2010	2011	2012
Annual consumption ≤ 0.1 GWh	64.07	69.69	71.61	67.89	61.71
0.1 < annual consumption ≤ 1 GWh	64.66	71.22	69.74	66.28	60.79
1 < annual consumption ≤ 4 GWh	64.48	70.29	69.18	66.68	60.44
Annual consumption > 4 GWh	63.29	72.29	68.67	65.33	60.09
Difference: mass segment – large-scale industry	0.77	-2.61	2.94	2.56	1.62

Source: E-Control supply probe 2014

Notes: unweighted arithmetic mean. Extreme outliers were removed.

- (49) To enable comparison with the margin calculations by E-Control, the reported procurement costs must be reduced by the costs for green electricity provided by OeMAG, the Austrian green electricity clearing and settlement agent. This reduces the difference between the scenarios calculated by E-Control using the GSME model by 4-6 EUR/MWh. It is striking, however, that the actual procurement costs over the observed time period were much less volatile than those in the scenarios calculated by E-Control. This could partly be attributed to the fact that the unweighted mean of the procurement costs of small businesses, which are partially still based on full-supply contracts⁹ or off-market procurement, are equally considered in the survey and affect the mean. The detailed evaluation shows, however, that few companies take a long-term approach when it comes to procurement. Very few suppliers reported having purchased volumes three or more years in advance. During the observation period, procurement was mainly effected the same year as delivery or one to two years prior to it. This is consistent with the assumptions of the E-Control model. Other cost components, such as guarantees of origin or balancing energy, seem to play only a minor role. For E-Control's model, this implies a need for adaptation, either in the modelling itself or in the interpretation of results, e.g. as scenarios for procurement "close to the exchange".
- (50) *Retail costs.* – While E-Control already employed a model-based approach to assess procurement costs in the past, we did not have any information on retail costs, which were defined in this supply probe as:

"[...] all expenses incurred in marketing in the respective customer segment such as personnel costs, IT, overheads and expenses for bonus programmes. Retail costs are to be indicated without costs of



equity or any financial expenses.” (E-Control supply probe 2014, survey form, translated from German)

There are, however, some international empirical values and publications on margin surveys in electricity supply, which will briefly be discussed hereinafter.

- (51) In the UK, the six largest suppliers have published their annual financial statements according to specific guidelines established by British gas and electricity market regulator Ofgem since 2009^f. The electricity and gas segments as well as generation and supply have to be presented separately in these annual consolidated segmental statements (CSS). The profits, costs and revenues of these six largest suppliers are disclosed on a non-anonymous basis. Ofgem stated on this matter:

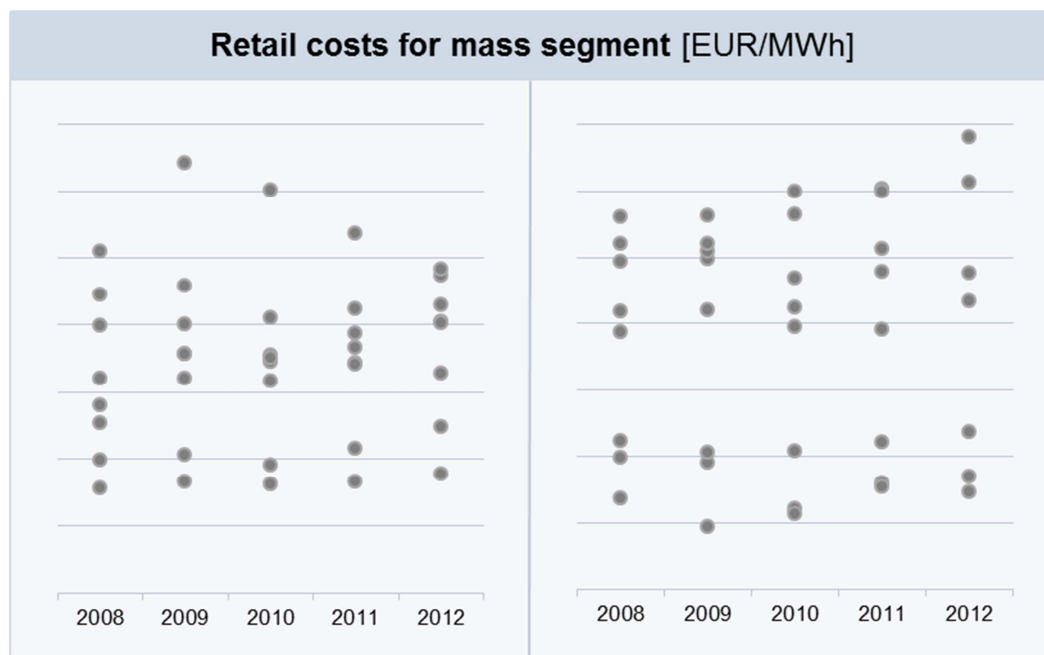
“To make the market clearer, since 2009 we’ve required suppliers to produce an annual consolidated statement (CSS) to show the costs, revenues and profits for the different segments of their generation and supply businesses. We’re leading the way in making this information easily available to consumers.” (Ofgem 2014)^g

