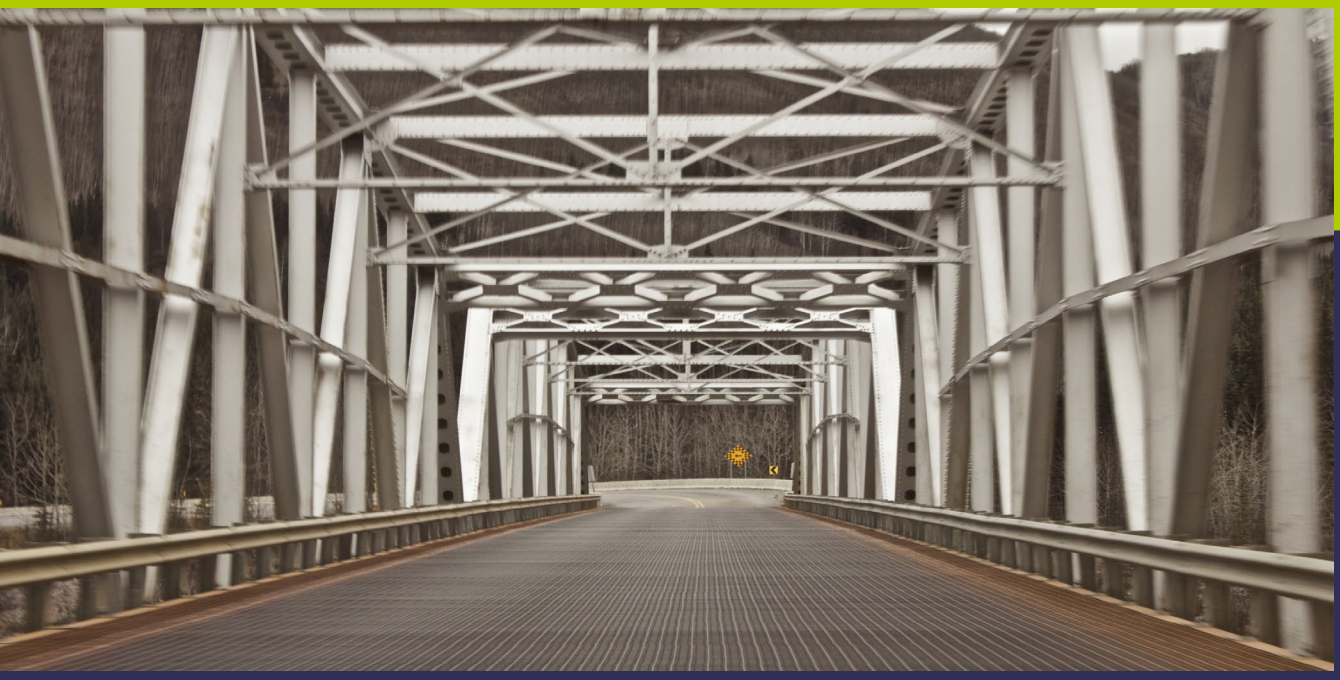
European Commission

EUROPEAN BARRIERS IN RETAIL ENERGY MARKETS



HUNGARY
Country Handbook

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Energy

EUROPEAN BARRIERS IN RETAIL ENERGY MARKETS PROJECT: Hungary Country Handbook

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This document has been prepared for the European Commission however it reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Please note that this and the other country handbooks form just part of the deliverables of the “European Barriers in Retail Energy Markets” project. For more detail on methodology, Europe-wide results and the Barriers Index, please refer to the following associated reports: “Final Report of the European Barriers in Retail Energy Markets Project”; “Report on the European Retail Energy Market Barriers Index”

SUMMARY

Project Outline

The following project outline describes the overall European Barriers in Retail Energy Markets Project. It relates to all the countries and markets which are the focus of the project.

The Context

European retail energy market liberalization is now well into its third decade in the most mature markets. Customers of electricity and gas are now free to choose their electricity and gas suppliers in nearly all markets across the EU and in a number of other European markets. At the same time, the European Commission and national European regulators have created a basis for non-discriminatory market access for energy suppliers through a series of regulations and directives. In theory at least, the European retail energy market is a place where new suppliers and providers of retail services can enter the market and compete relatively freely and on equal terms for customers in the market; a place where formerly incumbent electricity suppliers can compete for gas customers and where gas suppliers can compete for electricity customers; a place where a supplier from one region or jurisdiction can compete in another, without facing unreasonable or excessive barriers; a place where a capacity aggregator or other innovative business model can compete to provide its services to retail energy customers.

Objective

The European Barriers in Retail Energy Markets project was established to research the extent to which the theory is the case in practice; the extent to which energy suppliers across Europe face a variety of barriers to enter and compete in the market; to identify which barriers exist and to provide some suggested solutions to those barriers. The project thereby aims to support the European Commission and Member States in developing policy and implementing actions to reduce barriers.

This project has also designed and calculated a performance index that ranks different countries according to how easy it is to do business in the retail energy segment by combining a selection of measurements into a single score. The project is on the other hand, not intended as a measure or indicator of the ‘competitiveness’ of any given market, and it does not in this respect judge the effectiveness of regulatory authorities or governments, many of which have put great effort into developing their markets.

It is also important to note that all the markets included in this research are continuously evolving. Changes are being planned and improvements (and in some cases additional barriers) are possible as a result. While this project highlights and considers known future changes, it cannot make assumptions as to the effectiveness and outcomes of those changes. This project is therefore weighted in the present, based on the actual context in the market, whilst accepting that the present context may change, in some cases imminently.

Competitor Perspective

What sets this project apart from previous Europe-wide projects looking at the issue of barriers is above-all that it primarily takes the perspective of the competitor rather than any objective view of regulators, economists or academics. This is an important distinction since it requires an acceptance that even if the existence of specific barriers may not seem logical or rational, and even if they are not permitted or legal, even if they were supposed to have been eradicated, those barriers are significant at least in the experience or expectations of competitors in the market.

Notwithstanding this however, the project does not simply accept whatever competitors claim. On the contrary, the researchers have gone to great lengths to ensure that claims are challenged and justified. Cooperation with regulatory authorities to understand the regulatory context of claims, along with survey and interview feedback from competitors (including incumbent suppliers) with alternative perspectives or points of view, have also been considered to ascertain a balanced evaluation of the barriers in any given market. This approach may therefore be of value to policy makers, and complementary to other studies addressing market outcomes.

In some cases, claims by respondents have been made which cannot be corroborated. For instance, there have been claims by many respondents across Europe about integrated utility behaviours that represent barriers to independent suppliers in the markets. Barriers apparently resulting from a lack full ownership unbundling. Such behaviours may well be regulated against, may even be considered illegal, and authorities may have powers to investigate them – and maybe do so. They are impossible to prove given the mandate and resources of the researchers of this project, yet they are widely reported by respondents and broadly documented in other researches. Such barriers may be considered allegations by the respondents, but where they appear to merit further consideration they have been raised since their potential impact on competition is substantial.

Scope & Scale of Research

The project focuses on electricity and (in most cases) gas markets in 30 European countries, namely the EU27 states plus Great Britain, Norway and Switzerland. It was conducted over the course of more than a year with the cooperation and assistance of nearly all of the relevant national regulatory authorities (the report does not however represent their views and has not been ratified by them), around 150 suppliers and many other stakeholder organizations, across all focus markets. Great Britain was included in the project and cooperation was received from numerous suppliers, the regulator (OFGEM) and other stakeholders. Switzerland and Malta were included to a lesser extent since they are not yet open markets for household customers.

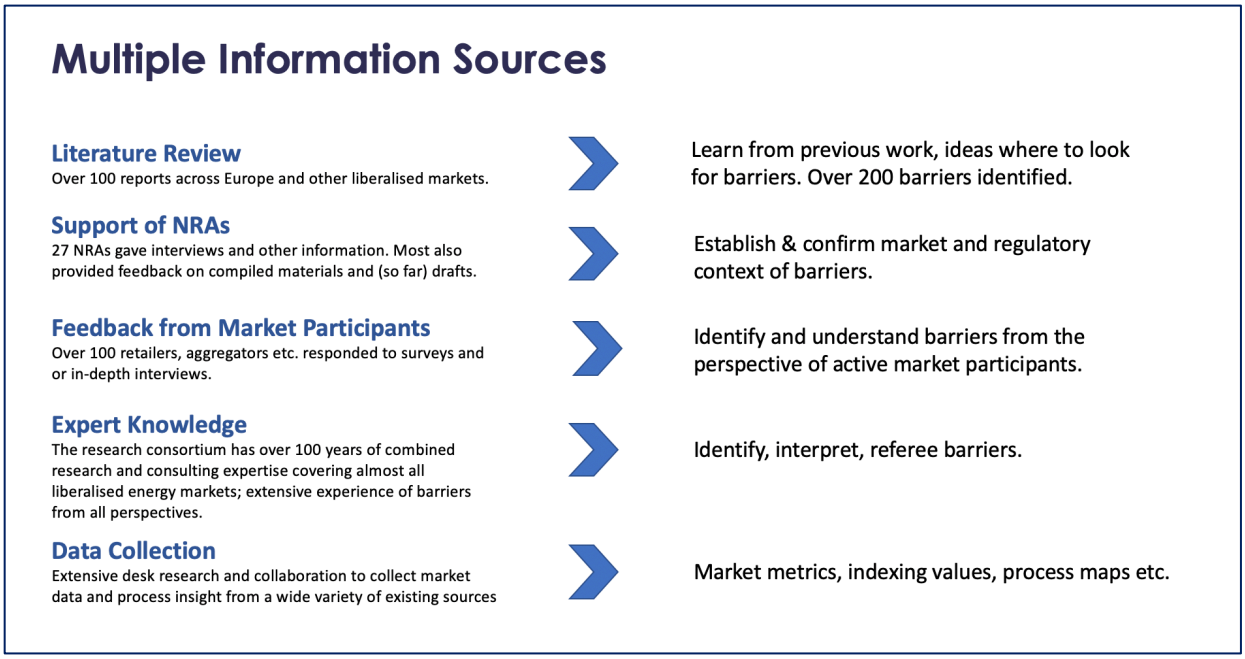
The project focuses on retail (supply), including also demand aggregation services, other additional offerings and new model retail, especially relating to the household segment customers (in some markets households and smaller SMEs may be difficult to distinguish). The project additionally concentrates primarily on barriers that are specific to the energy (electricity and gas) retail market – as opposed to barriers that are true of most markets, such as basic business costs and risk - and it gives priority to barriers for which a potential solution might be sought, as opposed to barriers which are a fact of any energy market and which could not realistically be overcome (such as the barriers relating to the core price volatility of energy as a commodity). The project does not aim to list every possible barrier in the market, however small.

Sources of Information

Many sources of information were used as part of the project. These included an extensive literature review of over 100 public reports, to assist in the targeting of survey questions; interviews with national regulatory authorities (NRAs) to understand the regulatory context in markets; feedback from market participants (suppliers and other competitors) and extensive data gathering for the purpose of collecting market metrics, market processes and

index values. For the latter the task of identifying sources that could deliver comparable and reliable index values was a key challenge of the researchers. The expert knowledge of the project consortium (which has extensive experience from the markets and issues concerned was also used to add judgement to the process. Specifically, the core project team comprised over a dozen researchers and experts from nine European countries, including international experts who have analysed Europe's energy markets since even before they liberalized.

Figure 1 - Multiple Information Sources



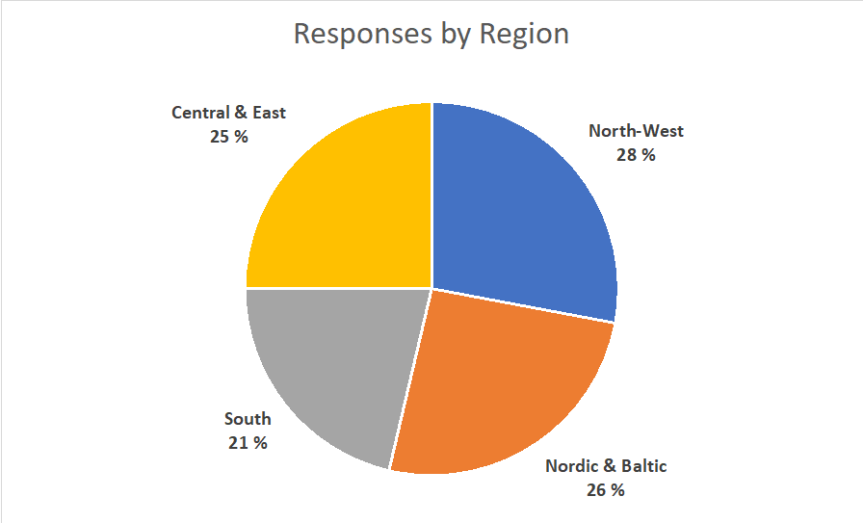
Surveys & Interviews

The primary research mediums used in the project were an extensive questionnaire and in-depth interviews. The purpose of the questionnaire, which contained separate questions depending on the type of respondent, was to provide a comprehensive and structured identification, weighting and magnitude of the barriers as experienced and perceived by suppliers and other competitors. Questions were categorized and broken down according to what was known through the body of existing literature and the experience of the project consortium, ensuring that all known barriers were addressed by the questionnaire. The questionnaire additionally facilitated the identification of barriers that hitherto had not been revealed by the literature review, or which were country specific. Interviews provided additional support and clarification to the findings from the questionnaire as well as allowing respondents to focus on top-of-mind barriers and the interviewers to dig deeper into key and / or unclear issues. While some respondents provided both questionnaire and interview responses, many provided one or the other.

