

Amelung, Torsten

Preprint

Competition in the German Electricity Retail Business: Innovation and Growth Strategies

Suggested Citation: Amelung, Torsten (2020) : Competition in the German Electricity Retail Business: Innovation and Growth Strategies, ZBW – Leibniz Information Centre for Economics, Kiel, Hamburg

This Version is available at:

<http://hdl.handle.net/10419/224983>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

Competition in the German Electricity Retail Business: Innovation and Growth Strategies

October 2019

Torsten Amelung

CEO of SUMMIQ AG, Munich, Germany and
Senior Lecturer at the University of Cologne, Department of Business Administration

Address: Rochusstrasse 41, 40479 Dusseldorf, Germany;
torsten.amelung@gmail.com; cell: +49 163 430 1243

Acknowledgements

This paper is based on a presentation that the author gave on Dec. 18, 2018 at the Faculty of Economics and Business Administration of the University of Applied Sciences in Biberach Germany. Valuable input to this paper has been derived from author's work as member of the Board and Managing Director of enQu AG in Berlin from 2017 – April 2019 and the authors work with TXU Europe serving as a Managing Director of the German operations from 2000 - 2003. The author is grateful for the learning and the experience that resulted from the co-operation with my colleagues from TXU and enQu. The author is indebted to Kelley L. Bruner of Metro AG, an international food retail company based in Düsseldorf for providing valuable input that helped to improve the content and the formal aspects of the paper.

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Keywords: short term competition, second-mover-advantage, product versioning, diversification, distributed energy solutions, brand strategy, digitalization, affiliate marketing

Abstract

This paper describes the development of the competition of electricity retail in Europe in general and the situation in Germany in particular. The competition in the retail business has been forcing electricity retailers to spend increasing resources on marketing, sales and customer service. This has led to a fierce competition both especially in Germany as price transparency is quite high. Short-term price adjustments by retail companies are led by behavioral patterns that follow the logic of the prisoner's dilemma. Suppliers view marketing and sales expenditures as a short-term investment, thus weighing costs of winning new customers against the risk that customers might switch again in the medium-run. In order to escape this short-term competitive pressure, an increasing number of retail companies in the German electricity retail market focus on the diversification of their activities by offering new product lines such as distributed energy solutions, services for e-mobility and facility management. Moreover, there is a trend towards investing in the development of a brand to increase customer loyalty.

1. Introduction

Since the beginning of the liberalization of the power markets in Europe, the electricity retail business has become a mature business within the electricity sector. The initial expectations of the retail market liberalization were that retail prices would come down, while service quality and reliability would increase. Yet the development of the electricity retail business has been different across countries. This paper analyses the development of the retail sector in general and gives an overview on the strategies for growth and innovation in the German retail electricity business. The next section will provide an overview on the retail margin development and the price competition in the European electricity supply business. Thereafter, the paper provides an analysis of short-term price competition as well as underlying strategies and the rules that have been evolving in the German electricity retail business. Finally, the fourth section takes a look into the future of electricity retail and gives an overview on the supply options that go beyond those of the traditional retail business.

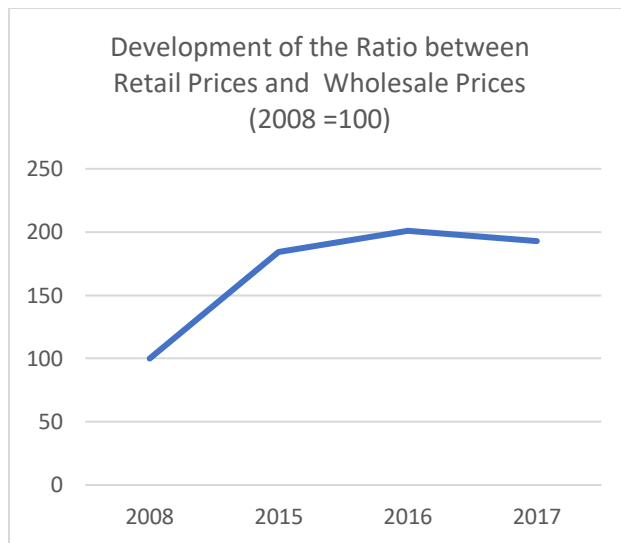
2. Impact of Retail Competition on Prices and Mark-ups in the EU

The first countries that liberalized their electricity retail markets thus allowing for competition were Norway and the UK in the period from 1995 – 2000. Most of the larger countries including Germany followed the Norwegian model that allowed most of the existing utilities to stay in business. In Germany the first round of deregulation in the electricity retail sector started in 1999 leading to the first independent retail companies entering the market with new brands and lower price offers, and thus undercutting the incumbent utilities.

Since then competition and creating a level playing field was supported by regulation both on the level of the European Union and on the national level. This development has led to results which had not been expected at the outset of the liberalization of the retail market. As it can be seen from Figure 1 below, the growth of the EU household final electricity price index in relation to the wholesale power price index increased in the period from 2008 – 2015. Hence, the substantial decreases of the wholesale prices following the liberalization of the generation, trading and retail business seemed to have no effect on the retail prices during that period.

This development seems to be counter-intuitive, as the deregulation in the retail market was expected to foster price competition, it was experienced the wholesale market as well as in the industrial contracts segment. There are however various reasons for this phenomenon. The retail mark-up increased only slightly in the years after 2008 (see ACER, CEER (2018)). The energy component of the retail price even went down, thus following the development of the wholesale market. Yet the decrease was not as strong as the decrease in wholesale prices. There are various reasons for this. In the years after 2008 some countries in Europe took advantage of the fact that taxes and fees on electricity retail sales would not have a major effect on consumption of electricity. Given low price elasticities of demand, governments deliberately increased taxes and other charges on electricity in that period.