- (52) The costs are also divided into individual components, namely wholesale (procurement) costs, network costs, environmental/social costs, such as costs for feed-in tariffs, and operating (indirect) costs; however, the definitions of the various costs do not correspond exactly to the definitions of the present supply probe. E.g. operating costs in the UK include all costs for metering, which are considered part of the network costs in Austria. Nevertheless, taking a look at the Ofgem analysis is definitely worthwhile. The margins^t in the UK vary strongly among different companies and business segments. Overall, the net margins for electricity in the mass segment amounted to 1.9% in 2012, the margins of “others” (annual consumption $\geq 100,000$ kWh) were slightly lower^u. The fixed costs for an average household with an annual consumption of close to 4,000 kWh amount to around EUR 90 per year (Ofgem 2013). These costs, however, included costs-to-serve (i.e. retail costs in the narrower sense of the word, such as billing costs) as well as costs-to-acquire (e.g. advertising), which can vary quite substantially according to the levels of competition (VaasaETT 2014). In a market with high switching rates, such as the UK, the costs for acquiring and retaining a customer are higher than in a market where the rate of switching is less prevalent. It is notable that the 2012 (and also 2013) margins in the UK were barely distinguishable in both customer groups, while the margins for larger customers were noticeably higher between 2009 and 2011.

- (53) An analysis of VaasaETT (2014) that deals with the structure of retail costs shows that the costs-to-serve in Europe amount to an average of EUR 63 per year (ranging between EUR 30-97 per year), while acquisition costs account for up to EUR 80. These costs are, however, spread across the contract period, i.e. they carry less weight in case of a low switching rate or a lower level of competition. An analysis of margins in company-specific case studies by VaasaETT shows that in most countries companies achieve a long-term net margin of 5% of a typical household bill.

(54) In this supply probe for Austria, the analysis of retail costs exhibits considerable differences (based on EUR/MWh, hereinafter referred to as “unit costs”) even after the removal of extreme outliers in the mass segment. The arithmetic mean is therefore of little informative value. Also, the minimum and maximum levels found for individual years vary greatly, with the difference increasing over the course of time. Figure 2 displays the unit costs per year. To allow for a conditional correlation between company size and unit costs arising from economies of scale, the companies were divided into two groups. The figure on the left-hand side represents companies with higher sales volumes in the relevant customer group, while the figure on the right depicts companies with a lower sales volume. The figures clearly indicate that there is no systematic correlation between company size and retail costs per MWh supplied, neither in the evaluation according to company nor according to year. Such correlation was not found in the overall analysis either, which is not reproduced here. As expected, in terms of unit costs it holds true for all customer groups that the retail costs in EUR/MWh are lower for customer groups with higher consumption. Even in the group with an annual consumption between 0.1 and 1 GWh, there is a substantial difference in retail costs in EUR/MWh compared to the mass segment with a consumption of less than 0.1 GWh.

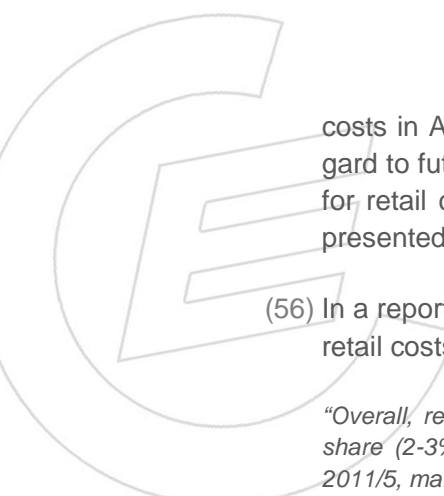
Fig. 2



Source: E-Control supply probe 2014

Note: the retail costs for the mass segment in EUR/MWh are plotted on the y-axis. The companies were divided into two size categories according to sales volume. Companies with higher sales volumes are depicted on the left, smaller businesses are on the right; the axis scaling is the same for both categories. The figure shows only an excerpt to rule out that conclusions about individual companies can be drawn.

(55) For the mass segment, a representation of costs per customer per year, i.e. in euro per metering point, is suitable. Also in this aspect, the calculated mean is strongly influenced by individual data points and there is high variance within the sample. To summarise, it is difficult to make a representative statement for Austria with regard to retail costs across all customer segments. A comparison with experiences in other countries is therefore also very hard to make. However, it does not seem as if retail



costs in Austria are overall higher than in the internationally observed range. With regard to future adjustments of the margin calculation by E-Control, only possible ranges for retail costs can be established due to the high variance. A first approach will be presented in sub-section 3.4.

(56) In a report on two Austrian energy providers, the Austrian Court of Audit^v comments on retail costs as follows:

“Overall, retail costs in the mass customer segment of both companies amounted to only a small share (2-3%) of overall retail costs between 2007 and 2009.” (Austrian Court of Audit, Salzburg 2011/5, margin number 13.1, p. 234, quote translated from German).