The survey was publicly and widely promoted (via web sites, social media and by other direct means) to potential respondents from 17th June until late October 2019 but remained open until late February 2020 so that stakeholders contacted during Country Handbook development had the chance to respond. The dissemination of information on the project was further facilitated by a widely promoted public website through which over 300 people subscribed.

The Competitor Sample

143 questionnaire and interview responses were received representing 120 unique market-specific responses covering 28 focus markets. 71% of responses were through questionnaires versus 29% through interviews. Malta (a closed market for household customers) and Slovakia were the only markets from which responses were not received, although three additional markets received a level of response which was considered insufficient on which to conclude barriers based solely or primarily on respondent feedback. In these markets, namely Bulgaria, Cyprus, Czech Republic, the project consortium applied their expert insight and additional desk research to support the analysis of the markets. Switzerland, also a closed market for household customers, also naturally received insufficient response. The responses from 24 markets were therefore considered sufficient for the purpose of interpreting the barriers within those markets primarily based on respondent feedback. It is important to note that the response rate in no way impacted the index, which is not dependent on responses.



Analysis of the sample shows that responses were spread evenly among the regions. 66% of responses were non-incumbent competitors compared with 34% which were former incumbents in the markets concerned. In many cases the former incumbents are only former incumbents in one region within the overall country they are in. A large proportion of the former incumbents are furthermore active across multiple regions and countries, and therefore are both incumbents and non-incumbents, defenders and challengers. Among the non-incumbent players were a mix of more established competitors and more recent new entrants, along with more traditional supplies, new model suppliers and aggregators.

More information on the nature of the sample and responses can be found in the Final Report for this project.

Confidentiality

The importance of data protection and anonymity within the project cannot be stressed enough. Most respondents provided information on condition of anonymity. It was promised by default to questionnaire respondents and was in most cases explicitly requested by interviewees. Many participants additionally stated that they were nervous to respond at all since they were active in a market where there were only a handful of suppliers (or at least independent suppliers) which they felt meant that their responses could easily identify them. This risk was perceived as even greater in cases where the participant had made public statements on issues that would be contained in the research (the risk of readers putting two and two together was a concern). In some cases,

respondents stated that they even feared a backlash from other stakeholders if their identity was revealed, or (for e.g. a brand-new entrant in a market with one brand-new entrant) stated that if we revealed that they were a new entrant the market authority would instantly know who they were and that they were afraid it might inhibit their entry process.

Under such circumstances, it was decided that not only would all responses be anonymous, but also that the type of respondents would not be revealed in connection with given responses on a country level. It has been claimed by a handful of market authorities that this policy reduces the value of the research. The researchers feel that it in fact increases the value of the research since it has allowed respondents to provide information in an uninhibited fashion in a European market where, by and large, independent suppliers – and especially independent new entrant suppliers – are few and far between.

Deliverables

The project has three key deliverables:

- **28 country specific handbooks** detailing the barriers identified in each country together with suggestions for possible solutions. While most of the handbooks cover electricity and gas markets, some only cover electricity or cover gas to a lesser extent due to the absence or limited presence of gas. Additionally, two countries, Malta and Switzerland do not have country reports due to their closed nature with respect to household customers.
- **A robust, peer-reviewed barriers index** of how easy it is to do business in each country. The European Retail Energy Market Barriers Index, contained in the separate European Retail Energy Market Barriers Index Report, allows the objective comparison of market barriers across the focus markets. The report also includes a ranking of the focus markets.
- **An overall Final Report** containing a full project description and bringing together the findings and common learnings from all countries.

The Barrier Index and Ranking

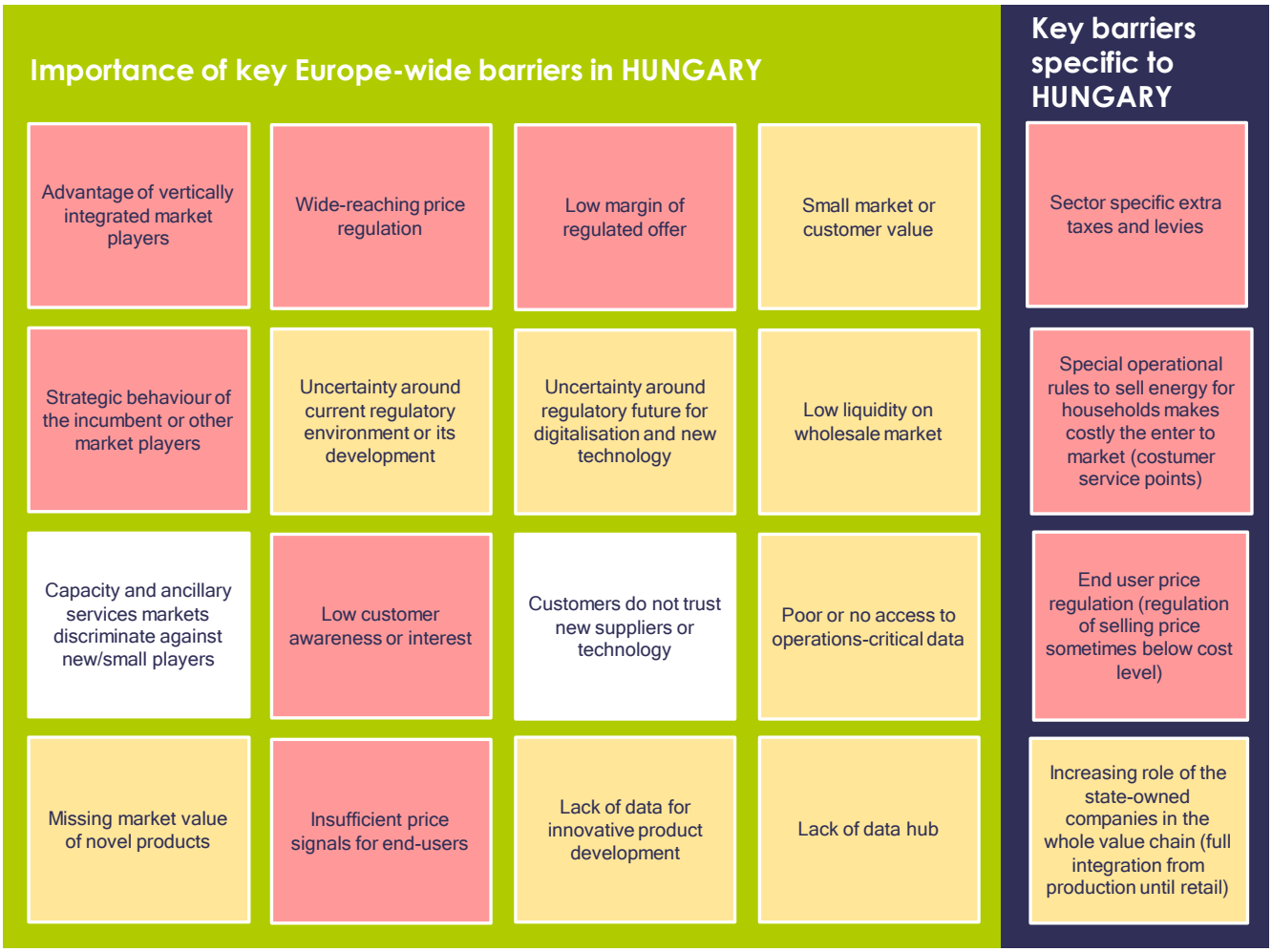
The purpose of the 'European Retail Energy Market Barriers Index' is to enable a degree of comparability between the barriers' context in each of the markets. It is based on metrics that can be collected for all markets, metrics for which available data currently exists. As such it provides a simple, best-available proxy benchmark measure for each of the categories of barriers identified by the project, for each market, and thereby ranks each market. It is intended to be used as an evolving periodical index and ranking on a European and national level.

The index and ranking should, however, presently be considered more of an approach and an indication than an absolute or definitive ranking. It represents the current state of market monitoring data in Europe and will evolve over time as data availability improves. Over time we would expect and recommend that governments and NRAs advance new metric collection to better enable future editions of the index and ranking.

A full description of the Index, its methodology and detailed findings and the ranking can be found in the separate Index report for this project. Within each country handbook the index values for that given country is presented.

Key barriers in the Hungarian market

The following figure highlights the key barriers in the Hungarian market.



Key recommendations

- We suggest a deep revision of the current price fixing regulation for household customers in Hungary and consideration of a phase-out schedule.
- A clear definition of energy poverty and vulnerable customers should exist. A concrete definition of vulnerable customers, including the energy poor, would also allow limiting the regulated market to this part of the society and help to allocate the state subsidies to the vulnerable social groups without significant distortion of market mechanisms.
- The sector specific taxes, such as the Robin Hood tax prescribing 31% additional corporate tax rate over the normal 9% for energy service companies and the high supervisory fees make unattractive the Hungarian market for new entrants. We suggest the analysis of a potential phase out of these sectoral taxes and levies.
- Acceleration of implementation of new digital technologies such as smart meters, interconnection of data hubs and customer information would help to speed up the switching process and to reduce various operational cost items.

MARKET OVERVIEW

Background

The Hungarian electricity and gas market liberalization process began in 2003, when Hungary gradually opened its electricity and natural gas markets to new entrants as a part of EU access negotiations. The period between 2003 and 2008 is often called the period of the *dual market* as household supply remained under a territorial monopolistic, regulated service but the eligible consumers (industrial buyers) could buy energy under free market conditions. The partial market opening was successful both in the electricity and the gas sectors.

Following EU legislation, Hungary broke down all legal barriers for free market trading from 2008 (from 2009 in case of natural gas) and legally opened also the household market segment to the free-market traders. Although theoretically the new legislative framework supported the further strengthening of competition in the trading sector, some segments of the market remained under strong state pressure. The rules of universal service providing, which represents around 30% of the total market have been modified several times over the past decade. The access to monopolistic infrastructure elements (cross-border transmission rights, allocation of state-owned electricity production, monopolistic gas wholesale contracts).is still an issue for non-incumbent players.

The Ministry for Innovation and Technology is responsible for the development and implementation of electricity policy in Hungary. The Hungarian Energy and Public Utility Regulatory Authority (HEA) is the regulatory body of the energy and public utility market, supervising the national economy's sectors of strategic importance. HEA, as an independent regulatory authority entrusted with provision making powers was established under Act XXII of 2013 as the successor of the Hungarian Energy Office (HEO) that was set up under Act XLI of 1994 on Gas Supply.[1] The Authority is responsible for licensing, supervision, price regulation, tariff-and fee preparatory tasks and also performs other functions such as compiling official energy statistics (incl. annual energy balance), consumer protection related tasks and most of the new functions required by the Energy Efficiency Directive (2012/27 EU). The Hungarian Competition Authority is responsible safeguarding of competition and prohibition of unfair and restrictive market practices.

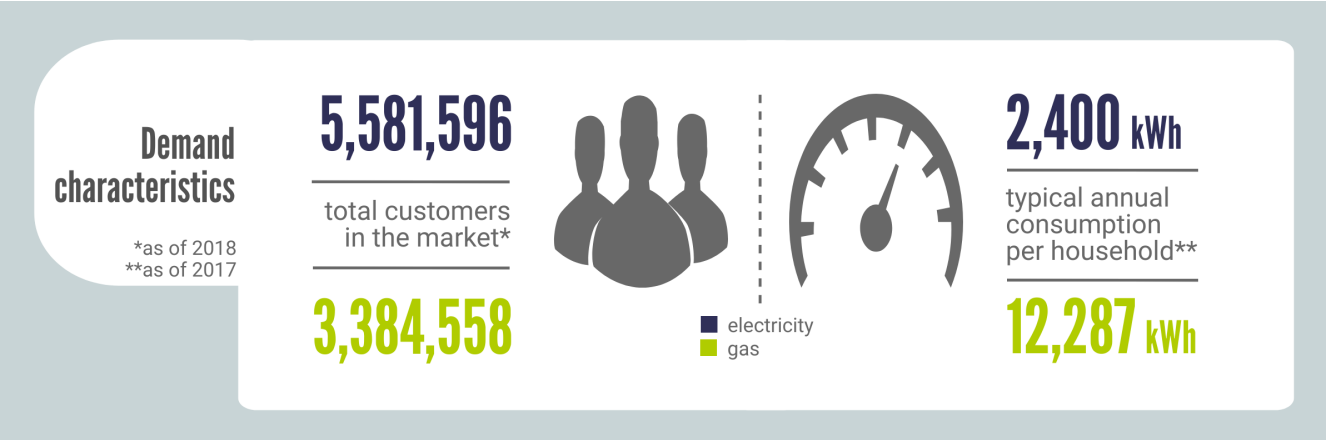
There are one electricity (MAVIR) and two gas (FGSZ, MGT)[2] transmission system operators in Hungary. The distribution system operators are legally unbundled, six electricity and 10 gas DSOs (5 regional large and 5 small local DSOs) are responsible for the territorial-based physical distribution of energy.

Market structure

The Hungarian electricity market slightly increased in 2018 to 38.5 TWh from 37.8 TWh. The share of the universal service providing (USP) segment is 11.6 TWh (increased from 11.3 TWh). Although legally possible to serve household consumers under free market conditions, factually the share of non-USP served households is vanishing. In case of gas, the overall market is fluctuating between 8.5 and 9 bcm/year. The share of the household segment is relative stable and represents approximately 40% of the market. Households are served by the single USP service provider.