Figure 1: Changes of Retail and Wholesale in the EU Electricity Sector



Source: ACER, CEER (2018)

Moreover, the increasing unbundling of the distribution grid from the retail operations allowed quite some margins to move from retail into infrastructure. The initial cost-plus regulation in infrastructure helped the incumbent utilities, of which many were state-owned, to keep their profitability and thus their dividends at the levels which their shareholders were expecting. This led to an issue that was described by Puller and West (2013): according to their analysis imperfect regulation leads to imperfect competition.

It needed additional regulatory fine tuning in the distribution grids to create a level playing field by fostering quasi-competition through revenue caps for grid operators followed by caps on the rates of return. Yet these measures did not decrease retail prices in relation to the wholesale prices in the time after 2015. The reason is that the retail businesses were increasingly viewed as independent profit centers. This can induce the 'Hamster Wheel Problem' which was described by Finncorn (2017). Accordingly, electricity retail companies try to increase the number of customers through marketing campaigns and temporary low price offers for new customers. By doing so retailers hope for higher profits resulting from economies-of-scale. Hence, the suppliers in the retail market increase their spending for customer acquisition and customer retention (= costs-to-compete) either to grow big or stay big. In the fully regulated systems - prior to the liberalization - these costs-to-compete did not exist. Eventually these costs had to be paid fully or partly by the customers depending on the opportunities of cross-subsidization in the case of integrated utilities. This development has been described by a number of studies for different such as Eakin and Faruqi (2000) for the USA, Energie Control (2017) for Austria, Finncorn (2017) for Australia, IPA (2015) for the UK, Machiel and Willems (2012) for Netherlands and Pöyry (2017) for Scandinavia and Finland. The costs-to-compete are higher in those markets with a larger number of suppliers and a high degree of market transparency provided by government-led initiatives or by commercial online platforms delivering price comparisons or brokering new supply contracts for customers.

Given such a level of price transparency, the pricing of electricity in the retail market reveals some characteristics of the "Prisoner's Dilemma" in electricity retail, as described by Ben-David (2018). On the one hand, there is an economic case for more dominant market players or newcomers with deep pockets to increase their customer base and thus benefit from economies-of-scale by offering lower prices. On the other hand, the other market players might be inclined or forced to countervail such

growth strategies by decreasing their prices as well thus undermining the growth strategy of the first movers in such a price war. In the next section, this 'game-theory-approach' for the electricity retail markets is analyzed by taking a look at the price increases in the German electricity market in the fall and winter of 2018.

3. Short-term Price Competition on the German Retail Market in 2018

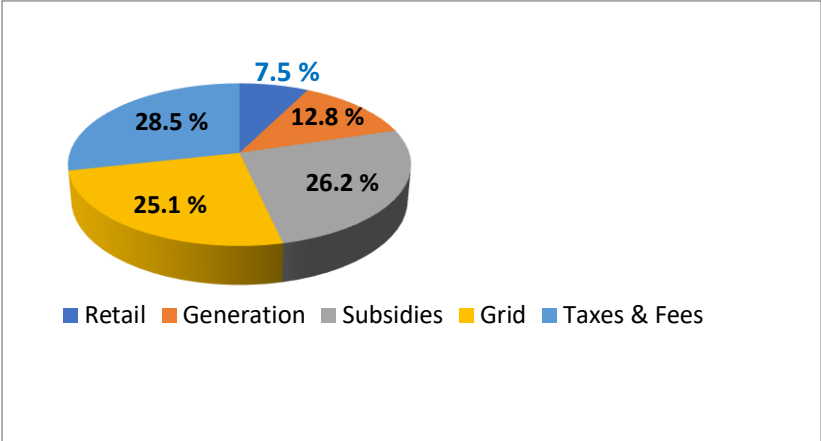
In the short-run the electricity retail market displays some characteristics that limit the strategic choices of electricity retail companies compared to retailers in other sectors. This is due to some attributes of electricity that make the product special.

- Firstly, many customers consider electricity as being quite homogeneous. Given the commodity characteristics of power, the attributes of the product are basically restricted to volume, price, time-of-consumption, location (grid connection) as well as the green attributes or the source of generation, as retail customers are willing to pay an extra amount if the supply can be traced back to a renewable generation plant.
- Price transparency in electricity retail very high. In Germany there are a few dominant commercial online platforms that offer full price transparency all across the country even though the prices are different across the different distribution grid areas. Retail companies in Germany that want to be listed on these platforms have to pay a fee or commission to the online platforms for every new customer that they get through the online platforms. If a customer signs up for a contract period of 2 years, the commission charged would be around 100 EUR per customer in total depending on the respective online platform. This amounts to the average retail margin of a retail company for a household customer for two years.
- The demand of electricity is highly inelastic in the short run. The reason is that the desire to consume electricity is not fulfilling any direct needs or requirements but is rather an input to electric devices for heating, cooling, cleaning, entertainment and lighting. Only large increases of prices would lead to adjustment of demand, but there are no viable substitutes from which the consumers can choose in the short run. Only in the medium-term customers would be able to change their consumption patterns by purchasing new electrical devices that are either more economical or require more electricity in exchange for a lower price or some additional functionality of the equipment. This has been the case in Germany as a result of the high retail prices. The average consumption of households in Germany is around 3000 kWh per year.
- In Germany the payments for the supply of electricity is made in monthly intervals by paying constant amounts that are based on the average consumption of the previous year and not on their current consumption patterns. Most customer segments that rather prefer to pay higher amounts on a monthly basis to make sure that they do not end up with a high deficit and thus a high lump-sum payment at the end of the year. Yet the awareness of the time-of-use as well as the costs of electricity consumption might change in those countries and regions in which smart meters are deployed.
- Especially in Germany, the percentage of the retail margin in the total power costs is fairly small. As shown in the Figure 2 below, only 20 % of the average household electricity price of 29 EURO cents/kWh is due to generation and retail, while the retail part accounts for only 7.5 % of the retail price.