In the present E-Control supply probe, however, the retail costs for the customer group with an annual consumption of $\leq 100,000$ kWh account for almost two thirds of the total retail costs across all companies in the sample. It has to be noted, however, that the Court of Audit’s statement presumably refers to the specific organisational unit of sales, which is responsible for price management and adjustment, product design and customer service (ibid.). It can thus be assumed that E-Control’s definition of retail costs applied in the present supply probe is much broader so that the survey’s results cannot be directly compared to the results of the Court of Audit report.

(57) *Margins.* – The high variance in the reported retail costs is ultimately also a crucial driver of the margin development. In the supply probe, the margins were defined as:

$$\text{Net margin} = \frac{(\text{Revenues} - \text{Costs})}{\text{Revenues}} \cdot 100$$

In this formula, revenues and costs cover the overall revenues and costs of each customer group, respectively. The analysis of the mean and the standard deviation in Table 6 shows that the margins for 2008 to 2010 were negative and rose to a mean of 7% in the mass segment in 2012. As was the case for retail costs, it is striking that there is substantial variance within the sample, which greatly reduces the significance of the analysis across all companies. For example, the average margin for the customer group with an annual consumption of $\leq 100,000$ kWh in 2009 amounted to -8.6%, but the standard deviation exceeded 15%. In an international comparison (cf. paragraph (51) et seq.), some individual analyses show very high margins, especially for the year 2012.

Table 6

Margins: according to customer groups [%]

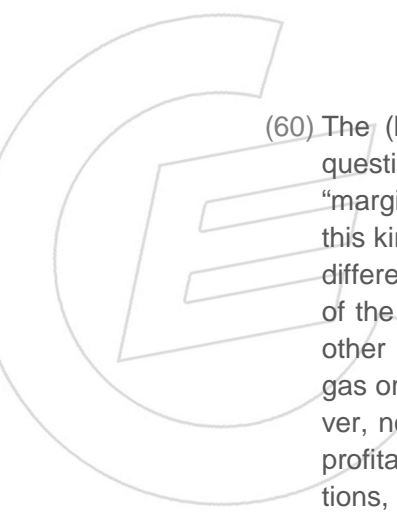
	2008	2009	2010	2011	2012
Annual consumption ≤ 0.1 GWh	-4.4 (9.7)	-8.6 (15.3)	-7.0 (12.7)	0.7 (9.8)	7.0 (7.1)
0.1 < annual consumption ≤ 1 GWh	-0.1 (6.7)	0.5 (7.3)	-0.3 (5.8)	1.8 (5.7)	4.6 (4.9)
Annual consumption > 0.1 GWh	-0.7 (4.9)	-1.3 (4.4)	-1.1 (4.7)	0.2 (3.4)	1.7 (3.3)

Source: E-Control supply probe 2014

Notes: unweighted arithmetic mean and, in brackets, standard deviation. Extreme outliers were removed.

(58) An analysis of the individual customer groups reveals that the margins for the medium-sized and large-scale industries are less volatile and that the maximums during the individual observation years are also by far lower than in the mass segment. It is particularly interesting to take a look at the group closest to the mass segment, with an annual consumption between 0.1 GWh and 1 GWh, whose margins already show much less fluctuation. Generally speaking, two different interpretations are conceivable. Firstly, the mass segment is less contested than the customer group of industrial consumers. In 2008, the switching rate within the large-scale industry amounted to just over 15%, probably also as a reaction to the strong rise in wholesale prices during this time. In other years, the switching rate was lower, but ever since the start of liberalisation industrial consumers' willingness to switch has been sending a clear signal to suppliers about their sensitivity to price increases. As discussed in paragraph (29) et seq., this is not the case in the mass segment and therefore competition was low between 2008 and 2012. Secondly, a certain ambiguity in cost allocation to customer groups cannot be avoided, especially when it comes to retail costs, as many types of costs are incurred for all customer groups together. This can also lead to a distortion of margins across customer groups. Irrespective of the reason, it is remarkable that the margins in the mass segment reached up to 19%, while the margins in the large-scale industry did not go beyond single-digit percentages.

(59) The margins for the individual companies and customer groups thus vary considerably and there are especially big differences from company to company in terms of retail costs which cannot be explained by economies of scale (i.e. sales volumes). For the time being and based on the data collected within the supply probe for the sample period of 2008 to 2012, there are no strong indications that would imply the need for anti-trust action regarding excessive prices. It has to be stressed, however, that especially the margins reported for individual companies in 2012 seem very high. This might be justified for a limited period of time as compensation for the negative development in the years 2009/2010, but we will have to observe closely whether prices and margins will return to levels that correspond to the fundamental data in the future (see Outlook, sub-section 3.4). In a market with functioning competition, such a development would hardly be possible as high margins would be forced down by price competition or new market entrants.



(60) The (highly) negative margins seen in individual companies also raise substantive questions and issues of competition law. Considering the economic return on sales or “margin”, e.g. based on EBIT, operating profit or annual surplus^w, the mean shows that this kind of negative margins is not evident across entire companies. Though there are differences among companies, the picture is much more homogeneous than the data of the supply probe. Different definitions are surely a factor in this case, but even so, other business segments, such as electricity generation, or other products, such as gas or district heating, seem to be much more profitable than electricity supply. Moreover, none of the business indicators of the companies reflected the strongly negative profitability found in electricity supply. In this field, the supply probe raises new questions, which would in turn require a more in-depth investigation, including into potential dominant positions and market definition. Therefore no concluding evaluation can be given at this point. An outlook and an outline of the planned course of action can be found in sub-section 3.4.