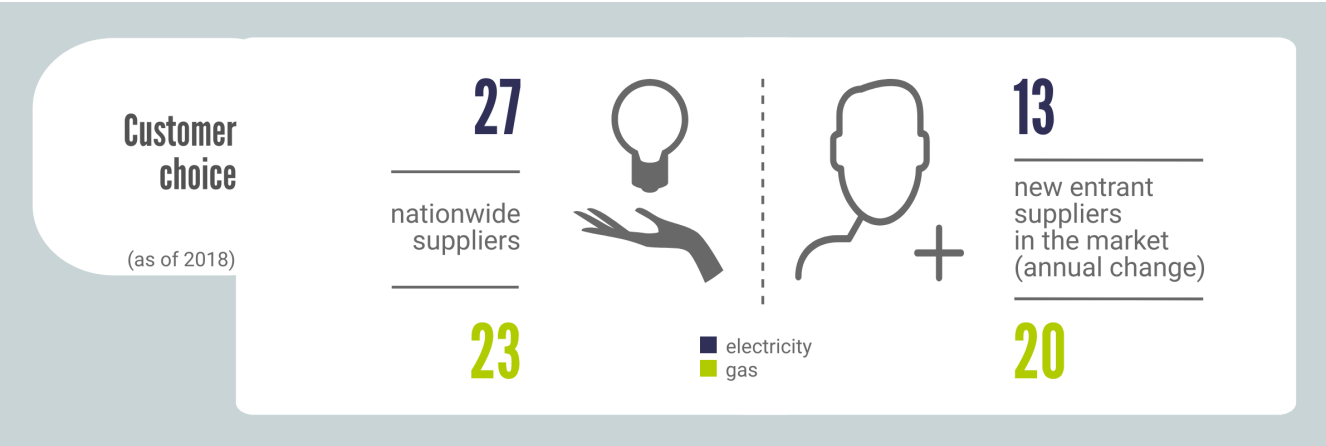
[1] http://www.mekh.hu/introduction
[2] FGSZ acquired MGT in 2019, so from 2020 there is only one gas TSO in Hungary.

There are 75 licensed electricity suppliers in Hungary in 2018. but the vast majority of them is not active in the households and micro- and small companies market segment. The top three suppliers group (namely E.ON, ELMŰ-ÉMÁSZ (part of Innogy) and MVM-NKM) market share is 77%. The market concentration is still growing, because of the international merge of E.ON and Innogy (their affiliates have over 60% market share in electricity retail) and the further acquisitions of the state-owned MVM-NKM Group.



Hungary is characterized by a mixed ownership structure with mainly multinational former incumbents in energy retail and distribution, while the wholesale sector is dominantly owned by state-owned companies.

The current structure of the Hungarian energy sector formulated in the mid1990s, at time of privatization. The integrated retail companies (including the distribution system operator (DSO) units and the household and industrial retail units) were privatized and with the exception of one gas-retailer company (the Budapest based FŐGÁZ) transferred to major multinational energy companies like E.ON, EdF, RWE, ENI and GdF. In the retail sector, the share of foreign-owned service providers with acquired territorial monopolies from privatization is still predominant (however, in case of gas to residential customers is dramatically decreasing); yet in the wholesale sector - especially in the area of electricity - the direct ownership of the state has remained significant in recent decades. For now, the state- and national-owned enterprises increased their market-shares, while several former multinational incumbents left the country's energy retail businesses (GdF, EDF, ENI).



The above figure can be misleading, as it shows all *de jure* licence holders. *De facto* there aren't free market offers to households, because of the artificially low prices of regulated market. Theoretically the universal service providers can compete, but as they offer the same prices, they can hardly differentiate themselves. In electricity

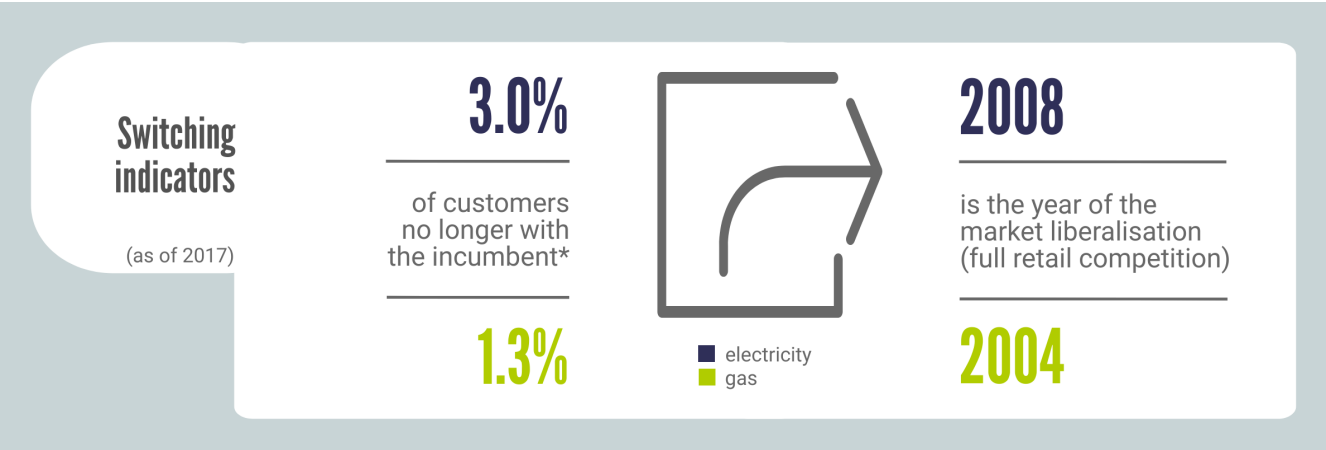
sector we can see a slight competition between the USPs, but this fact does not decrease the barriers to entry for a free market supplier.

As a result of the changing political ideology, the Hungarian retail energy market has undergone significant transformation in recent years. There are changes in the ownership structure of the sector: some foreign-owned former incumbent companies left the market (GDF, EDF, ENI), while others reorganized their operations (E.ON, RWE). Looking at the time period between 2008 and 2019 the institutional framework can be divided into two separate periods. The energy trading sector moved in the direction of strengthening competition until 2012. Strong new entrants appeared in the market, which stimulated the active players to increase their service levels. From 2012, the implementation of regulated fixed prices made the household segment unattractive for potential new entrants and incentivised the foreign-owned companies to leave the household segment.

Although the number of the electricity and gas retailers is relatively high, the Hungarian gas retail sector is very concentrated. Based on the number of the metering points the market share of MVM-NKM Group is 98.95%. The gas retail market share of MVM-NKM Group was 60% in 2018 based on the volume of energy supplied.

The electricity sector is a bit more diversified, however the competition for the household segment is missing here as well. The share of the universal service providing (USP) segment is 30% of the 38 TWh total market and this segment is under price regulation which eliminates the competition and resulted practically close to zero switching rate. The market share of the three integrated groups with USP services and DSOs within the group is 98.24% based on the number of metering points (E.ON 43.72%, ELMŰ-ÉMÁSZ 39.65% and NKM 14.87%). The independent suppliers are more active in the free-market segment and their achieved an overall 32% market share for 2018 in the Hungarian electricity retail market by volume of energy supplied.

The regulatory framework also has a dual characteristic. While in the case of industrial consumers, free-market mechanisms and free-market regulations prevail, for households and other eligible customers (public institutions, micro-enterprises) a regulated price is still used.



Because of the artificially low regulated prices, the household market segment is not attractive for free-market entrants which resulted a very low switching rate and missing free market alternative offers for households. In case of the gas sector a “single service provider” model has emerged as MVM-NKM acquired the universal service providing units of the former owners. Similar tendencies can be identified in the household electricity market when MVM-NKM acquired the retail services of EdF in 2016. In the household segment, the collapse of non-regulated market continued after 2018 as well, so the above data in the illustrative figure shows (despite the low numbers) a more favorable picture than the current situation.

In contrast, the free-market segment is more attractive for new entrants. The share of the independent retailers increased up to 30% in electricity and 25% in gas sector.

Political and regulatory orientation

The National Energy Strategy 2030 clearly outlines the more active state intervention in the electricity and gas sectors via ownership acquisitions and increasing direct state interventions in the sector. The government identified several key elements of the measures:

1) Achieve the lowest household electricity and gas prices in the region: This objective may have priority against of other macroeconomic goals and it may even involve the increase of charges paid by industrial consumers.
2) Impose specific taxes to ensure macroeconomic balance and to achieve industrial objectives: The increasing tax burdens contribute to deem the investments less attractive by the private investors of the sector making it easier to decide whether these investments are being redeemed or sold to government-preferred owners.
3) Strengthen the national ownership: The implementation of the program was started in 2015 with the state acquisition of FŐGÁZ, of which majority of shares had been previously held by municipality, and it was continued with the acquisition of the retail gas division of GDF-SUEZ, E.ON and TIGÁZ which resulted the acquisition of 3.4 million customers and that NKM became the exclusive universal service provider in the retail gas market at the end of 2016.

Ministry of Innovation and Technology submitted to the Commission the draft Hungarian National Energy and Climate Plan (HNCEP) in 2018. The document addresses the most important challenges that Hungarian energy sector will be facing in the next decades. The document plans to achieve a 20% share of renewable energy until 2030 mainly with implementation of solar panels, greening of transport and modernizing the district heating services. All these strategic goals have strong impacts on the business opportunities of energy retailers.

The document highlights, that the internal energy market primarily depends on three components: level of interconnection, or necessity of its increase, the level of market coupling, and its reduction of prices and price volatility, and the liquidity of the Budapest electricity and gas exchange.[3]

HNCEP mentions several key actions and measures which has impacts on retail markets and serve the strategic objectives:

- Development of household-scale small power plants combined with smart metering and electricity storage
- Ensuring of systemic demand for reserves in conformity with requirements arising from increasing PV panel capacities
- Greening of transport by supporting electromobility and developing rail and other public transportation vehicle fleets

The Ministry began the revision of the National Energy Strategy 2030 in 2018 and plans to submit for public consultation in October 2019.

[3] https://ec.europa.eu/energy/sites/ener/files/documents/ec_courtesy_translation_hu_necp.pdf

Based on the opinion of the Hungarian Energy Traders' Association what they shared with the Ministry in the first industrial consultation in July 2018, the new strategy should react on the following trading and retail-related challenges and issues:

- Developing flexible generation capacities and coordinating regional and domestic power plant developments are important to address security of supply and reducing market volatility.
- The integration of as much renewable production as possible into traders' balance groups against of the centralized system can strengthen market mechanisms.
- Creating conditions for competition in the household retail market (the retail market should be not just USP market), Elimination of regulated tariffs for households; removal of cross-financing in network elements of the tariffs between households and industrial consumers.
- Deregulation of special taxes, restructuring of supervisory fees.
- Unrestricted market mechanisms in the commercial value chain.
- Market-oriented integration of energy efficiency objectives (smart energy systems, smart metering, information provision).[4]

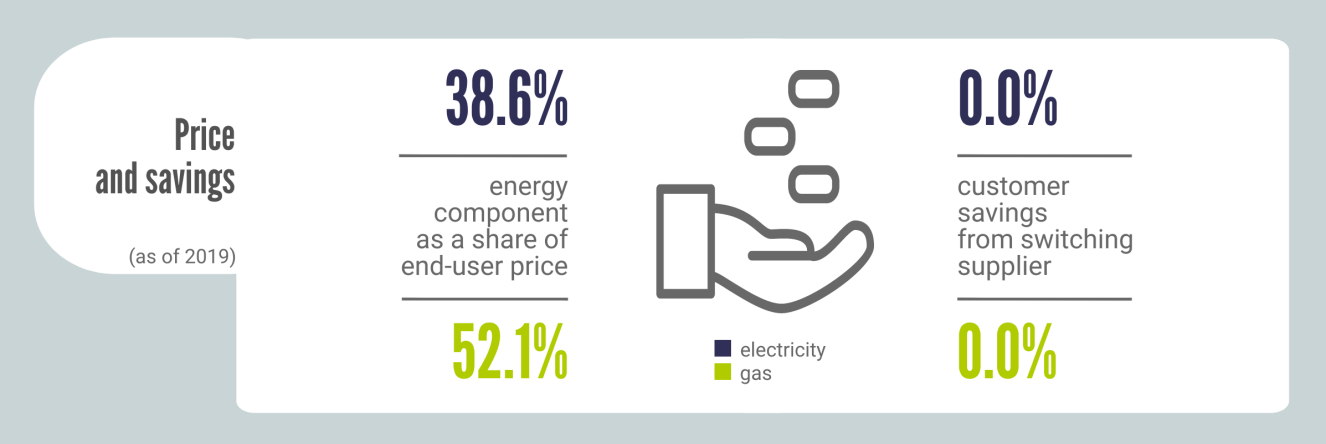
Regulatory market characteristics

Electricity and natural gas prices are regulated for households. The Ministry of Innovation and Technology fixes the end-consumer prices with a price decree. Suppliers that do not deliver electricity or gas to households can define freely their prices.

The industry-specific taxes and the increasing other levies also deter the potential new entrants and brake the investments. The survey responses highlight the importance of these barriers. The respondents mentioned the following barriers related to market attractiveness:

- the Robin Hood tax is a strong hindrance mainly for smaller companies as they do not have the opportunity to optimize the taxation in group level;
- The retail price (and other, service level related) regulation for households in its current form not only makes a competition for residential customers impossible, but also led to a market concentration hindering market entry long term (difficulty to reach a decent economies of scale). Beyond that the regulatory intervention might prevent potential new entrant from entering the market as the regulatory risk is high;
- Margin squeeze due to retail price regulation; unpredictable and politically driven price developments (only residential segment).