These attributes of household electricity supply as a product and the industry-specific characteristics have two strategic implications for electricity retail companies in the short term. Firstly, marketing activities can grow their market share but not the size of the market. Hence, in the short-term,

marketing activities are a zero-sum-game, while growth of sales can only be realized at the expense of other retail companies. Secondly, all strategies undercutting competitors by a larger margin are not sustainable. As the share of the retail margin in the total is very small, a discount of 10 % on the household electricity price becomes very expensive for the retail company, as it leads to a cross-subsidization of grid costs and other components of the electricity price. Moreover, cutting the retail margin at the order of 10 % and passing this saving as a discount to the customer is not an effective pricing strategy, as this would lead to a reduction of the households' electricity costs of less than one percent. For most customers such a small saving is not enough to motivate them to change the supplier no matter how easy the process is.

Figure 2: Components of the Retail Electricity Price in Germany 2017 (percent)



Sources: Bundesnetzagentur, Monopolkommission (2017), own calculations.

The German electricity retail market is one of the largest in Europe both in terms of the number of customers as well as the volume of the market. The number of electricity end users in Germany was around 45 million in 2016, of which 41 million had a standard load profile or were eligible to have a standardized load profile due to their energy demand and their capacity needs. The customers with a standard load profile can be viewed as typical retail customers with an annual consumption of 147 TWh according to the BNA and BKA (2018), while the customers with a registered load profile have been typically small and medium sized companies or large industrial off-takers. In the future, increasing numbers of smart meters will be installed. As a result, there will be a number of retail customers who will have the option to switch to registered load profiles by installing smart meters measuring the use of power every 15 minutes.

The German electricity retail market is heavily contested. In 2017 around 4.6 million retail customers chose to change their electricity supplier which translates into a churn rate of 11 %. This is quite a large number showing the intensity of the competition in the German retail sector (BNA, BKA (2018)). The grid infrastructure needed to supply the retail customers are provided by 829 Distribution Grid Operators. All of them that have been legally or commercially unbundled and are not allowed to engage in commercial operations such as the supply business. On average, there are 130 retail suppliers in each distribution grid zone. On the one hand, there are grid areas with a large number of customers and traditionally with a larger number of suppliers. On the other, there are some grid areas that are very small in terms of eligible retail customer numbers thus featuring less than a dozen suppliers. Especially in small or rural grid areas the number of retail suppliers can be less than 20.

Despite the fierce competition, approximately 41 % of the retail customers are served by retail companies that also own and operate the distribution grid. This holds true even though the retail unit and the domestic distribution grid operations are operated by different legal entities and are

commercially unbundled. It has been estimated that around 20 % of the retail customers never changed their electricity supplier since the liberalization of the retail market in 2000.

In total there are more than 1,100 companies that are engaged in the electricity retail business in Germany. There are 3 major groups of suppliers which can be ascertained from the data in the Table 1 demand of electricity is involuntary and highly inelastic in the short run.

The largest market share is held by the so called Big 4. These are the large international utilities that own sizable generation plants around Germany and would also own distribution grids in various parts of the country. The players in this group make use of the synergies of an integrated merchant energy supplier. The Trading & Origination units in those companies basically steer the generation and the retail business by offering market-based prices and transfer prices to the generation and customer businesses. All of companies in this segment basically engage in retail activities under their own brand name and by using additional brands. Moreover, e.on, RWE and Vattenfall have been running retail operations in several European countries.

The next group of suppliers encompasses the 1,000 regional utilities which own a distribution grid in one part of the country but who also run some customer business on a regional or a national level. In addition, many of the companies are also engaged in gas retail sales, district heating and water supply. Some of these larger regional companies have been developing and participating in conventional power or renewable power generation projects. There are substantial differences in size in this group. Most of these companies are owned by municipalities or by counties. The markets share of this group in total is 29 %. The more innovative segment of these companies runs nationwide retail operations for which they created a national brand. Some of them use different brand names for the retail business in their own grid and their national supply business.

Finally, the last group includes around 140 independent retail companies. Some of these are investor-owned, while others are subsidiaries of foreign energy companies. Companies in this group do not operate grids or sizable generation plants in Germany. Since the beginning of the liberalization in 2000, there had been some insolvencies in this segment, while an even larger number of players simply stepped out of the market or were taken over by utilities. The aim of these companies is to operate at very low costs, make sure that they finance their growth to be able to reach a critical size and thus placing them in a position to compete with the two other groups listed above.

Table 1: Supply Structure in Electricity Retail in Germany 2016

Suppliers	Number of companies	Market Share
Large Integrated Utilities (RWE, e.on, Vattenfall, EnBW)	4	62 %
Municipal and regional suppliers	ca. 1,000	29 %
Independent suppliers	ca. 140	9 %
Total	ca. 1,140	100 %

Source: Bundesnetzagentur, Monopolkommission (2017)

In the short-term there are three possible strategies to survive in the retail market:

1. Low price strategies: Match the lower price offered by the challengers
2. Introduce a new core energy commodity product (i.e. engage in risk management services)

3. Altering prices only when there are substantial cost increases such as increase of grid charges, taxes or wholesale power prices

The first strategy is one that had been used by newcomers in the German market, especially the independent market players which needed to grow their business with a lower cost-base compared to the average utilities in order to break even. However, this strategy does not work in the medium and long-term, as it needs substantial financial resources to finance the negative operative cash flow for a longer period. Given the small value-added of the retail business in the total value of the product, offering sizable discounts on the retail price is not a sustainable strategy for more than a year. Even if this approach would result in a sizable growth of customer numbers, it would not deliver an adequate return on the capital employed. Especially trying to be the cheapest retail electricity supplier in all grid zones of the country has proven to be a very expensive growth strategy. New customers need to stay with their supplier at least 2 to 3 years before the investment into the price discount, the commission paid to the online platform and other marketing expenses are paid back. As the customers attracted by this strategy are usually the ones that are quite price-sensitive, there is a risk of losing them within a time frame of 3-5 years. As a result, most of the players that are going for growth in the retail market rather make sure that they are among the 5 or 6 cheapest suppliers listed on the online platforms, rather than offering the lowest price. Moreover, price discrimination to the disadvantage of existing customers adds another financial risk if it is applied for more than 6 months. Some supply companies offer a one-year bonus for new customers. Existing customers might become aware of the difference and look for cheaper suppliers on the online platforms.