(61) To conclude, also the situation of companies with larger generation divisions (hereinafter referred to as “producers”) is discussed. On principle the company’s costs of production were included in the procurement costs, provided that they were valued at market prices. This actually constitutes an opportunity costs approach, which deviates from the other approaches used for retail costs and procurement costs, where actual expenses were used. Costs of procurement via internal transfer prices that do not correspond to market conditions were separately surveyed, but the data reported for the sample period were not relevant. Analysing the economic key figures (see Note w) for producers, e.g. EBIT, it is apparent that their profitability was comparably high, but that they posted highly negative margins (-20 to -50%) for electricity supply in the supply probe. The obvious conclusion is that a part of the yield in the generation division was passed on to customers in the form of lower prices. Moreover, this opportunity cost approach leads to distortions in the analysis as the intra-group strategies of profit allocation to individual divisions play a crucial role. In a competitive market, it would not be possible to allocate high opportunity costs to a (more or less) independent distribution division, as these would significantly put it at a disadvantage compared to competing or newly establishing suppliers.

(62) For this reason, the concerned companies were not considered in the following evaluation. The margin results, excluding the observations for these producers, are displayed in Table 7. The crisis years of 2010 and 2011 are still noticeable, but in this representation also the strong increase in margins in 2011 and 2012 to levels that can internationally be considered relatively high is apparent. Despite the further reduction of the sample, the standard deviation continues to be substantial, especially in the years 2009 to 2011. The reason for the high variance in these years could retrospectively be the unfavourable procurement strategy of individual companies at the beginning or just before the financial crisis.

Table 7

Margins without producers [%]					
	2008	2009	2010	2011	2012
Annual consumption ≤ 0.1 GWh	2.1 (3.3)	-0.1 (6.2)	-0.2 (7.1)	6.5 (6.5)	11.8 (4.2)
Annual consumption > 0.1 GWh	-0.3 (5.3)	-1.2 (4.9)	-1.6 (4.9)	0.3 (3.6)	1.1 (2.6)

Source: E-Control supply probe 2014

Notes: unweighted arithmetic mean and, in brackets, standard deviation. Extreme outliers were removed. Also companies which posted strongly negative margins in individual years during the supply probe period but reported positive results overall were removed (see paragraph (61)).

3.3 Additional expenses for green electricity

(63) In 2010, the Austrian Federal Competition Authority published an audit report on the practice of energy suppliers of disclosing surcharges for green electricity (Federal Competition Authority 2010). While E-Control does not intend to reopen the discussion of this issue with this supply probe^x, the audit report is relevant insofar as there is a direct material connection between procurement costs and additional expenses for green electricity, which is why the Competition Authority also inquired about procurement costs for its report. As two of the years investigated overlap with the sample period of this supply probe, the data the Competition Authority inquired are generally very relevant. In its analyses of procurement costs “the (unweighted) arithmetic mean is used” (ibid. p. 12). The audit report further states:

“...those 19 companies that are listed in the green electricity report 2009 and make up a substantial part of the Austrian retail market.” (ibid. p. 6, quote translated from German)

“A qualitative analysis shows that the major market participants are included here; as a result the market share covered by these companies is noticeably larger. Thus, the statements made in this report can be considered representative.” (ibid., footnote on p. 7, quote translated from German)

(64) As the sample of E-Control covers around 90% of volumes delivered to consumers in Austria (base year 2012), we can assume that the sample of the present supply probe is representative also. Table 8, shown below, compares the procurement costs of the Federal Competition Authority’s report to the data obtained from this supply probe. Only the costs for the mass segment are taken into account, as the large-scale industry would have to be considered separately with regard to additional expenses for green electricity and it has to be assumed that the Competition Authority’s report (2010) did not collect data on procurement costs for the large-scale industry. The line ECG market price refers to an evaluation that was provided by E-Control back then^y based on the market price according to section 20 *Ökostromgesetz* (Green Electricity Act).

Table 8

Competition Authority audit report (2010) in comparison to supply probe [EUR/MWh]		
	2008	2009
Audit report procurement costs	53.51 (2.55)	57.65 (3.13)
Procurement costs without OeMAG, mass segment (supply probe)	59.98 (3.00)	66.42 (4.94)
ECG market price in audit report (2010)	64.60	58.30
Difference (supply probe – audit report)	6.47	8.77

Source: BWB (2010), E-Control supply probe 2014

Notes: unweighted arithmetic mean and, in brackets, standard deviation. Extreme outliers were removed from E-Control's sample.