[4] Hungarian Energy Traders' Association: Aspects for rethinking the National Energy Strategy, July 2018.



Other market characteristics

Wholesale market

There are liquid wholesale markets in Hungary both for electricity and gas sector. HUPX Ltd. is the operator of the organized Hungarian electricity market. The day-ahead market of HUPX is taking part in the four markets coupling (Czech, Slovak, Hungarian and Romanian). HUPX also operates an intraday market. The volume of traded electricity in the HUPX day-ahead market achieved 19.8 TWh in 2018 and increased to 22.2 TWh in 2019.

The gas exchange operated by CEEGEX, the total traded volume on the CEEGEX spot market was 34.3 TWh in 2019 which was four times higher compared to the 2018 volume.

Smart meters

Hungary is one of the lagging countries of the smart meters' deployment in the whole EU. The missing retail competition and the politically driven household energy tariffs are challenging the business viability of investments into smart meters. In the absence of real time consumption and electricity prices for consumers and only limited availability of time of use rates for households, public organizations and business consumers, the possibility of exploiting demand response opportunities is presently quite limited.

Context for aggregation/demand response

The Hungarian balancing energy market is dominated by a few power plants (mainly gas fired units). The scarcity of available flexibility achieved high balancing energy prices. By theory, all members of the energy system can offer balancing services to the TSO directly through tenders or to the balance group operator through the balance group membership contract. The details of the DSR services are regulated in the Commercial and Operational Regulation.

Although the legal framework offers the opportunity for industrial consumers to participate in balancing service markets, there are only a few examples of this due to the low incentives.

In case of households, both the technical capabilities and incentives are still missing. DSOs provide the opportunity for households to receive lower rates for appliances that can be operated flexibly (e.g. electric heating systems

with heat storage, freezers and electric vehicles) through direct load control which supports intra-day scheduling of electric power demand.[5]

[5] Bartek-Lesi, M. et al. (2018). Nine national case study reports on governance barriers to energy transition - Country report for HUNGARY. http://www.enable-eu.com/wp-content/uploads/2018/10/ENABLE.EU-D5.2.zip

BARRIERS

The European Barriers to Entry and Competition in Retail Energy Markets project has researched barriers across 30 European markets. From this research four over-arching pan-European categories of barriers have emerged:

Over-arching pan-European barrier blocks

Barrier Blocks		
	1	Regulatory disincentivisation
	2	Market inequality
	3	Operational and procedural hinderance
	4	Customer inertia

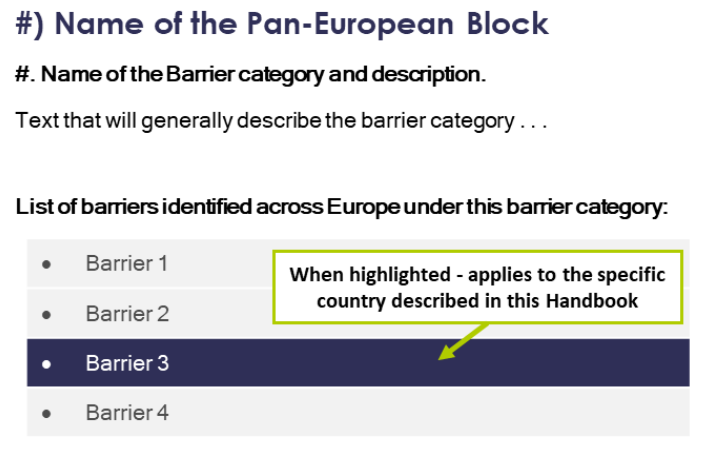
Description of the four-over-arching pan-European barrier blocks:

1. **Regulatory disincentivisation:** barriers arising as a consequence of the general regulatory framework of the natural gas and electricity retail markets. We address the impact of price regulation, burden (-sharing), regulatory unpredictability and access to innovation. All these items may disincentivize competition within the natural gas and electricity retail markets, as well as entrance by new suppliers.
2. **Market inequality:** barriers arising from an uneven playing field for different types of suppliers. Often, certain market players already have a competitive advantage by being very close to the formerly integrated DSO (or still being vertically integrated in case the de-minimis rule applies), controlling a large amount of generation capacity or having a large market share. If market rules do not prevent this, such players can exercise their market power to treat other market players in a discriminatory way, creating market barriers. We examine issues related to unbundling, historical roles and access to market mechanisms.
3. **Operational and procedural hindrances:** barriers arising as a consequence of the complexity and national/regional differences in standards and procedures in different process areas, affecting how easily new entrants can enter and operate in the energy retail market. We look at issues and differences in licensing, signing up and operations compliance, as well as data access, processes and data management from the suppliers' point of view.
4. **Customer inertia:** barriers arising due to customer behavior and attitude. For the energy market to function, end-users must be willing and able to switch supplier. If customers do not switch supplier, suppliers need not worry about losing customers, so there is no incentive for suppliers to improve their services, minimize prices or innovate to compete for customers. We examine barriers related to customer inactivity or disinterest in the energy markets.

Within each of these high-level blocks are contained sub-categories, which are also mostly pan-European in nature. Each of these sub-categories contain the specific barriers which relate to individual markets as described in the following chapter. Altogether, we identified 45 barriers, most of which broadly across Europe. Only a selection of them apply to the Hungarian case as reported in the following chapters of this handbook.

HOW TO READ AND INTERPRET THE FOLLOWING SECTIONS

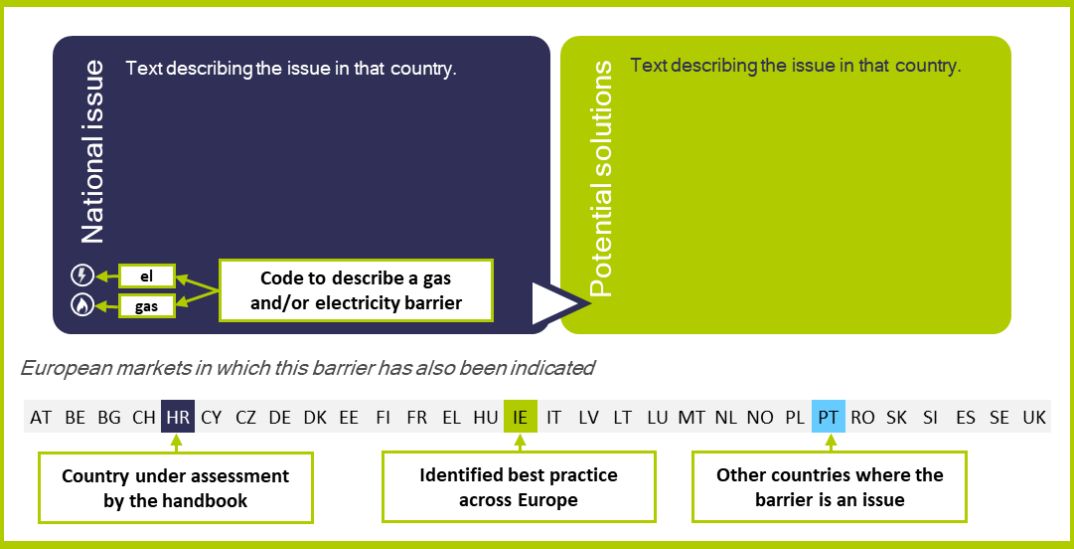
Each of the following four chapters explores one of the four pan-European blocks of barriers and report how each sub-category barrier apply to Hungary. When a barrier applies to Hungary, it will be highlighted in the table following a general description of the barrier itself as shown in the example below:



As showed in the above figure, the table lists all the barriers we have identified in Europe within the specific barrier category. **Only if a sub-category barrier is highlighted in the table, it means that suppliers raised it as a barrier, and it is a prevalent issue in Hungary.**

Highlighted sub-category barriers are then briefly described following a twofold methodology which

- reports what the suppliers are experiencing in the market as a national issue and
- suggests potential solutions to the problem as depicted in the below figure



At the end of each chapter, Country's performance within the category, according to quantitative indicators, is then presented.

For additional market context, please see Appendix 1: Process Maps, which gives a high-level graphical overview of the most critical steps involved in establishing and operating as a supplier in the national market.

1) Regulatory disincentivisation

Within regulatory disincentivisation, barriers across Europe have been sub-categorised into four areas encompassing 17 specific barriers[6]:

1. **Price regulation.** Regulated prices usually refer to regulation or control of end-user's prices by a public authority, usually the National Regulatory Authority (NRA). Price regulation can take different forms, such as setting or approval of prices, price caps or various elements of these. In Europe, there still exist Member States which have maintained end-user regulated prices during the market opening process and after, in the intention of protecting households or even non-household customers from significant increases in energy prices, especially in a context of limited competition. In some cases, this regulation has led to below cost prices and to low margin to cover the supplier activity risk, discouraging investments and the emergence of newcomers.
   In the majority of the 30 analyzed countries, energy prices are no longer regulated. Where regulated prices remain, NRAs tend to consider them as a significant barrier to entry for alternative suppliers. All Member States, where NRAs consider regulated prices as a significant barrier, are planning to remove them, at least for non-household customers.[7] Across Europe, the following specific barriers around price regulation were detected in this study:

   - Price regulation discriminates against certain suppliers.
   - High penetration of price regulation
   - Low margin of regulated offer (margin squeeze)

2. **Burden sharing.** Energy suppliers across Europe are often required to collect payments for services not part of their business, or to provide other services such as services related to energy efficiency, or to manage assets such as those of the metering system. These requirements can pose a barrier for suppliers' operation on the retail market by raising their costs and distracting focus from their core business and might deter entry into the retail market by newcomers. Barriers related to burden(-sharing) detected in this study are as follows:

   - Obligation to collect tariffs unrelated to energy on behalf of others.
   - Obligation to keep a minimum-security stock as a gas reserve

[6] Please note: these definitions are Europe focused, not Hungary specific. Highlighted barriers have been identified as country specific.
[7] CEER Benchmarking report on removing barriers to entry for energy suppliers in EU retail energy markets. April 2016 [footnote wording and format to be improved].

3. **Regulatory unpredictability.** The establishment of an internal natural gas and electricity market in the European Union is an ongoing process. European legislative packages are boosting this process, making market regulation evolve rapidly. Transposition of regulation into the national regulatory frameworks is not always smooth and NRAs' actions are sometimes unpredictable. This leads to uncertainties for suppliers related to unclear and unknown future developments of the regulatory framework, including the attitude of the institutions that regulate the retail market and oversee market operation and organization. This uncertainty is a barrier that impacts suppliers' business, preventing their entrance in the market, making strategic business planning difficult or forcing them to adopt different approaches during operation. The following barriers related to unpredictability of regulatory framework were detected in this study:

- Suppliers face uncertainty because of a newly liberalized regulatory environment or uncertain future development of the regulatory framework
- Uncertainty caused by industry actors influencing legislation, e.g. incumbent or associations shape legislation
- Uncertainty regarding future regulatory developments, especially in the field of digitalization and new technology
- Attitude of authorities hinders development of the market
- Uncertainty regarding environmental obligations and non-renewable generation capacity

4. **Access to innovation.** Most European energy market are currently designed based on practices as they were during the period of national monopolies by what today are incumbent suppliers. Allowing suppliers and new entrants to be innovative depends not only on the opportunity to compete on prices, but also to diversify, welcoming new products, market actors and business models. When national regulatory frameworks do not take into account innovation in the retail market (regarding e.g. availability and functionality of smart metering, the possibility of flexible contracting and tariffs, or whether the demand side can bid in the balancing system), this may pose a barrier for new market entries, particularly more modern players. If new entrants are to be enabled in order to increase the level of competition in the retail market, regulations must accommodate future developments on the energy markets, especially considering that in the future new entrants may not only be electricity and gas suppliers but also act as aggregators or energy service companies (ESCOs). European barriers relating to innovation-friendliness are as follows:

- Data protection issues
- Lack of incentivisation for novel pilot projects or post-pilot market rollout
- Lack of data for innovative product development
- No fit between new business models and existing regulation/obligations
- Missing flexibility in tariff structures
- Missing information and incentives for demand-side grid management
- Market structures do not incentivize novel products (missing perceived value)

1.1 Description of regulatory disincentivisation barriers in Hungary: Price regulation

Price regulation discriminates against certain suppliers. Several respondents in Hungary raised this as a barrier. Price-regulated markets can be explicitly discriminatory if they only allow one (or few) market participant to serve price-regulated customers. The level of discrimination depends on the specific design of the country regulation. For instance, by only allowing the incumbent suppliers to offer the regulated price to a specific customer segment, other market participants are per se excluded from this market.

European markets in which this barrier has also been indicated

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High penetration of price regulation. Several respondents in Hungary raised this as a barrier. The part of the market eligible for regulated prices is not (or only partly) contestable for a new entrant. Consumers that have access to regulated services are extremely difficult to reach with competitive offers. If this market segment is big, i.e., price regulation has high penetration, only a small part of the market (generally non-household customers) is contestable. Price regulation maintains the old structure of the market, where consumers do not face risks and do not have to care about comparing offers and choosing a supplier. Price regulation keeps the market in an immature phase where neither consumers nor suppliers can learn how a competitive market works. Prices are still regulated in Hungary for both sectors and the vast majority of households is served by former incumbents. The share of the regulated prices in the household electricity retail segment is over 95% and close to 100% in the gas market.

National issue

Price regulation persist in the electricity and gas market as well. The vast majority (close to 100%) of household consumers are served under regulated price regime.