The second strategic approach, i.e. introducing a new core energy product, can be quite demanding with respect to the outcome. In Germany various alterations of this approach have been tested:

- Some newcomers to the market have been trying to offer a flat-fee for energy retail customer following similar products in Norway. The underlying assumption was that the customers would not be inclined to take advantage of this offering by increasing the demand. Yet the risk premium that the suppliers have been charging to the customers for the flat-fee tariffs have been quite high unless there was a pre-agreed limit on the maximum electricity demand for a given period. The flat-fee products disappeared from the German market, as the customers became aware of the consequences of exceeding the limit resulting in a substantial increase of the per-unit price.
- An alteration of the above strategy is to offer lower per-unit prices and increase at the same time the fixed price component of the electricity price.
- Another way to manage the risks of the product is to primarily offer contracts that can be terminated on a short-term basis ("monthly products") thus giving the customer the opportunity to change the supplier on a monthly basis. For the supplier, this serves as a hedge against increases of wholesale prices. The lower risk for the supplier can be passed on as lower prices for the customers. This strategy turned out to be quite successful. Price-sensitive customers with a term-contract of one or two years are likely to put a reminder into their calendars to check prices shortly before the end of the contractual period to avoid an automatic prolongation which is part of many products. As customers of monthly products believe that they can always cancel their products in the very short-run if needed, they are usually less diligent in checking the electricity retail prices on online portals on a regular basis. Thus, customers with monthly products unconsciously show a higher loyalty to their supplier. As a result, all major retail operations in Germany offer monthly products at low prices.

- Another way of managing the risk profile is to allow the customers to establish groups and communities that jointly buy electricity from one supplier. The communities would be given a discount on their individual electricity invoice. Communities are usually set up by friends and family members in different locations that are supplied under one contractual agreement by one supplier. This system works even if the members' meters points are in different grid areas. For the suppliers, these group contracts bear some advantages. On the one hand, there is a diversification of credit risk. On the other hand, communities reveal a higher customer loyalty as a group than individuals.

Yet the best short-term strategy in electricity retail in Germany has been to adopt a passive approach which is the third strategic option: suppliers would wait for price increases on the power wholesale market, in the grid operations and increases of taxes and fees that need to be passed on to the customers. As all suppliers will have to adjust their prices as a result of these changes, there is a period of less market transparency both for the supplier and the customer. Retail companies can use this situation to either increase their customer base or increase their margins. The increases in the Fall of 2018 can serve as an example for strategic retail price adjustments triggered by such an event:

- During the second half of 2018 carbon certificate prices (EUAs) went up from 5 EUR/t to 20 EUR/t. This was due to an attempt of the European Commission to reduce the allocation of EUAs. As a result of this undertaking, baseload electricity prices increased by 50 % to levels above 50 EUR/MWh, as gas-fired and coal fired power stations had to pay more for their carbon certificates.
- In addition, the Regulator (German: *Bundesnetzagentur*) announced in November 2018 that the grid fees in Germany would be increased by 2 % on average to be effective from 1st January 2019.
- Both effects led to cost increases for electricity retail companies at the order of 3.7 % on average. By the end of the year 2018, 160 suppliers increased their prices by at least 4% on average, as reported by the Spiegel Online (2018) based on data from Online Platforms Check24 and Verivox. 216 suppliers increased their prices by a minimum of 3 % on average.

Some of the suppliers, the so-called second movers, delayed the adjustment of the retail prices by 2-3 months. Hence, retail companies developed quite sophisticated approaches regarding the timing and sequencing of the price increases. The second movers group included companies that wanted to grow their customer base and had the financial reserves to sustain this delay or were hedged against price fluctuation of the wholesale price. As most of the players increased the retail prices to pass on the wholesale price increases to their customers, the electricity customers were nudged to search for companies that did not yet increase the prices or increased them to a lesser extent. This is known as the first-mover disadvantage in price increase rounds caused by external shocks, as the first movers are likely to lose customers in such a situation. Moreover, the companies delaying the price adjustment enjoy a second-mover advantage. The timing and sequencing of price increases as a result of external price shocks on the cost side has proven to be a very tactical approach in the German retail business involving considerations from game theory.

Likewise the annual adjustment of the grid tariffs triggers similar game-theory-considerations. Every year in November, the German regulator (Federal Grid Agency or *Bundesnetzagentur*) announces the grid tariffs and the fees to be paid for the support of renewables in the year to follow. In grid areas that are less contested there is an opportunity to increase prices even beyond the level of the announced grid charge increase thereby increasing their retail margin. In grid areas with many suppliers, some suppliers try to play on their second mover advantage and increase their number of customers. In addition, some of the second movers might even increase their retail margin, especially

when other suppliers increased their retail price above the level that would have necessary to compensate for the higher grid charges.