- (65) The analysis reveals that there are significant differences between the Competition Authority's audit report (2010) and the supply probe carried out by E-Control. The procurement costs reported for the mass segment in the supply probe are about 6.5 EUR/MWh in 2008 and 8.8 EUR/MWh in 2009 above the values of the audit report (2010), which equals 12 and 15%, respectively. Including the extreme outliers in E-Control's sample, the difference would be even higher. It is also striking that even though the market price calculated by E-Control in 2008 was below the actual procurement costs, the procurement costs jumped in 2009. Since the market price is only based on quarterly futures, this fact could only be explained by a rather long-term procurement strategy, even if long-term strategies tend to be the exception (see also discussion in paragraph (49)).
- (66) Only tentative conclusions can be drawn as to the reasons for the difference in procurement costs in the 2010 Competition Authority audit report and the present supply probe. To a certain degree, the difference could be explained by the size of the sample, which is not explicitly stated in the 2010 audit report, or the definition of procurement costs. It is unclear to what extent the model of the Association of Austrian Electricity Companies (VEÖ) was used for the calculation of additional expenses², which uses EEX settlement base prices, but does not explicitly take into account structuring costs during the year, such as for spot market procurement, or other energy procurement costs, such as brokerage fees. However, these costs are accounted for in the present supply probe and different definitions of procurement costs^{aa} would thus be a possible explanation for the discrepancy. Also, the 2010 audit report states that the VEÖ model was individually adjusted by the suppliers to adequately represent the significance of the allocated green electricity volume. Moreover, in the tables in the audit report mention the "actual procurement costs of the companies" (ibid. p. 12).
- (67) The costs for balancing energy and guarantees of origin constitute another factor of uncertainty; these costs were in principle also regarded as procurement costs in E-Control's supply probe. A detailed data evaluation, however, shows that these costs, which were also separately inquired by E-Control, are insignificant in size and that balancing energy costs for individual years took on negative values and were thus included as revenues. It can be ruled out with a high degree of certainty that balancing ener-


gy or guarantees of origin would lead to a distortion across the entire sample in the range of 12–15%.

(68) Ultimately, the connection between additional expenses for green electricity and procurement costs may play a role. As presented in the Federal Competition Authority's audit report (2010, p. 7) these two components are in a direct inverse relationship: high additional expenses imply low procurement costs and vice versa. As the survey back then aimed at establishing whether the additional expenses passed on to consumers were too high, an "informal consultation" (ibid. p. 6) inquiring about procurement costs (see paragraph (66)), which are difficult to define for any authority, would undoubtedly contain an incentive to calculate correspondingly. In this connection, E-Control asked the Competition Authority in late March 2014 for access to the reported raw data of the companies according to section 2(1)(4) in conjunction with section 10 *Wettbewerbsgesetz* (Competition Act) and section 35 E-Control Act. This request was declined by the Federal Competition Authority in April 2014, referring to the voluntariness and confidentiality of the data submitted at that time. Without knowledge of the exact questions or the data per company from the 2010 audit report, E-Control is not in a position to give a non-speculative assessment or carry out an extensive analysis. The question concerning the reason for the differences in procurement costs thus has to remain unanswered in the present supply probe.

3.4 Outlook

(69) The last sub-section of this report briefly discusses the evolution since late 2012 as well as current developments. The prices on the consumer market have exhibited a downward trend in this time period and the annual average dropped by about 4% between 2012 and 2014. This development was at least partially due to the change in the financing mechanism for additional expenses for green electricity between 2012 and 2013 (see market report 2013, p. 34). Due to the abolishment of these additional expenses for suppliers, there was a one-off reduction of procurement costs in this period. Figure 3 on p. 33 shows that this change took effect across Austria in mid-2012, though with much variation among suppliers^{bb}. For industrial consumers, prices dropped by 14.7% (for companies with an annual consumption < 10 GWh) and 16.2% (for companies with an annual consumption > 10 GWh) in the same time period and thus continued to mirror the price development on the wholesale market. As the annual contracts for 2015 and 2016 have for some time been traded at 35 EUR/MWh for baseload and 44 EUR/MWh for peak load, it is to be expected that this trend for the large industry will continue next year.