Potential solutions

A phase out plan for electricity and gas market would support the retail market competition.
To decrease the negative social impacts of price release, the introduction of social tariff for vulnerable consumers can be a potential measure.

European markets in which this barrier has also been indicated

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PORTUGUESE BEST PRACTICE CASE: Roadmap for removal of regulated retail prices.

Portugal removed end-user price regulation for non-household customers and the transitional period ended in 2016. As part of the phase-out process, which started in 2010 for gas non-household customers and in 2011 for electricity non-household customers, a transitional period was defined by the government in Portugal in order to enable customers supplied under regulated end-user prices to choose a new market supplier and move to the liberalised market. During this period, the NRA (ERSE), sets a tariff (called the 'transitional tariff'), which may include an additional value, whose objective is to promote customers to switch to a market tariff.
Lastly, under the terms of Government Ordinance N. 39/2017 of 26 January 2017, consumers who still have regulated tariffs have a transitional period until 31 December 2020 to choose an electricity market supplier. While, under the terms of Government Ordinance N. 144/2017 of 24 April 2017, consumers who still have regulated tariffs have a transitional period until 2023 to choose a natural gas market supplier.

Low margin of regulated offer (margin squeeze). All respondents in Hungary raised this as a barrier. It is common across Europe that price regulation sets the regulated price to a defined level and allows all market participants to serve customers within this regulated segment. However, this can create a barrier in the market if the regulated price is set to such a low level that only companies that can benefit of economies of scale are able to generate a sustainable margin. All other market participants will be confronted with a margin squeeze, making it very difficult to compete. The greater the size of the regulated customer segment the stronger the barrier, as it reduces the contestable part of the market for smaller players. Furthermore, a lack of transparency in the pricing mechanism increases the barrier by making it difficult for market players to anticipate the regulated price and price against it.

National issue

The Hungarian mark ups in the household segment are significantly below the EU average level in both sectors. In case of gas there are periods with negative margin as well. Because of the price fixing the USP tariffs do not reflect the actual market situation.

Potential solutions

The application of regulated tariffs exclusively to the vulnerable consumers can significantly decrease the market impacts of the price regulation. Ex-post price regulation seems less problematic than ex ante regulations from competition point of view, in principle, while still allowing the control of consumer prices.

European markets in which this barrier has also been indicated

SPANISH BEST PRACTICE CASE: Low margin of regulated offer. Before 2014, the price regulation regime (PVPC) raised many complaints from electricity companies, claiming that the price was set below cost or may have too limited margin to cover the risk of activity.
Hence, a new Royal Decree was issued (RD 216/2014), establishing a new methodology for calculating the PVPC, including the energy cost, the applicable access tariffs and a commercial margin.
The main difference is that the energy cost is now calculated on an ex-post basis, using the average price resulting in the spot electricity market during the period covered by the bill. In the case of consumers with an operative smart meter installed (as of now, more than 98%), since 1 October 2015, a real consumption tariff following the spot price, is applied. The real time price is published by the electricity TSO through ESIOS platform.
Having a pass-through of the energy cost from the electricity spot market is considered as a best practice within the price regulation category. This prevents the energy component of the regulated tariff to be set below cost. However, the customers exposure to the volatility of the spot market may trigger further Government interventions.
Discussions still exist about the value of the commercial margin, which still is seen as too low by reference suppliers and limits the ability to compete of new and small companies. Also, having a price regulation in place that applies to the 95% of the retail market is perceived as hindering competition among suppliers. Suppliers wish a phase-out of price regulation regime, with a clear plan defined by the relevant institutions.

1.2 Description of regulatory disincentivisation barriers in Hungary: Burden (-sharing)

No barriers have been detected or mentioned by the respondents of our survey related to this topic in Hungary.

1.3 Description of regulatory disincentivisation barriers in Hungary: Regulatory unpredictability

Uncertainty regarding future regulatory developments, especially in the field of digitalisation and new technology. Some respondents in Hungary raised this as a barrier. New technologies require stable regulatory frameworks to avoid excessive business risk of suppliers. Missing smart meter rollout targets and slow progress of implementation can be a main source of delay in modernizing the retail market. Also, regulatory uncertainty regarding the future of demand response aggregation or other novel services can hinder investment/innovation in these areas.

National issue

Relevant elements of the regulatory framework are still missing or underdeveloped in several innovative fields such as the role of aggregators and smart meters.
There are some projects coordinated by HEA to create a regulatory sandbox for testing and implementing new solutions and frameworks for innovative services. The Ministry for Innovation and Technology operates an Energy innovation Council.

Potential solutions

We suggest the extension of the consultation with market players and common development of innovative services between the public and private stakeholders. The operationalization of the Innovation Council's guidelines would be important for deployment of new business models and solutions.

European markets in which this barrier has also been indicated

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1.4 Description of regulatory disincentivisation barriers in Hungary: Access to innovation

Lack of incentivisation for novel pilot projects or post-pilot market rollout. Some respondents in Hungary raised this as a barrier. Lack of financial incentives as well as missing technical support can be a major barrier for conducting pilots in DR and other novel technologies, as the piloting firm then bears all the risk for this experimental work. Projects started as pilots may even be tied by explicit conditions that they cannot remain on market after the completion of the pilot. This discourages participation, as there is no immediate commercial reward.

National issue

Some of the market players feel, that the network service providers (DSOs and TSOs) move very slowly towards the innovative solutions. The missing rollout plan for smart meters also has been mentioned.

Potential solutions

We suggest a more active multilateral cooperation between the different stakeholders leaded by the regulator to support the implementation of market innovations.

European markets in which this barrier has also been indicated

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FINLAND BEST PRACTICE CASE: Incentivizing novel projects

Finland was raised by respondents as the best example among the Nordic countries of authorities encouraging pilot projects in novel services/products. The high opinion was mainly due to the practice of encouraging post-market roll-out of the service/product upon project completion. This raises market players' confidence that the authorities take seriously the need for integrating novel players into the system, and the potential for soon becoming commercially active naturally acts as a strong attraction for companies to get involved in such pilots. Encouraging participation in this way benefits the energy system by making it more likely that projects and players providing crucial new developments will be found. Under the Finnish approach, with good opportunities for suppliers to cooperate with the TSO, flexibility development happens through pilots. Indeed, Finland's energy system is felt to be the most conducive (at least in the Nordics) for products such as DR and aggregation, indicating that lessons have been learnt effectively

Lack of data for innovative product development. Several respondents in Hungary raised this as a barrier. Smart meters open up opportunities for novel demand-side and aggregation services that rely on almost real-time consumption data to be able to match grid requirements and balancing product bids. Aggregators must be able to access customers and their data independently of suppliers, who in effect constitute a competitor for the DR provider/aggregator.

National issue

Several potential barriers have been mentioned here, mainly from the gas sector: respondents mentioned the missing or low quality of metering data from DSOs.

Potential solutions

Data standardization and harmonization of the DSO specific processes can reduce the entry barriers.

European markets in which this barrier has also been indicated

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Missing flexibility in tariff structures From our studies of this market, it appears that this would pose a barrier in Hungary. Tariff structures' potential to be flexible is a main driver of demand flexibility as it allows the design of incentive-based tariffs with several Time-Of-Use tariff zones, encouraging customers to consume when it is cheaper. This is true for grid as well as energy components. Rigid or flat structures, which are defined by regulation, hinder new and innovative demand-shifting offerings on the market.

National issue

The dominance of regulated prices for households reduces the opportunity of free market supplier to offer an incentive alternative tariff structure for this market segment.

Potential solutions

The solution can be the phase out or structural reform of the current price regulation.

European markets in which this barrier has also been indicated

AT BE BG HR CY CZ DE DK EE FI FR EL HU IE IT LV LT LU NL NO PL PT RO SK SI ES SE UK

LATVIAN BEST PRACTICE CASE: Grid tariff flexibility

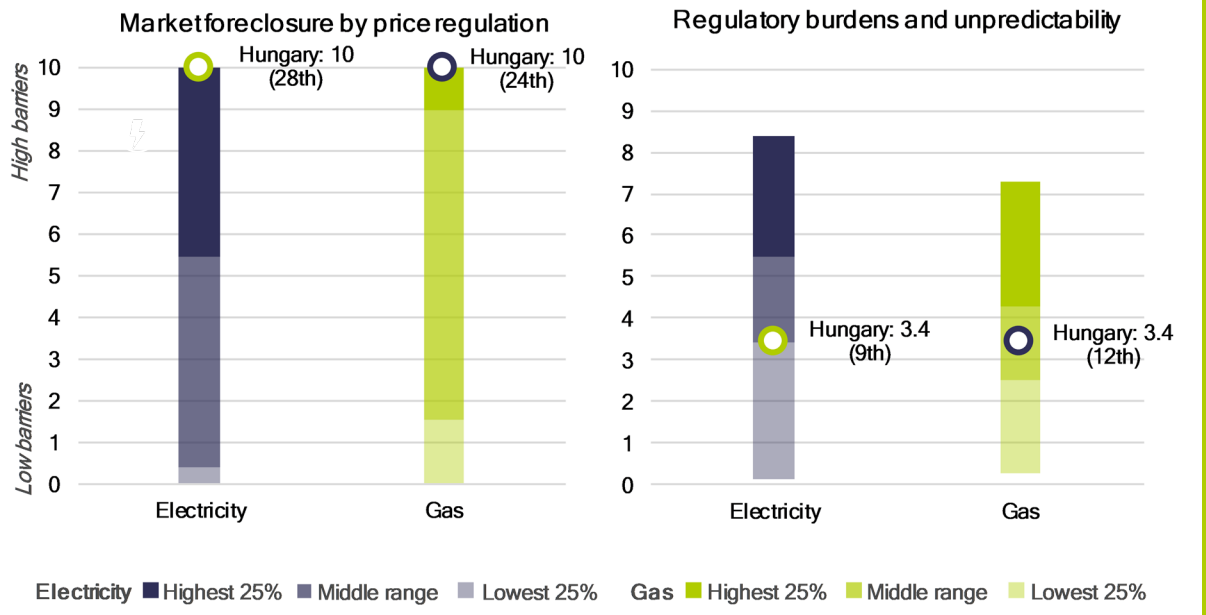
Inflexible tariffs can **no longer pose a barrier** to innovative products in Latvia, as recent regulatory changes enabled networks to charge more dynamically for distribution. In 2016 **differentiated distribution tariffs** were introduced for electricity market, which have been shown to **reduce end-user costs**. In 2019 differentiated distribution tariffs were introduced in natural gas market. Through these tariffs, end users are incentivised to decrease their connection capacities if appropriate, reducing their distribution costs and freeing up system capacity both for security and efficiency of supply and new connections.

1.5 Hungary's performance in this barrier category

The following figure shows quantitative indicators of how far regulatory disincentivisation acts as a barrier in this market. The values for Hungary are shown against the range across all analyzed countries. These scores contribute to the performance index. The performance indicators of regulatory disincentivisation are the following:

- **Market foreclosure by price regulation:** The index consists of two sub-indicators, the penetration of price regulation (among residual customers), and the mark-up of the regulated offer. A high score is attributed if the high share of the customers is supplied at regulated price, and the mark-up is significantly lower than the average mark-up on the competitive markets.
- **Regulatory burdens and unpredictability:** The index consists of two sub-indicators. Regulatory burdens reflect the non-energy share of the energy bill in an average household, which are regulated (taxes, network fees). Regulatory unpredictability was measured via the related question in the supplier survey conducted for this project. A high score is attributed if the share of the non-energy elements is high, and if survey respondents scored the question highly (as an important barrier).

Performance indicators



The Hungarian performance reflects the duality of the Hungarian retail market. The high share of regulated segment for household customers both in the electricity and natural gas sector, and the low margin of the regulated tariff resulted the highest score for the country, as the competition practically disappeared in the household segment. In contrast, there is better perception in related to the sector regulation (except the household price fixing). Both in electricity and gas Hungary performed in the mid-range of the European countries in this index component.

2) Market inequality

Within market inequality, barriers across Europe have been sub-categorised into two areas encompassing 8 specific barriers[8]:

1. **Unbundling and market power.** In order to facilitate better competition and improve performance of the individual parts of the energy companies, the Energy Directives introduced rules for legal, functional and accounting unbundling between DSOs and supplier. Although legal unbundling has been implemented throughout all EU member states, barriers arising from vertical integration can still be observed in many markets, raising the question if the required level of unbundling is sufficient in order to meet the goal of a fair and competitive retail market. Companies serving less than 100 000 customers are only obliged to implement accounting unbundling.

   In order to avoid confusion among end customers between the separate parts of integrated energy businesses, brand unbundling has been a focus area for NRAs over the last years. Nevertheless, in several EU countries, the difference in the branding of the supplier and the DSO is perceived as insufficient. Strategic and unfair advantages for incumbent suppliers around transparency, pricing and access to information and data occur in most of the European countries studied. Access to production capacities can also be limited for small suppliers if market players with a large generation portfolio can withdraw production capacity from the accessible markets. Balancing and ancillary services markets can also be distorted as they are often still designed to mainly benefit large-scale generation, discriminating against smaller market participants. Below, we describe these barriers related to market power in more detail.

   Across Europe, the following specific barriers around “unbundling and market power” were detected in this study:

   - Lack of brand unbundling
   - Discriminating, strategic behaviour of incumbent, and obstruction by other market players.
   - Strategic, unfair advantage of vertically integrated market players and lack of transparency.
   - Limited or biased access to production.
   - Discrimination against new and small market players in capacity and ancillary services markets.