The ways in which these price increases are conducted are quite essential for the development of the customer base of the individual retail company. Experienced retail companies are very well aware of the reaction of their different customer segments and thus do not increase their prices more than two times in 18 months. Frequent price increases substantially increase the risk of losing both price sensitive customers but also very loyal customers as a repeated price increases might give some impetus to these customer groups to look for alternatives. Ideally, supply companies try pass on the price adjustment from wholesale market price increases and increases in grid charges and taxes in one go. The second-movers run much less risk in losing customers, as the first movers already created an awareness in the public that price increases were inevitable. Second movers might even increase their retail margin by making small adjustments to the fixed prices in those grid areas, in which prices were not increased. Hence, developing a deep understanding about the customers' reaction to passing on price changes is pivotal for a successful retail market operation.

4. Long-term Strategies: Branding, Customer Service and Diversification

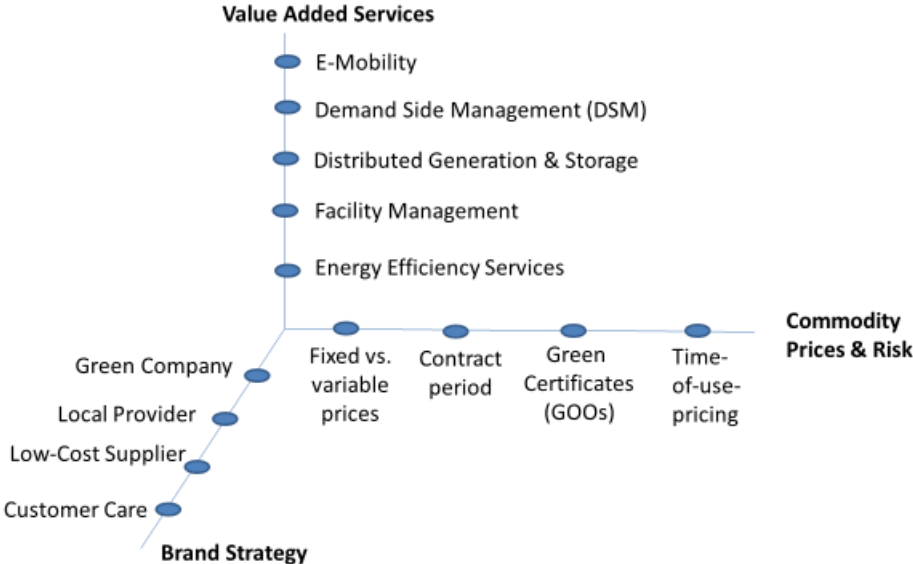
Long-term strategies in electricity retail involve product differentiation – not only with respect to branding and value-added services but also regarding pricing and service. The strategic choices to be made by the respective retail organization need medium- to long term investment to design these customer offers and embed them into a coherent and convincing marketing plan.

As Figure 3 below shows, retail companies can make their selection of strategic choices with respect to three groups of supplier options:

- **Commodity Price & Risk portfolio:** there are different combinations of risk and price models that can be offered to the customers, while the margins in these products can be quite different.
- **Value-added Services:** adding services to the classic supply of electricity is a diversification strategy that can reduce the dependency of the retail company on the commodity supply business
- **Branding:** this option relates to the brand image that the company wants to convey to its customer base

With respect to the commodity prices and the risk involved, the underlying idea is to apply product versioning or in economic terms second-degree price differentiation. The different options listed in the graph are complementary. For this reason, the choice of different combinations offered by the supplier is also referred to as menu-pricing, as they can offer different combinations of fixed and variable prices, green power tariffs by using Guarantees of Origin (GOOs), contract durations as well as time-of-use products. The latter ones are either offered in combination with smart meters thus enabling customers to avoid consumption in high-price periods or as a pricing model for those customers that own solar PV combined with storage and e-mobility solutions. Especially customers with distributed PV solar generation that help to reduce demand in peak and hours benefit from this as they will receive better prices for energy supply. The retail companies increasingly develop an interest in the time-of-use products given the intermittent nature of the increasing solar and wind generation that has gained quite an impact in several European countries, including Germany. The traditional time-of-use products in Germany have been so-called off-peak products for customers that use electricity for heating during the night and store the heat for day-time use.

Figure 3: Long-term Strategic Choices for Electricity Retail Business



Source: Eakin, Faruqi (2000), Amelung (2018)

Another strategic approach is diversification into areas and concepts that are less contested than the retail markets. This approach has been referred to as Blue Ocean Strategies, as described by Kim and Mauborgne in 2004. By contrast, companies should advance into blue oceans by searching for uncontested market space, rebuilding the market boundaries and reaching beyond existing demand and supply in new markets. Some electricity retail companies try to expand into new areas by offering value-added services. Some of these services are not closely related to the electricity supply business sector, such as telecom services, waste management, gas supply, water supply, district heating and security services. Other value-added services are close to the core business such as installing, financing and doing the service for distributed energy solutions such as roof-top or on-site solar installations, heat pumps, power storage solutions, facility management and charging of electric vehicles (EY (2016)). Some of these service areas are just about to become mass market applications. For instance, there are more than 100 utilities and independent suppliers offering long-term leasing contracts for solar PV, storage and heat pumps. Such long-term contracts change the customer relationship quite substantially compared to the short-run focus that both customers and suppliers used to have in the traditional supplier business which is based on short-term commodity contracts.

Even though some of these technologies reduce the sales of electricity in terms of kWh the additional sales created through diversification is likely to increase the profitability of suppliers. Firstly, the use of such technologies by the customers is likely to increase the income from maintenance and services. Secondly, there are indications that these technologies and services change the way customer think about the consumption of electricity. For instance, owners of electric cars tend to charge their cars while parking during work hours at the work place or during the night at their homes. The sensitivity with respect to prices seems to be less than in other uses of electricity such as air-conditioning or heating. Customers in this application rather pay for a service than for the commodity, while the service charge is regarded as a fee for the charger and its maintenance and to a lesser extent as a price per unit of energy.