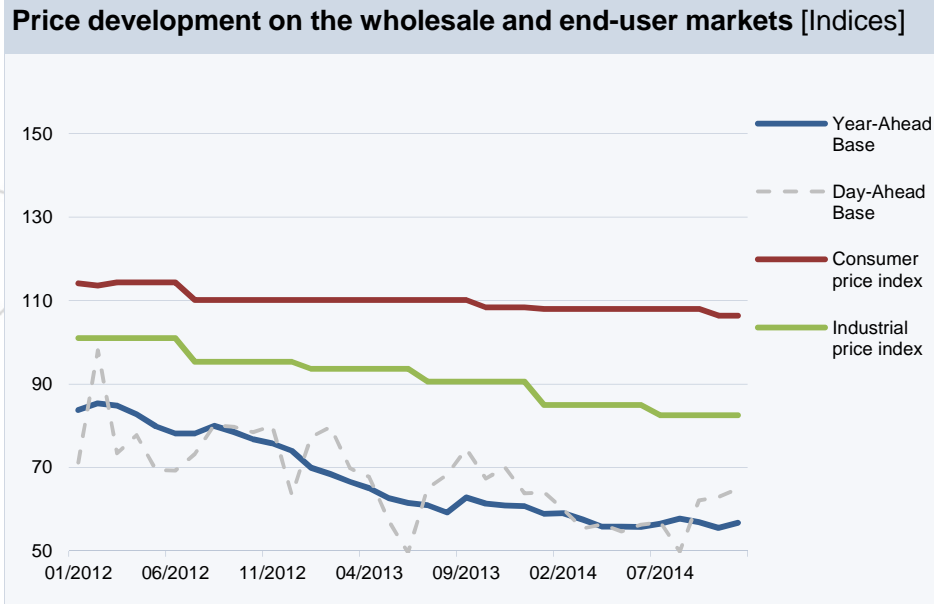
(70) The supply probe has shown that it is difficult to model the consumer prices in the mass segment based on the wholesale prices across Austria. Even if some suppliers procure closer to the market, there was quite some difference among the individual companies. Overall, a downwards trend in procurement costs was observed at least for 2011 and 2012 (Table 5). A first estimate, shown in Figure 4, thus assumes that the



procurement costs for households and small businesses have declined further compared to 2012, also due to the effect of the revised financing mechanism for green electricity. Given the results of the supply probe, it is, however, assumed that this decline is much smaller than the price drop on the wholesale market. Retail costs for the mass segment within Austria and also on an international level vary greatly. Therefore, the overall costs corridor shown in Figure 4 is relatively broad. But even this highly conservative estimate clearly reveals that the gap between the corridor and the consumer price index has widened since 2012, and that two-digit net margins could be achieved. Compared to international experiences and the margins observed in the industry customers segment, these margins appear very high. At the same time, there are indications that also in 2013 and 2014 strong company-specific variations in procurement and retail costs will persist.

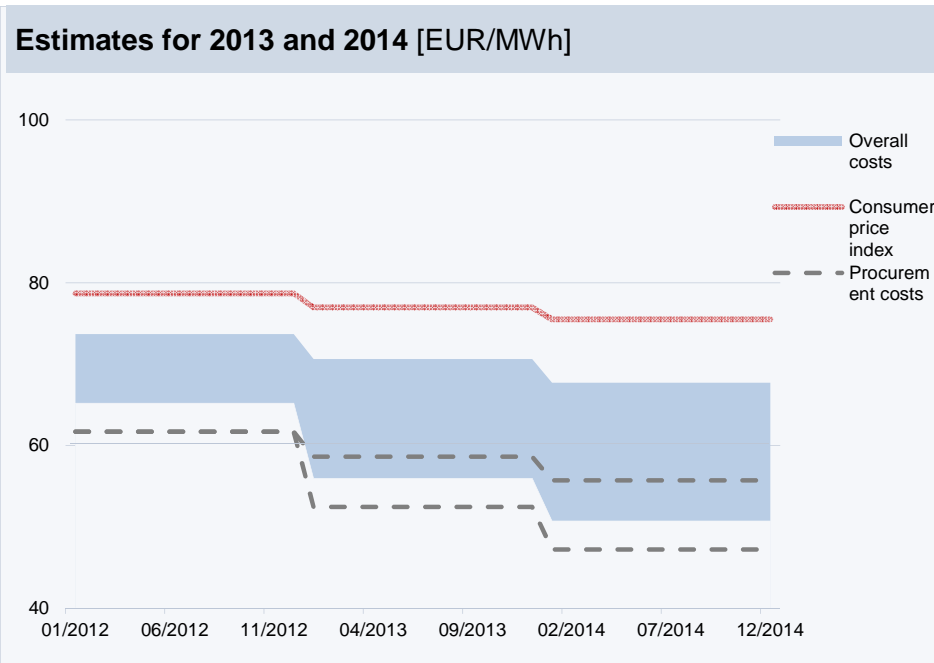
- (71) It is thus all the more relevant to inform consumers about their possibilities in a liberalised energy market, especially with regard to supplier switching. In the past two years, due to falling wholesale prices some suppliers were able to offer significantly lower prices than the incumbents.^{cc} E-Control will continue to fulfil its task, stipulated by the Austrian lawmaker, of monitoring price developments, especially of market players with a dominant position. In doing so, we will be on the lookout for excessive pricing, predatory pricing and sales below acquisition prices. Carrying out the present supply probe has shown that the data collection process per se is very time-consuming and competition law cases can take many years to be resolved. Switching suppliers, however, usually only takes a couple of weeks and appears very reasonable especially against the backdrop of this survey's findings, which highlighted substantial cost and price differences among suppliers. It is clear that efforts to provide information and to assure consumers that supplier switching is nothing to be afraid of must continue. Propelled by a collective switching campaign organised by the Austrian consumers association VKI, households proved more willing to switch suppliers in 2014. This is a very favourable development not least because both international comparisons and Austrian experience in the industry customers segment prove that a "critical" mass of consumers willing to switch suppliers increases competitive pressure for all market players. And in the long run, this will translate into lower prices for all consumers.