2. **Equal access to and maturity of wholesale market.** The wholesale markets present one of the most important sources for energy procurement for all market participants. New and small suppliers tend to have weaker bargaining position in bilateral negotiations, which occurs higher sourcing costs, therefore leading to a competitive disadvantage. Access to a well-functioning wholesale market (an energy exchange) therefore enables smaller suppliers to buy energy for competitive prices.

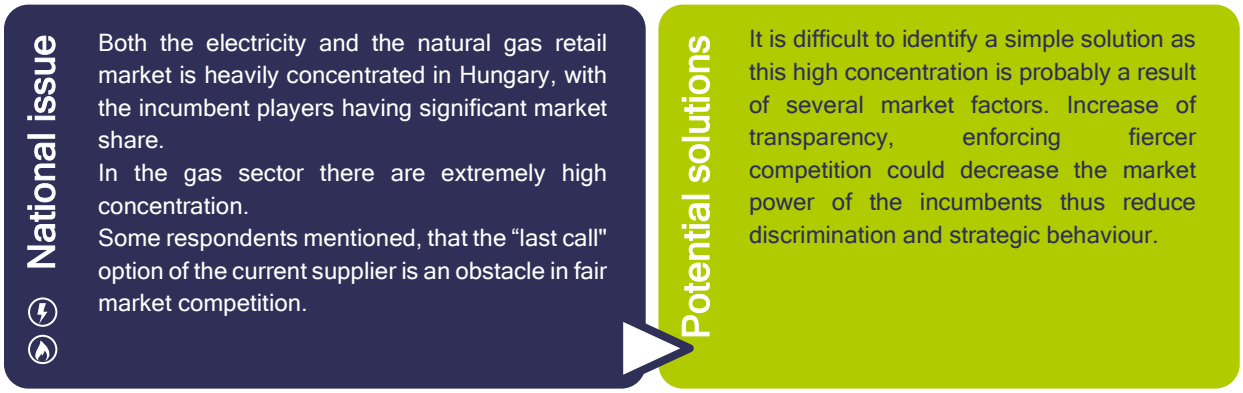
[8] Please note: these definitions are Europe focused, not Hungary specific. Highlighted barriers have been identified as country specific.

Barriers related to the wholesale market can arise by discriminatory market platform access and the absence of any viable alternative. Furthermore, a lack of available products and low liquidity can both lead to an increase in risk, disadvantaging small market participants substantially more than large, established suppliers. Barriers related to "equal access to and maturity of wholesale market", detected in this study are as follows:

- Discriminatory market platform access (standards, guarantees, etc.)
- Low liquidity in the wholesale market
- High price or volume risk in energy procurement

2.1 Description of market inequality barriers in Hungary: Unbundling and market power

Discriminating, strategic behaviour of incumbent, and obstruction by other market players. Some respondents in Hungary raised this as a barrier. The incumbent/existing suppliers are able to use tactics in pricing, customer access, combined billing (including the cost of social tariffs) etc. not available to new entrants. For example, large established players can afford to apply predatory pricing for certain customers to retain them. Market players with a lot of power, i.e. market share, may act in an obstructive way, especially around data exchange. This can especially disadvantage small suppliers with only a limited customer base to draw data from. If regulated DSOs are involved in other areas of activity such as customer care or flexibility services, it can narrow deregulated suppliers' potential to expand into these areas.



European markets in which this barrier has also been indicated

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Strategic, unfair advantage of vertically integrated market players and lack of transparency. Some respondents in Hungary raised this as a barrier. DSOs are required to separate distribution activities from supply both legally and in practice, so that unregulated distribution activities do not cross-subsidise any supply business. However, co-ownership is allowed, and small DSO/supplier companies are often exempted from any unbundling. Vertically integrated companies are still able to use their market power to gain an advantage in terms of information, allowing

them for example to target customers based on consumption profiles or win back customers during the switching process, or in terms of access to financing through e.g. DSOs favouring sister companies when procuring services.

National issue

Several respondents claimed that former incumbents with "inherited" SME portfolio with relatively higher margin (for example margin on supply of grid losses) can cross-subsidize customers in more competitive segments.

Potential solutions

If DSOs and suppliers are only legally unbundled there is always a risk for strategic advantage of the incumbent. These risks are only avoidable, by even stricter separation of roles.

European markets in which this barrier has also been indicated

AT BE BG HR CY CZ DE DK EE FI FR EL HU IE IT LV LT LU NL NO PL PT RO SK SI ES SE UK

GREAT BRITAIN BEST PRACTICE CASE: Unbundling of DSOs and supply businesses

Great Britain provides an example of well-functioning separation between distribution and supply. Ten of the 14 electric DNOs (distribution network operators) are free standing companies, while 4 are part of groups that include generation and supply businesses. Of the 4 companies that distribute gas, only 1 is part of a group that also owns a gas supply business. The companies that have generation or gas supply affiliates are effectively unbundled. In this study, we found no evidence of incomplete unbundling presenting a problem in Great Britain. DNOs are prohibited from providing end-user services, they are invisible to the customer, and no suppliers in the study had experience of the supplier/DNO relationship being exploited.

2.2 Description of market inequality barriers in Hungary: Equal access to & maturity of wholesale market

High price or volume risk in energy procurement. Some respondents in Hungary raised this as a barrier. Volume and price risk, due to the difference in time and volume between procurement and billing, raises risks for market participants and therefore presents a barrier. This is a particular problem in combination with a lack of hedging opportunities that would allow companies to insure against wholesale price fluctuations.

National issue

Respondents claimed that high price and volume risk creates an entry barrier. Some of them mentioned that the deposit need is relatively high for a new entrant with smallish portfolio.

Potential solutions

There is no simple solution for this issue as the regulator should take care in parallel the viewpoints of the new entrants and the market stability.

European markets in which this barrier has also been indicated

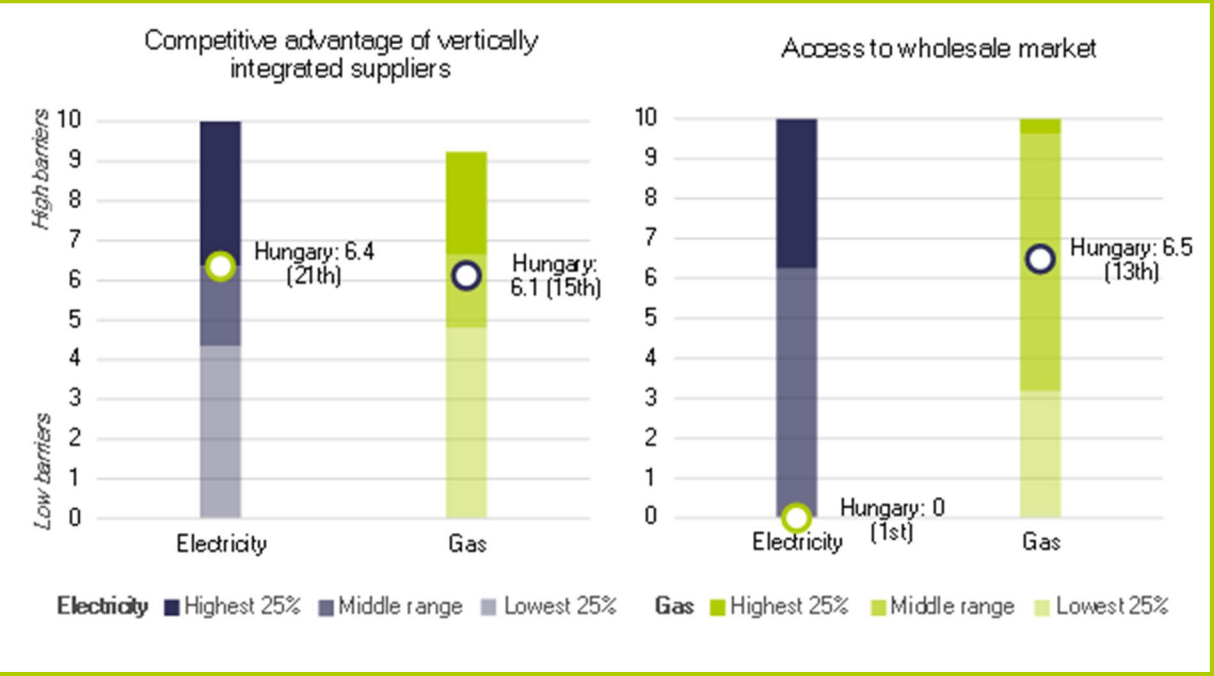
AT BE BG HR CY CZ DE DK EE FI FR EL HU IE IT LV LT LU NL NO PL PT RO SK SI ES SE UK

2.3 Hungary's performance in this barrier category

The following figure shows quantitative indicators of how far market inequality acts as a barrier in this market. The values for Hungary are shown against the range across all analyzed countries. These scores contribute to the performance index. The performance indicators of market inequality are the following:

- **Competitive advantages of vertically integrated players.** The index consists of two sub-indicators, the market share of vertically integrated suppliers (on the residential market), and the strictness of DSO unbundling. A high score is attributed if the vertically integrated suppliers have a high aggregated market share, and the unbundling regime is not very strict (brand unbundling is not in force, high share of local, integrated companies).
- **Access to wholesale market**. The indicator measures the accessibility of the wholesale market by quantifying the liquidity of wholesale markets. High score is attributed if the traded volume is relatively low compared to the consumption of the country (churn rate). Traded volume includes volumes that are traded

Performance indicators



In case of competitive advantage of integrated players, Hungary was ranked to the upper-mid range in both sectors related to the market power of vertically integrated companies. Only a few independent retailers mentioned this as a significant barrier.
The Hungarian wholesale market is well developed, there is increasing volume both in electricity and gas exchanges. The scores reflect the 2018 trading volumes at the organizes markets. The good result in electricity sector reflect Hungary's local hub position in the north-south electricity transfer.

at hub as recorded by brokers (OTC) or exchanges and does not include 'contracted' (LTC or other bilateral deals) volumes which are conducted 'off market'.

3) Operational and procedural hindrances

Within operational and procedural hindrances, barriers across Europe have been sub-categorised into two areas encompassing 13 specific barriers[9]:

1. **Sign-up & operations compliance.** Sign-up, licensing or registration, along with other administrative requirements or system establishment such as arranging contracts with relevant stakeholders (TSOs, DSOs, BRPs) are among the first steps that a new supplier undergoes to enter and operate in a retail energy market. To deliver natural gas or electricity to final consumers in Europe, an energy supplier usually needs to be registered to a certain institution list, or to proceed with a notification, or follow a process to grant a licence. Entrance processes for suppliers often requires commitments such as a minimum standard of customer service obligations, requirements on service quality, to provide financial guarantees or to have a communication system in place.
   In most responding NRA countries, suppliers need to register and make contracts with certain stakeholders (mainly TSOs and DSOs) to procure the access to the energy grid: transport capacity, balancing. This procedure can be very different from a country to another. Accessing wholesale markets and balancing may also require a license or prior agreement/registration with the market operator. In some markets, business processes to enter and operate in the retail market can be extremely detailed and burdensome. The lack of a functioning national wholesale market may also hinder the entrance of retail companies that are not vertically integrated.
   Across Europe, the following specific barriers around "sign-up & operations compliance" were detected in this study:

- Poor availability of information for market entrants & active participants
- Heavy administrative process for entry (registration / licensing)
- High financial requirements (incl. long working capital cycles) and forced risk during operations
- Excessive reporting requirements during operations
- Excessive information requirements around billing and energy labelling
- Highly complex or country-specific systems & processes
- Regional differences or differences between DSOs within a country

[9] Please note: these definitions are Europe focused, not Hungary specific. Highlighted barriers have been identified as country specific.

- Cumbersome or biased switching process
- Unduly burdensome environmental obligations
- Unduly burdensome or insufficiently regulated market exit

2. **Data access & processes.** Data access and management refers to the processes by which data are sourced, validated, stored, protected and processed and by which it can be accessed by suppliers or customers. In a well-functioning energy retail market, it is important that the information required to operate in the market is available to newcomers (subject to applicable legislation on data protection). This may include information on, for example, individual consumption or more specific meter details. This data is required in order for suppliers to carry out their market role, such as initiating a switch, or billing a customer. A standardized approach to the provision and exchange of data creates a level playing field among stakeholders and helps to encourage new, challenging market actors to enter the market. In order to avoid data management and access processes acting as a significant barrier to entry, Member States' initiatives to standardize data format and processes, including investments in data hub infrastructure, have the potential to make a positive impact.
   European barriers relating to "data access & processes are as follows:

- Lack of data hub
- Complex, heterogenous IT infrastructure and/or low level of digitalisation
- Missing access or poor quality of operations-critical data

3.1 Description of operational and procedural hindrances barriers in Hungary: Sign-up & operations compliance

Excessive reporting requirements during operations. Some respondents in Hungary raised this as a barrier. Excessive reporting requirements to governmental bodies, the NRA and other market participants cause high administrative and hence infrastructure costs to suppliers. This is a barrier to entry and operation in cases where suppliers cannot see how this reporting is necessary to protect customers or benefit the market and can particularly affect small suppliers.

National issue	Potential solutions
There are various reports and statistics which suppliers need to fill repeatedly or by request of HEA. Some cases the formats of the reports are not well designed and there are overlaps between the various requests of the regulator.	A review of the current data collection system and the implementation of more user-friendly interfaces could help to reduce the cost and time of reporting.