Moreover, the owners of roof-top-solar applications reveal a new pattern of customer behavior. There is a tendency that household producers of PV solar do not optimize their electricity supply by trying to maximize their income through net metering, thus selling excess generation to the grid. By contrast, there is a tendency that this customer segment is looking for new applications of electricity, as during sun-shine-hours the consumption of electricity is perceived to be free-of-charge and environmentally friendly. Electricity customers owning or leasing roof-top-solar installations tend to install saunas, swimming pools and electric grills thus increasing their electricity demand especially during peak hours, when their PVs modules are producing at high capacity. Consumption of electricity is likely to be shifted into hours of high solar generation. These hidden needs that owners of PV and storage develop give a clear indication that the loss of income resulting from the reduced sales in the traditional commodity business is more than compensated by the increase of asset management services and demand management services as well as new electricity demand. While traditional electricity retail customers have tended to focus on saving electricity in an intelligent way, these new customer group is rather inclined to consume electricity in an intelligent and environmentally friendly way.

Moreover, the price sensitivity of this customer segment is generally lower compared to those customers that do not own solar installations. This is the result of a lower degree of price transparency that alters the commodity character of the electricity supply. When using PV solar, it is not easy for the customer to compare the costs per kWh on a monthly basis or annual basis given the different time and quantity of use. For the time being, approximately 4 % of the roofs in Germany are equipped with roof-top-solar installations. Given the price reductions in this technology, there is likely to be a substantial growth potential to deploy PV solar in homes and in small businesses. The growth potential for combined solar PV and storage is basically fueled by the increases in grid prices both on the distribution grid level as well as for the high-voltage grid. As long as the regulation does not abolish net metering, these distributed energy solutions might not even need subsidies in most locations in Germany.

Another driver for the increasing demand is low for solar and storage results from the low interest rates on the capital markets. For the time being, distributed energy solutions can be financed at very low rates, while the rate of return is clearly above the return of long-term Euro-Treasury bills or investment grade corporate bonds. As savings on the energy costs is not subject to taxation unlike bonds or shares, there is clear incentive for homeowners to invest in distributed energy solutions.

Finally, electricity suppliers are trying to take advantage of this trend by creating “communities”: this means that households and small businesses can become part of a community thus sharing their electricity generated through distributed energy solutions with neighbors, friends or users of the same grid area. As these communities increasingly become generators, the electricity suppliers take over the role of managing the network and the distributed generation assets. Currently, , this combination of distributed power supply and communities has proven to be less price sensitive than the standard commodity business.

Another strategic option is the design of the brand, as shown in Figure 4. The underlying idea is to invest into the development and the implementation of a convincing brand. The ownership of a strong brand enables a supplier to apply so-called group pricing schemes. The idea is to divide the market into segments and charging a different price to each segment, while the price for each member of the segment would be paying the same price. The ultimate group pricing approach leads to a situation that each retail company’s brand would focus only on one segment. In the German retail market, the following supplier options have been chosen by electricity suppliers in Germany:

- Green brand strategies
- Local supplier strategies
- Low-cost supplier strategies

- Customer care strategies putting a high weight on being perceived as best-service-providers

The important element of such a branding strategy is that the customer develops a lasting perception of the major value added of the service provided by the supplier. Once this perception has been established among customers, it does not matter whether the value proposition holds true at any point in time in comparison to all other competitors.

Group pricing by establishing a strong brand name is already quite common in the “Green company” segment. The idea of this supplier brand option is to create an image for their customers that choosing the “Green company” is much more authentic and loyal to the principals of sustainable electricity supply. The idea is to go beyond the ordinary supply of Guarantees of Origin (GOOs) that is offered by almost all retailers in Germany to offer a green product. The Green Company would not offer any grey or brown power options, i.e. contracts in which only a part of the electricity is covered by guarantees of origin (GOOs) or direct green power supply. Green retailers offer a various supply options ranging from standard GOOs from ordinary hydro-power plants that is popular in the mass customer business to more convincing and customized products. A more sophisticated approach that would underline the green brand is to offer GOOs from new power stations thus selling additionality as a standardized product. Additionality would give the message to the customer that - with the purchase of that certificate - they would contribute to the development of new solar and wind parks. A high-end approach of this segment would be to offer the customers to source their power from specific renewable installations. The latter uses a blockchain-based system on which the customer can choose the windfarm or solar farm from which they would like to get their electricity. As it can be seen from Table 2 below, there is a wide price range with respect to the green product that customers might choose.

Table 2: Types and Prices of Guarantees of Origin October 2016 – 2017

Product Type	Bulk: cheapest products	Premium: ready products	Tailored: customized products
Product Specs	<ul style="list-style-type: none"> • Nordic, Swiss or Austrian hydro • unspecified wind 	<ul style="list-style-type: none"> • Standard geographical and technology requirements, e.g. Dutch wind • Standard age classes and subsidy-free requirements e.g. younger than 5 years • Known labels such as OK, Greenpeace 	<ul style="list-style-type: none"> • Tailored additionality products including top financing and synchronized GOOs • Plant specific (i.e. clos to customer) • Reporting & marketing services (including also for bulk and premium GOOs)
Prices 2016 – 2017	0.26 – 0.5 EUR/MWh	0.5 – 4 EUR/MWh	2 – 8 EUR/MWh
Source: Oslo Economics (2017)			

In addition, customers of Green companies expect some proven track record and a high level of Corporate Social Responsibility. Some green retail suppliers would even resist to buy renewable energy or GOOs from power producers that would also generate electricity in coal and nuclear generation or that are engaged in other activities that might be considered as being not environmentally friendly. This has been the approach of Greenpeace Energy from the very beginning. In addition, a supplier adhering to the Green company-strategy would be obliged to be climate neutral with respect to their activity, thus neutralizing their scope 1 and scope 2 emissions of CO₂.