Fig. 3



Source: EEX, EPEX, calculations by E-Control
 Note: wholesale prices refer to the respective monthly arithmetic mean. The consumer price index refers to a typical household with an annual consumption of 3,500 kWh. The industrial price index is based on E-Control's industrial price survey.

Fig. 4



Source: E-Control supply probe 2014, calculations by E-Control
 Notes: the consumer price index in EUR/MWh refers to a typical household with an annual consumption of 3,500 kWh. To enhance comparability, the annual average was used. For 2012, the procurement costs and the overall costs corridor data were taken from the unweighted means stated in the supply probe. E-Control used estimates for 2013 and 2014 to predict the possible development of procurement and overall costs (also including all retail costs).

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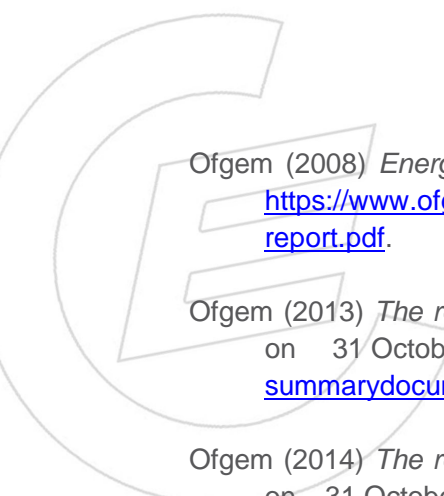
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Notes

- ^a When commodities, especially electricity, are concerned, the definition of a *single* wholesale price or wholesale price index is anything but trivial. Electrical energy for the delivery area Austria/Germany is traded on different venues and with different time frames (see E-Control Working Paper No. 02/2014 <http://www.e-control.at/portal/page/portal/medienbibliothek/projekte/dokumente/pdfs/Working%20Paper%20-%20Short-Term%20Physical%20Electricity%20Trading%20in%20Austria.pdf>). The statement made in this report, namely that wholesale prices experienced a significant drop between 2008 and 2012, is also corroborated by a survey of the prices at the futures markets, different base/peak mixes, various indices such as the Austrian Electricity Price Index of the Austrian Energy Agency, the market price according to section 41 *Ökostromgesetz* (Green Electricity Act) 2012 (<http://www.e-control.at/en/businesses/renewables/renewable-electricity-market/current-market-price>) as well as the OTC prices surveyed by price reporters. Extensive information on price developments can be found in various E-Control publications, such as the Quarterly <http://www.e-control.at/de/statistik/quarterly> (in German) or the annual statistics reports <http://www.e-control.at/en/publications/key-statistics>.
- ^b The values refer to the arithmetic mean of the German and Austrian (Phelix) day-ahead base index of the EEX Power Spot or, from September 2009, the EPEX SPOT, i.e. the mean observed over all hours of the respective calendar year.
- ^c Consumer prices can only be defined to a limited extent as well. This is why Eurostat publishes prices for different consumption bands. The values used here refer to analyses in E-Control's Quarterly, e.g. Quarterly Vol. II 2014, p. 8 (<http://www.e-control.at/portal/page/portal/medienbibliothek/statistik/dokumente/pdfs/e-control-quarterly-2-2014.pdf>, in German).
- ^d The Pearson's correlation coefficient of the consumer price index was -0.53 compared to the day-ahead base index, -0.61 compared to the day-ahead peak index, -0.66 compared to the year-ahead base index, -0.78 compared to the year-ahead peak index and -0.54 compared to the Austrian Electricity Price Index of the Austrian Energy Agency.
- ^e To ensure consistency, the arithmetic mean over both half years of the industrial price survey for industrial customers was calculated based on an annual consumption of more than 10 GWh, without consideration of full-load hours (<http://www.e-control.at/de/industrie/strom/strompreis/industriestrompreise>, in German). The reduction was slightly lower at -3.82% in the group with an annual consumption of less than 10 GWh.
- ^f See Market Monitoring Report of the Agency for the Cooperation of Energy Regulators, p. 60 seqq.: http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ACER_Market_Monitoring_Report_2014.pdf.
- ^g At the time of contract conclusion, the supplier procures the quantities agreed upon. This procedure serves to minimise risks. For more, see: <http://www.energiemarktplatz.de/energieeinkauf/glossar/Back-to-Back?entryId=35> (in German).
- ^h Also see statistics on consumer structure: <http://www.e-control.at/de/statistik/strom/marktstatistik/verbraucherstruktur> (in German).
- ⁱ Available at: <http://www.e-control.at/portal/page/portal/medienbibliothek/presse/dokumente/pdfs/10-y-liberalisation-english.pdf>.
- ^j Switching rates are part of the market statistics (broken down into all of Austria or larger network areas): http://www.e-control.at/de/statistik/strom/marktstatistik/verbraucherverhalten_versorgerwechsel (in German).
- ^k Data and methods are published in E-Control's price monitor. An evaluation of different months of the same sample period provides similar results. One exception is the period from July to December 2010, where the maximum saving potential was approximately EUR 60 per year. See: <http://www.e-control.at/de/konsumenten/strom/strompreis/strompreis-monitor/strompreis-monitor-archiv> (in German).
- ^l A number of articles and studies have been published on switching behaviour in the final customer sector for electricity and natural gas. For experiences in Sweden, see Ek & Söderholm (2008), for an analysis of consumer behaviour Watson, Viney & Schomaker (2002), as well as a series of studies by the British regulatory authority, e.g. Ofgem (2008), p. 167 seqq. For publications in German, see Zinnbauer, Bakay & Rennhak (2004) on switching behaviour as a generational question, or Galus & Schwabe (2008) for a comparison between Germany and the UK.
- ^m For the market statistics, see <http://www.e-control.at/de/statistik/strom/marktstatistik/stromboersen> (in German).
- ⁿ In industrial economics, market power is understood as the ability of a company to set prices above the competitive level over the long term, see e.g. Niels et al. (2011) or Perloff et al. (2007). From a practical point of view, the relevant competitive price level is extremely hard to determine (dynamic v. static models and benefits from innovation) and to measure (economic cost concepts usually do not have an equivalent in accounting). This is why in decision-making processes, usually market shares or entry barriers are considered for the evaluation of market power. Bergman et al. (2005) offer an econometric analysis of the decision-making practices of the European Commission.
- ^o Both economists and legal experts have dealt with the topic of market power and abuse of a dominant position extensively. Examples include Motta (2004) and Perloff et al. (2007) and, for the legal context, Petsche et al. (2007), Reidlinger & Hartung (2014) as well as Langen & Bunte (2014). When it comes to case law in the context of market power and excessive prices, there are only a small number of relevant cases. *United Brands v. Commission* (Case 27/76 [1978]), *Deutsche Post II* (OJ [2001] L 331/40), *Napp Pharmaceuticals Holdings Ltd.* (Case CA98/2/2001) in the UK, or *Österreichische Post AG* (OGH 16 Ok 14/03) in Austria are especially relevant.