European markets in which this barrier has also been indicated

AT	BE	BG	HR	CY	CZ	DE	DK	EE	FI	FR	EL	HU	IE	IT	LV	LT	LU	NL	NO	PL	PT	RO	SK	SI	ES	SE	UK
	■											■	■														■

3.2 Description of operational and procedural hindrances barriers in Hungary: Data access & processes

Missing access or poor quality of operations-critical data. Some respondents in Hungary raised this as a barrier. Non-availability, delayed or low quality of operations-critical data (incl. smart meter data) presents a main barrier as it increases the need for manual processing and therefore costs. Especially in combination with information advantage, this can give of certain market participants such as DSOs and incumbents a major advantage in providing the required service level to the customers.

National issue	Potential solutions
In gas sector some supplier claimed that the quality, accuracy and timely manner of operations-critical data should be improved, mainly the quality of the metering data of DSOs.	Standardization of data format and access would improve the availability of operation-critical information and reduce the manual work.

European markets in which this barrier has also been indicated

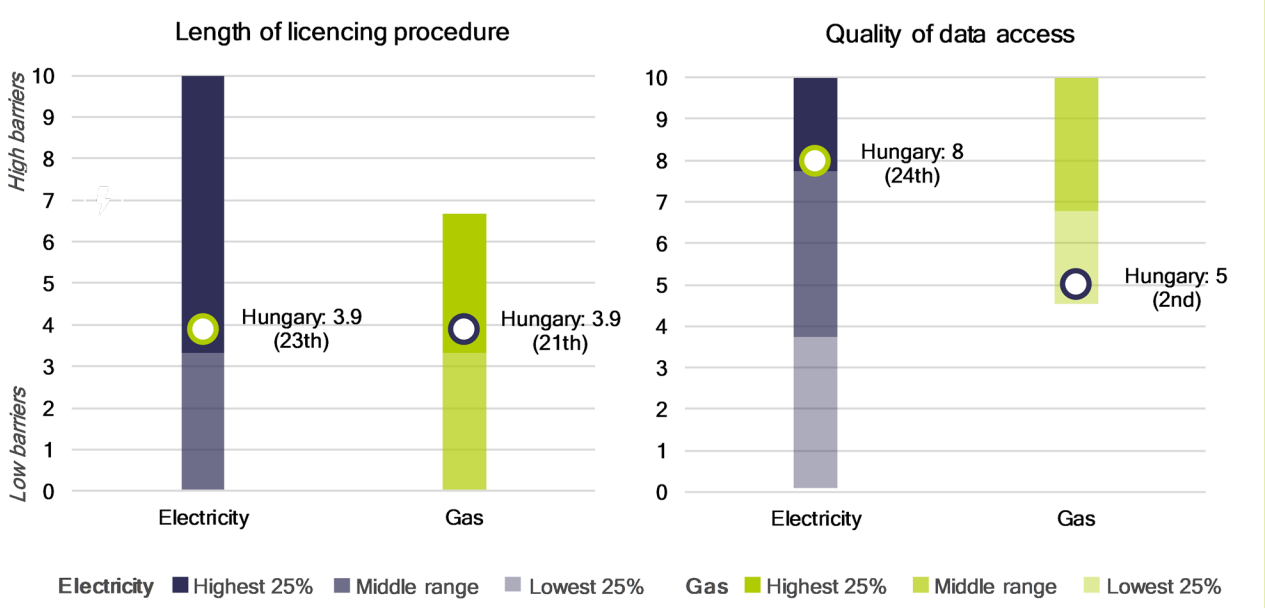
AT	BE	BG	HR	CY	CZ	DE	DK	EE	FI	FR	EL	HU	IE	IT	LV	LT	LU	NL	NO	PL	PT	RO	SK	SI	ES	SE	UK
■		■	■	■	■	■	■		■	■		■	■	■			■			■		■	■		■	■	■

3.3 Hungary's performance in this barrier category

The following figure shows quantitative indicators of how far operational and procedural hindrances act as a barrier in this market. The values for Hungary are shown against the range across all analyzed countries. These scores contribute to the performance index. The performance indicators of operational and procedural hindrances are the followings:

- **Length of licensing procedure:** The complexity of the licensing procedure is quantified with the legal deadline of the licensing procedure. High score if attributed if the regulator has more moths for authorization, while 0 score is attributed if there is no licensing obligation in the country,
- **Quality of data access**: The barriers relating to the quality of data access are measured with a checklist indicator, which focuses on the DSO's practices regarding data collection and access provision to suppliers. High score is attributed if the format of the data provision is not standardised, third party access is not available via website or data hub, and the smart meter rollout is small.

Performance indicators



The licencing period is a bit over the European average, which resulted an upper-mid score for Hungary. The quality of data access indicator shows differences between the electricity and gas sector. The main reason behind the bad results in the electricity sector is the slow smart meter rollout.

4) Customer inertia

Within operational and procedural hindrances, barriers across Europe have been sub-categorised into one area encompassing 6 specific barriers[10]:

1. **Customer orientation.** Whether customers want to or can engage with the market depends on a broad range of market characteristics, including how well authorities inform and support customers and how energy companies are viewed by the customer. For example, if there is no trusted central place to compare offers from different suppliers, customers may struggle to make an informed choice; or if customers perceive all energy companies as irresponsibly profit-driven, or providing a poor service, they may feel there is nothing to be gained from switching. Moreover, across Europe, most energy markets have been liberalized relatively recently (last 20 years, some only a few years ago), so for a considerable portion of customers the potential for them to engage may still feel unfamiliar.
   Across Europe, the following specific barriers around "customer orientation" were detected in this study:

   - Lack of information regarding available offers and switching possibilities
   - Low customer awareness or interest makes it difficult to attract customers
   - **Insufficient price signals for end-users**
   - Changing supplier is cumbersome or has little pay-off for the customer
   - Consumers prefer status quo
   - Lack of trust in new or foreign suppliers and in new technology

4.1 Description of customer inertia barriers in Hungary: Customer orientation

Insufficient price signals for end-users. All respondents in Hungary raised this as a barrier. Many factors can mean that market price signals do not reach end users, e.g. small energy component of bill, low energy prices, simplified/estimated settlement, etc. With limited price signals, there is little incentive for customers to engage with the market as they have limited power to bring their costs down, or to see an impact of their behaviour on their bills.

[10] Please note: these definitions are Europe focused, not Hungary specific. Highlighted barriers have been identified as country specific.

National issue

The Hungarian households buy the electricity and gas on fixed regulated prices. The end consumer price regulation does not leave significant place for competitive offers. However, in the non-household market segment the free-market offers are competitive and free-market suppliers overperform the regulated price alternatives.

Potential solutions

The reform of the price regulation and the phaseout of end consumer price regulation can make more attractive the entrance to the household electricity and gas supply market.

European markets in which this barrier has also been indicated

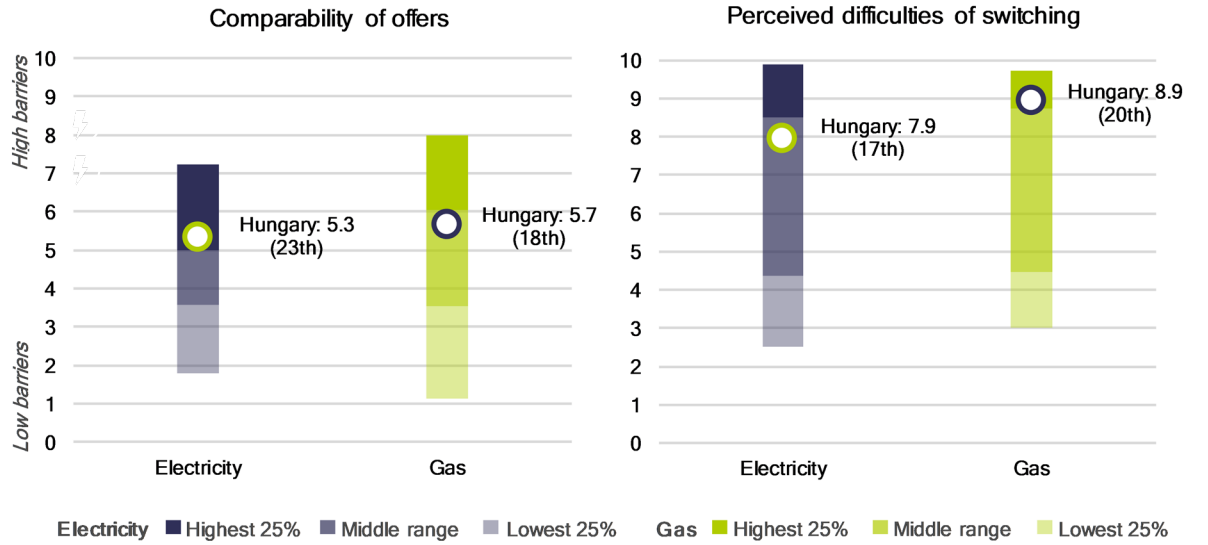
AT BE BG HR CY CZ DE DK EE FI FR EL HU IE IT LV LT LU NL NO PL PT RO SK SI ES SE UK

4.2 Hungary's performance in this barrier category

The following figure shows quantitative indicators of how far customer inertia acts as a barrier in this market. The values for Hungary are shown against the range across all analyzed countries. These scores contribute to the performance index. These scores contribute to the performance index. The performance indicators of customer inertia are the followings:

- **Comparability of offers:** The index consists of two sub-indicators. The first measures consumer's ability to compare offers, based on a survey commissioned by the DG Justice and Consumers. The second is a checklist indicator which quantifies the availability of comparison websites, based on their number and functionalities. High score is attributed if the consumers gave low scores for comparability, and there are no comparison websites in the country.
- **Perceived cost of switching:** The difficulties of the switching process is also measured based DG Justice's survey. The indicator incorporates the experience and opinions of customers who have switched, and also of those who haven't because they faced obstacles or thought it might be too difficult. High score is attributed if the high share of consumers has bad experience or opinion on switching process among all customers who considered to switch.

Performance indicators



The Hungarian scores highly influenced by the current price regulation scheme and market structure. In case of the gas sector there is no competition in the household segment, and the level of competition is very low in the household electricity market as well. This fact is the major explanatory factor of the Hungarian scores.

FINDINGS & RECOMMENDATIONS

The Hungarian energy retail market shows a dual structure: while in the non-household segment there is an intensive competition between dozens of free-market electricity and gas retailers, in contrast, the competition practically fully disappeared in the household energy retail market. The main reason behind is the changed political view of the Hungarian government from 2011, when the price-cut and end-user price regulation has been introduced. From that time, the development of the household retail market has stopped, and the lower regulated tariffs encouraged also the recent free-market customers to shifting back to the regulated market. Without a deep restructuring of the current price regulation, it seems not realistic the increasing of the competition in the household market segment.

We think that it would be prerequisite of a stronger competition the modification of the current universal right of each Hungarian household, independently from consumption level and financial background to a more targeted system which subsidizes only vulnerable groups of society.

In case of gas the retail sector significantly changed recent years. The role of the state-owned integrated undertakings significantly strengthened, as foreign companies left the market. For now, the supply of households is characterized by a “single supplier” structure. Because of the politically defined customer prices it is unattractive to enter the household market neither in case of gas, nor in electricity.

The period from 2008 (year of full market liberalization) until 2011 demonstrated, that the general framework of the Hungarian energy retail market is well-defined and support the entrance of new companies. However, from 2012 the changing political intent demolished the market for household customers.

It is important to highlight, that the free-market segment is more attractive for new entrants. The share of the independent retailers increased up to 30% in electricity and 25% in gas sector. Over two third of the overall consumption of the country is served by the free market.

The wholesale market is well developed in regional context. There are various sources for free market companies including access to local production and import.

Although in Hungary the former incumbent players still have strong market share in retail, the new entrant competitors did not mention serious problems related to the discrimination by the network companies of the integrated undertakings.

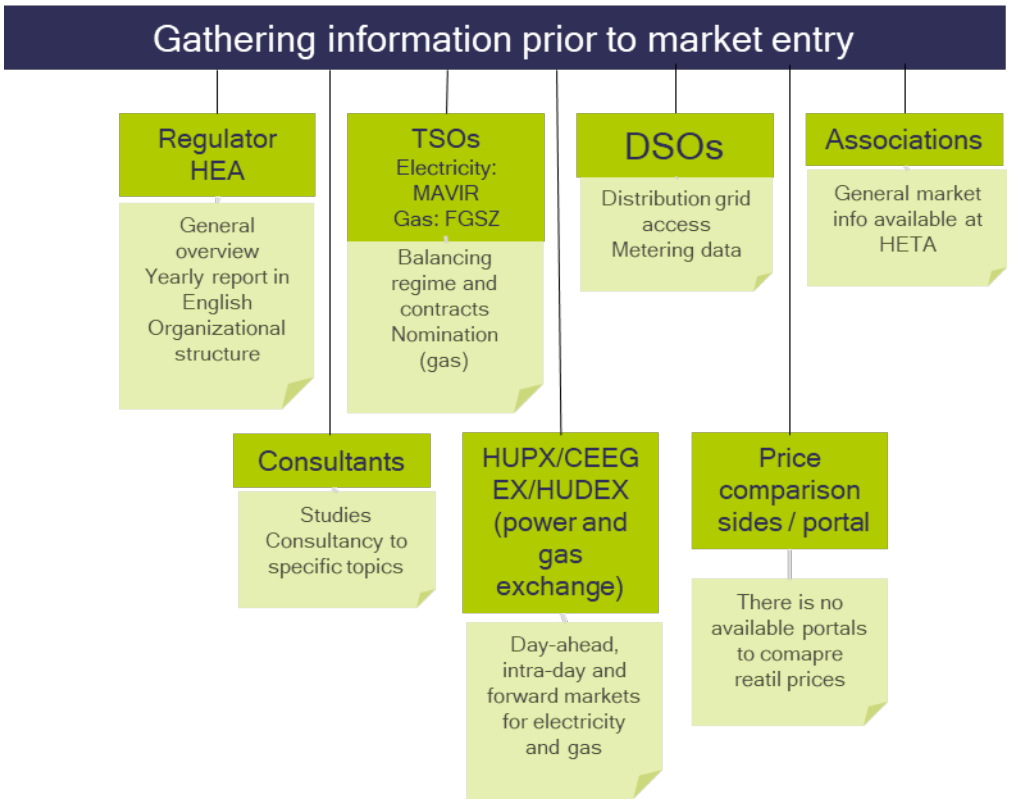
Close to all energy companies criticized the current taxation system. Energy companies need to pay a highly unfair, discriminative additional corporate-type tax (named “Robin Hood” tax), which is a highly reduces the attractiveness of the new investments in the country. The turnover-based supervisory fee is also a burden for trading companies (main for wholesalers) to use more actively the physical trading opportunities.