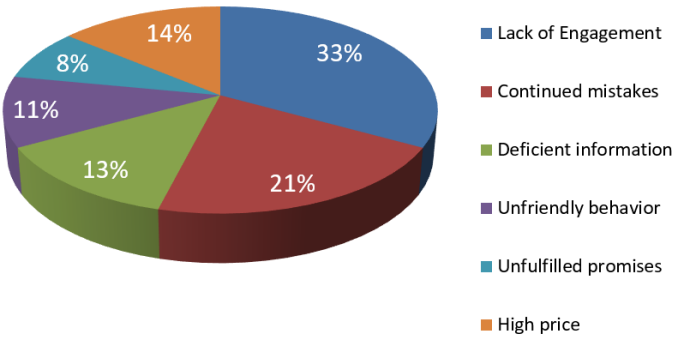
Another brand image that is favored by a large segment of customers in Germany is the local supplier option. It has been estimated that around 20 % of the retail customers in Germany stay with their

local suppliers despite differences in prices and products offered (Wolf, 2017). Especially customers that are not inclined to buy their products from online-retailers prefer this solution. The customers that are in this segment would prefer that their supplier would have a physical presence such as a representative office or point-of-sale offering consultation close to their homes. The local supplier brand is geared towards customers that they would be able to establish personal contact if needed, even though this might only happen once in a few years. Many of the companies in this segment would also supply grid services, gas supply, district heating and telecom services in addition as a part of their group, as this strengthens the impression of a strong physical presence.

Another brand option chosen especially by subsidiaries of larger utilities or independent suppliers is the low-price offer. Even though the prices offered by these suppliers might not be the lowest ones in the market, the respective brand name might be associated by the customers as a low-price service offering them savings compared to other suppliers.

Finally, there are some companies that take pride in improving the customer service, including initiatives such as personal contact by phone or email, as there seem to be a number of customers that are willing to honor this by paying higher prices. The figure below shows the reasons why electricity retail customers switch suppliers. The data have been derived from a study by Wolf (2017). Accordingly, more than half of the customers switched because of lack of engagement and continued mistakes. By contrast, only 13 % of the customers interviewed would name high prices as the main reason for switching suppliers. There is a perception among customers that they need to spend quite some time to solve issues regarding their power supply. As a result, there are a number of retailers in Germany that invest in avoiding costly mistakes and provide a feeling of responsibility through personal customer contact. As a result, some companies started implementing systems that the customer would not have to let the phone ring more than 3 times before they are in contact with a real person who is competent and can solve the problem.

Figure 5: Reasons for Changing the Electricity Supplier in Germany 2017



Source: Wolf (2017)

Another indication of customer friendliness is the degree of understanding of the individual needs of the customers. Therefore, some electricity retail companies in Germany use digital models to tailor the numerous supply options to the needs of their customers. Digital marketing facilitates the move towards an increasingly personalized pricing and offering of supply options. An approach that has been increasingly used in the German retail market is the affiliate marketing model. In this model, the retail company - either directly or through a service provider – becomes a partner of an affiliate network encompassing around 200 partners and through this covers various industries such as insurance, energy, automotive sales and telecoms. Each of these affiliate partners adds some specific characteristics of their individual customers such as membership in an environmental organization or

whether the customer is tech-savvy, risk averse, environmentally minded or very restrictive in spending. The affiliate partners would not reveal the name or identity of the customer but allocate a number to the customer showing the existence and the strength of the relevant characteristics. When the individual customer goes online, the banners or advertisements shown lead them to the product in which they might be interested and to the website of the respective electricity retail company. The product specifications offered to the customers are a function of the individual customer’s ranking of certain preferences such as willingness to pay for electricity, risk aversion, willingness to invest, regional focus and environmental awareness. The system can rate the priority of these of these criteria for the individual personas or households. As there is quite a large number of product alterations, the offer submitted to the customer is increasingly moving towards a form of personal pricing. This digital marketing approach has been in use in German electricity retail for more than four years and has increased customer retention in those companies that use this approach.

Table 2: Brand Strategies and Personalized Supply Options

Personal Pricing used in Affiliate Marketing

Priority 1 \ Priority 2	Low willingness to pay	Environmentally minded	Electricity savvy	Risk-averse	Willingness to invest	Regionally focussed
Low willingness to pay		Bonus , 1y contr. + high Quality GOOs	Spot Contract	2y contract + bonus	PV Leasing plus spot contract	Friendship program, 1 m contract
Environmentally minded	1y contract + bonus, Large hydro - GOO		Spot contr. + quality GOO	1y contr. + quality GOOs	PV + 1 y with high quality GOO	1y contract + Local wind/PV
Electricity savvy	Spot contract	Spot + High quality GOO		1m contract	PV+Battery + 1y +e-charging	1y contract + DSM
Risk-averse	Monthly contract	1 y plus HQ GOO	1 y contract with discount		PV+Battery + 1y contract	1y contract + local discount
Willingness to invest	1 y contract + PV Lease	1 y contr. With PV+GOO	PV, DSM M, 1y discount	1y contr. + PV Leasing		1y contract + PV + battery
Regionally focussed	1 m contract	1y contract + local GOO	1y contr. + local green power	1 y contr. + PV leasing	PV + battery + 1y contr. + e-charging	

Source: Torsten Amelung (2018).