^p The load profiles can be found at <http://www.apcs.at/de/clearing/technisches-clearing/lastprofile> (in German).

^q The procurement costs of full-supply contracts also distort the detailed evaluation in so far as the costs can only be assigned to a certain delivery year, but other costs such as other energy procurement costs and costs for balancing energy and guarantees of origin are already included in these procurement costs.

^r In contrast to Austria, the UK regulator issues licences. For the six largest suppliers, Ofgem specifically defines guidelines on the publication of these data as part of the licence terms.

^s Ofgem website, retrieved on 31 October 2014: <https://www.ofgem.gov.uk/electricity/retail-market/monitoring-data-and-statistics/understanding-profits-big-energy-suppliers>, see also the respective PDF documents, e.g. 2013: <https://www.ofgem.gov.uk/publications-and-updates/revenues-costs-and-profits-large-energy-companies-2013>. The respective annual financial statements of the companies are also available: <https://www.ofgem.gov.uk/ofgem-publications/89139/energycompaniespublish2013consolidatedsegmentalstatements.pdf>.

^t Ofgem identifies this as profit, which in turn is defined as EBIT (Earnings Before Interest and Taxes) (Ofgem 2014, p. 45).

^u As expected, there is a high degree of variance as this is the mean calculated for six companies. While some companies have negative margins for the partial segment of electricity supply, others report a margin of 5% or more in their balance sheets.

^v It is pointed out explicitly that the report by the Austrian Court of Audit regarding the market probe is relevant as it is one of the few publicly available sources that address retail costs in Austria.

^w For the calculation of the various indicators on return of sales, the extracts of the respective commercial registers or financial statements etc. were used.

^x A renewed discussion of this topic would also be problematic as it would constitute a comparison of ex post v. ex ante facts, which would be admissible only to a limited extent. See also p. 10 et seq. in Federal Competition Authority (2010).

^y At the time when the Austrian Federal Competition Authority carried out its survey, ECG was a common abbreviation used for E-Control GmbH. When the organisation became Energie-Control Austria (E-Control), a public authority responsible for the regulation of the electricity and natural gas industries according to the *E-Control-Gesetz* (E-Control Act) 2010, the abbreviation ECG became obsolete.

^z E-Control also received this model from VEÖ (today called Österreichs Energie) – which are actually calculation recommendations for different procurement strategies – in the course of the evaluation for the green electricity report 2009. It basically consists of documents that contain proposals on calculation methods for additional expenses, based on different procurement methods.

^{aa} E-Control's survey form defined procurement costs as follows: "Procurement expenses' are solely all material costs which are incurred by the procurement of electric energy for the respective customer group, including balancing energy, brokerage fees or green electricity." Detailed information on the individual components were, at least in part, inquired separately.

^{bb} On this topic, see press release from 10 September 2012, available at: http://www.e-control.at/portal/page/portal/medienbibliothek/presse/dokumente/pdfs/PA_05-09_Untersuchung_%C3%96kostrom_FINAL.pdf (in German).

^{cc} Current savings potentials in the various network areas can be looked up in E-Control's price monitor: <http://www.e-control.at/en/consumers/electricity/electricity-prices/electricity-price-monitor>.