5. Conclusions

The electricity retail business in Europe did not deliver the political expectations with respect to lowering the prices of for retail customers. Initial reductions in generation costs and grid costs were offset by higher taxes and fees on electricity consumption. Moreover, unbundled retail companies have allocated substantial resources to their marketing and customer service. These costs were not part of the retail customers’ electricity price before the liberalization. Given the very small retail margin and the high level of transparency in the market, a strategy trying to increase the number of customer base by undercutting the price of the established retail suppliers did not seem to work in the medium-term. For this reason, most retailers revisit their prices amid to changes in prices of some input factors that can be passed on to customers such as grid charges, taxes and fees as well as wholesale power prices.

The growth of the electricity retail companies will depend on their ability to diversify into new products and business concepts, while at the same being able to define a brand strategy that their

customers find appealing in the long-run. The strategy of diversification can build on product versioning with respect to the price and the risk of the commodity and expanding into services such as distributed energy solutions. This seems to be a growing market, as users and owners of small-scale solar PV, on-site storage as well as e-mobility solutions show a different behavioral pattern compared to that of standard power users revealing a number of opportunities for long-term supplier-customer relationships. Customer using distributed renewable energy rather look for an intelligent and sustainable use of energy rather than focus on saving of electricity. As a result, electricity retail companies will increasingly rely on revenues from services rather than on per-unit-prices of electricity. The current regulatory framework based on net metering seems to support this as the saving of grid costs through net metering is a more attractive model for customers compared to taking advantage of small price difference in electricity retail supply. The increasing number of supply options that are generated through product versioning and diversification into services is going to lead into a much more personalized service that is offered by the retail companies. There is a strong trend is to increasingly use digital marketing methods to win new retail customers and keep them for longer periods of time. This type of more personalized marketing is very likely to enable electricity retail companies to plan design long-term customer journeys. As the experience in German shows these marketing strategies tend to be more successful if the retail company has developed a convincing brand name. Designing and Implementing these brands requires very careful choice and sizeable investment in the long-term.

References

1. ACER, CEER (2018), The 2017 Annual Report on Monitoring the Electricity and Gas Markets, Brussels
2. Amelung, T. (2018) Implications of the Current Electricity Price Evolution on Customer Specific Pricing Strategies. Lecture & Presentation at the University of Applied Sciences Biberach, 18.12.2018, published on ResearchGate.net.
3. Ben-David, R. (2018), The unfortunate paradox of retail energy prices Essential Services Commission ron.ben-david@esc.vic.gov.au Prepared for: Australian Energy Week, Melbourne (11 May 2018)
4. Bundesnetzagentur (BNA), Monopolkommission (2017), Stromanbieter: Anteile am Strommarkt 2017. <https://1-stromvergleich.com/stromanbieter>
5. Bundesnetzagentur (BNA), Bundeskartellamt (2018), Monitoringbericht gemäß § 63 Abs. 3 i. V. m. § 35 EnWG und § 48 Abs. 3 i. V. m. § 53 Abs. 3 GWB Stand: 13. Dezember 2018
6. Eakin, K.; A. Faruqi (2000), Pricing Retail Electricity: Making Money a Selling Commodity. In: Faruqi, Ahmed; K. Eakin (Eds.) Pricing in Competitive Electricity Markets; New York: Springer Science, pp. 5 – 34
7. ENERGIE-CONTROL AUSTRIA FÜR DIE REGULIERUNG DER ELEKTRIZITÄTS- UND ERDGASWIRTSCHAFT (2017), Marktbericht 2017. Wien, 2017
8. Ernst & Young (2016), Geschäftsmodelle 2020: Wie in der Energiewirtschaft zukünftig noch Geld verdient werden kann: Vom Commodity zum Lösungsanbieter. EY Deutschland.
9. Finon, D., R. Boroumand (2011), Electricity retail competition: From survival strategies to oligopolistic behaviors. CIRED Working Paper (submitted to Energy Policy) May 2011
10. Finncorn (2017), State of Play: Quantifying the Competitive Outcomes of Retailing in the NEM. Finncorn Consulting's report for Energy Consumers Australia, Released for submission to the ACCC Retail Electricity Pricing Inquiry. Finncorn Consulting Pty Ltd, 30 November 2017
11. IPA Advisory Limited (2015) Final Report Ranking the Competitiveness of Retail Electricity and Gas Markets: A proposed methodology to Agency for the Cooperation of Energy Regulators 4th September 2015, London.
12. Kim, W.C.; Mauborgne, R. (2004), Blue Ocean Strategy: How to Create Uncontested Market Space and Make the Competition Irrelevant. Boston: Harvard Business School Press.13. Oslo Economics (2017), Analysis of the Trade in Guarantees of Origin
13. Machiel, M.; B. Willems (2012), Competition in Retail Electricity Markets: An Assessment of Ten Year Dutch Experience16012-EEF: Mulder, M. and B. Willems, Competition in Retail Electricity Markets: An Assessment of Ten Year Dutch Experience, University of Groningen16012-EEF
14. Oslo Economics (2017), Analysis in the Trade of Guarantees of Origin. Economic analysis for Energy Norway OE-report 2017-58, Oslo.
15. Pöyry (2017), Electricity Retail Market Models. Final report October 23, 201710200109
16. Puller, S.L.; J. West (2013), Efficient Retail Pricing in Electricity and Natural Gas Markets: A Familiar Problem with New Challenges, Texas A&M University, January 2013
17. RAP (2014), Netzentgelte in Deutschland. Study mandated by Agora Energiewende, Berlin, vermiedene Netzentgelte
18. Spiegel Online Stromversorger erhöhen Preise Samstag, 17.11.2018, 20:15 Uhr; [sww.spiegel.de/schlagzeilen](https://www.spiegel.de/schlagzeilen). <https://www.spiegel.de/wirtschaft/service/verivox-und-check24-melden-steigende-strompreise-a-1239036.html>
19. Wolf, H.G (2017) Renaissance des Endkunden. PA Consulting Group, Frankfurt, 2017.