In case of the technical background of the Hungarian electricity and gas market, our study has find some minor issues. Hungary is a laggard in the implementation of smart meters. The exact on-time available meter data are highly important for a competitive market with high switching rate. We think, as the political intent will change on retail price regulation, the development of smart meter infrastructure of household customers should be a highly important element of the market development. But under the current circumstances, smart meters wouldn’t help to increase the competition.

APPENDIX 1: PROCESSES

This section describes market processes in energy retail in Hungary. This provides context for the market barriers described above by giving a high-level overview of the most critical aspects involved in establishing and operating as a supplier in the national market. The stages of market entry and operation are described in sequence, each with an illustration ("process map") showing that stage's various processes together with comments/details on market specifics.

1) Information gathering before market entry



In this subsection we report barriers arising as a consequence of the difficulties that suppliers are experiencing when gathering information to enter the Hungarian electricity and gas retail market.

When a retail market is properly working, the information required by a newcomer to study and implement the entrance and operation in a market is of a great importance. This include, for instance, information on end-user's consumption, metering details, switching rate etc.

Relevant comments on information gathering

As a part of the country report preparation we have studied the available written sources and made interviews with representatives of the regulatory authority and market associations. There were very few comments on potential barriers related to information collection and because of the quality of the information in Hungary.

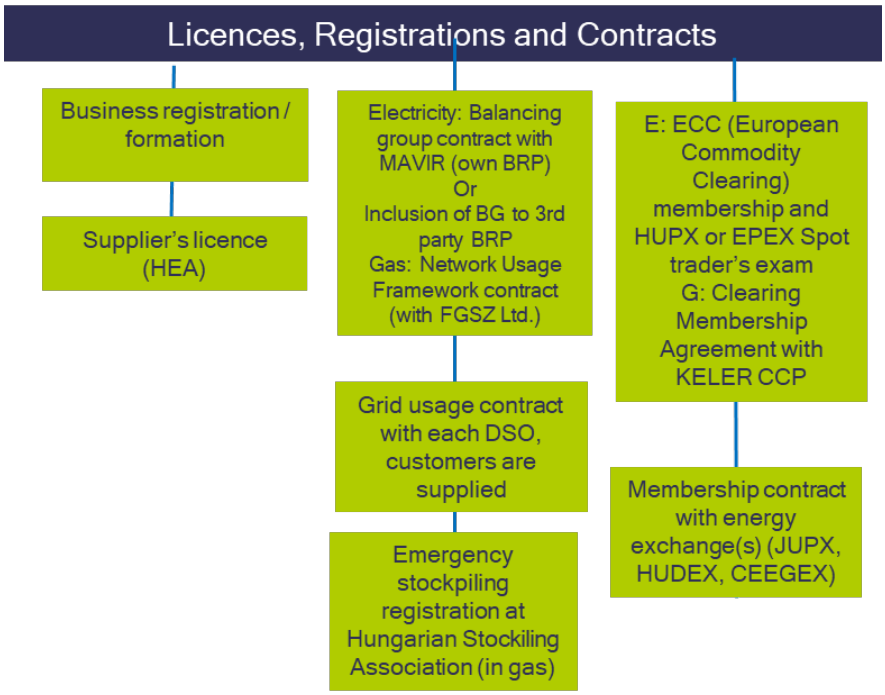
HEA publishes monthly market monitoring reports on electricity and natural gas market. These reports are both available in English at the portal of the authority.[11] There is also available a detailed information package about the licensing procedures of electricity traders.[12]

The Hungarian Energy Exchanges (HUPX for electricity, CEEGEX for natural gas and HUDEX for derivatives) are also publish the market data in English and Hungarian.[13]

English language information also available at TSOs (MAVIR and FGSZ). There are some remaining issues related to the availability of materials in English:

- The "Legislation" menu is still "under construction" in the portal of HEA
- An information package about the licensing procedure in natural gas sector is not available
- Online tariff calculator is not available neither on the regulator's website, nor at an independent stakeholder.

2) Licenses, registrations and contracts



Further comments

- The sale of electricity and gas to customers (both household and commercial) requires an energy **trading licence**. The Hungarian Electricity and Gas Acts distinguishes between a so-called restricted trading licence, which entitles its holder to pursue wholesale electricity trading only ("Limited Licence") and a so-

[11] http://www.mekh.hu/publications

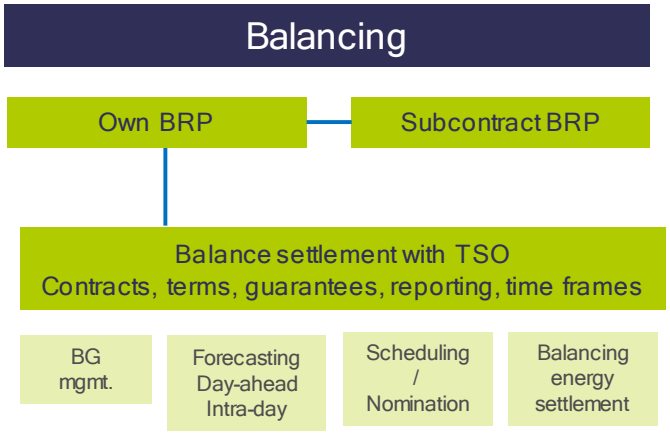
[12] http://www.mekh.hu/application-forms-for-licence-holders-in-the-electricity-sector

[13] https://hupx.hu/en/ https://ceegex.hu/en/

called full scale trading licence, which entitles its holder, in addition to Wholesale Activities, to directly supply customers, including both industrial and household end-customers. In case of gas a special additional licence required to serve households

- Foreign energy supply companies should be seated in the EU
- The gas universal service provider(s) shall have, directly or indirectly, a natural gas stock on 1st of October, corresponding to at least 60% of the highest winter consumption of the service area in any of the past 120 months
- Registration is eased with registration forms and online services
- Retailers who serve household consumers are required to set up and operate a customer service department for handling customer notices
- Distribution grid contract must be concluded with each DSO.

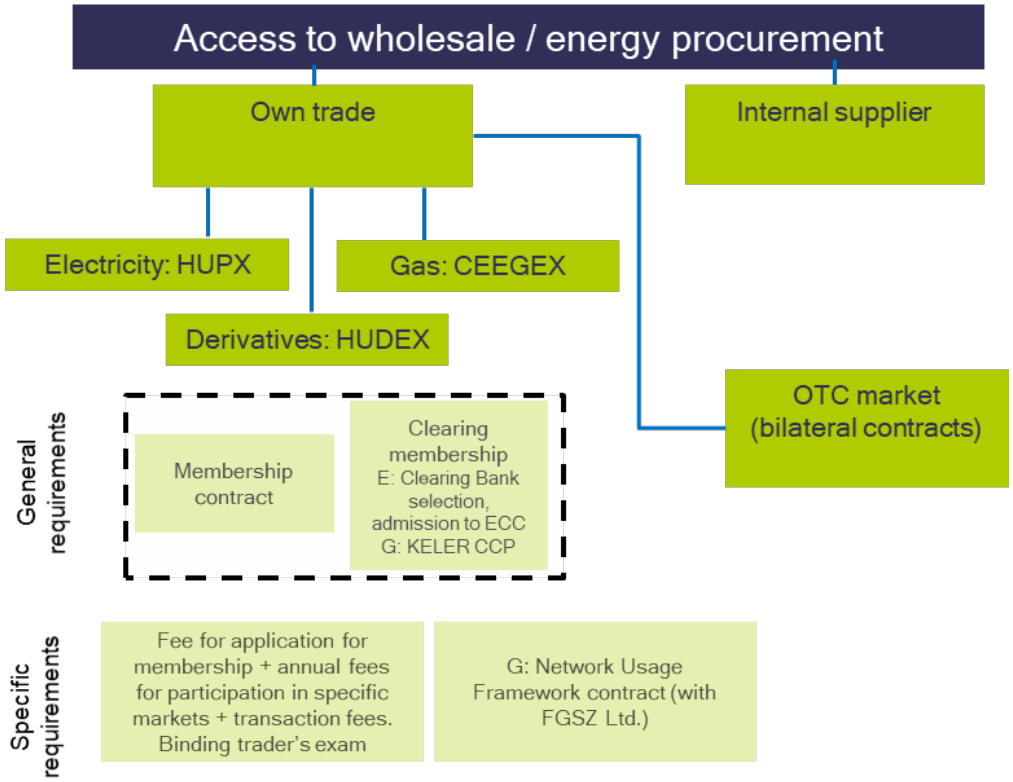
3) Balancing



Further comments

- TSOs procure the balancing energy (auctions)
- High complexity in forecasting due to complex load profiles and calculation methods
- Electricity: Slight decrease of the active balancing groups because of the penalty regimes.

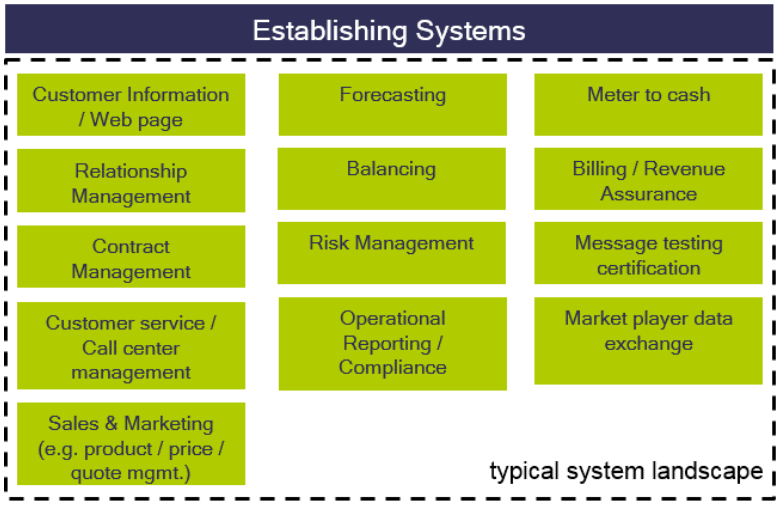
4) Wholesale



Further comments

- Liquid and developing spot markets, spot liquidity is good
- Well prepared exchange data and market information. Information available in English as well
- Supervisory fees are calculated on turnover basis. This calculation method brakes the wholesale activities.
- Deposit need (clearing house) is relatively high for a new entrant.

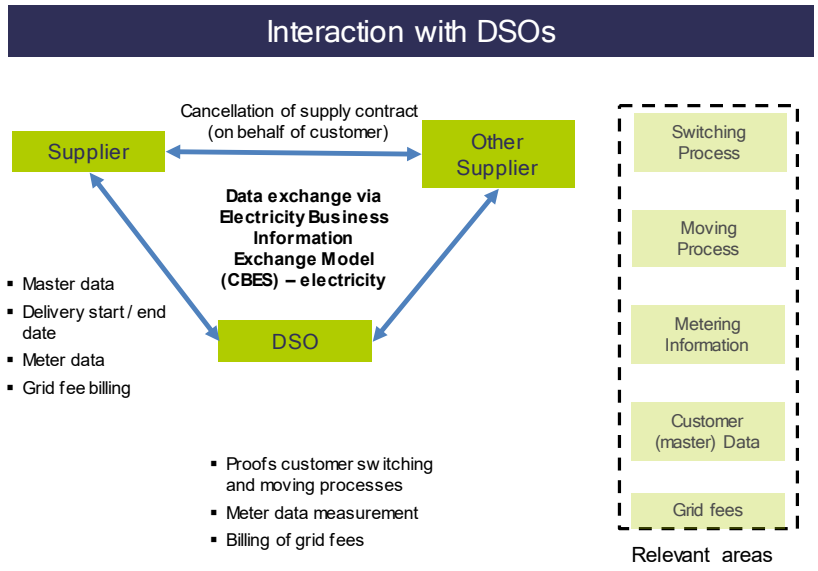
5) System landscape



Further comments

- In general, there is no obligation to run specific systems in-house: almost everything could be outsourced to third parties or to group share service centers
- short term capacities are available on DSO as well as TSO market
- Processes are well defined in several codes and manuals (commercial, operational)
- Regulated billing format for USPs
- Exchange based pricing for end customer (floating price contracts) are commonly used
- Poor digital interfaces (between market players or towards customers)
- Lots of specific info available only in Hungarian;
- TSO deposit need is relatively high for a new entrant with smallish portfolio
- Bills are too detailed and includes some unnecessary information.

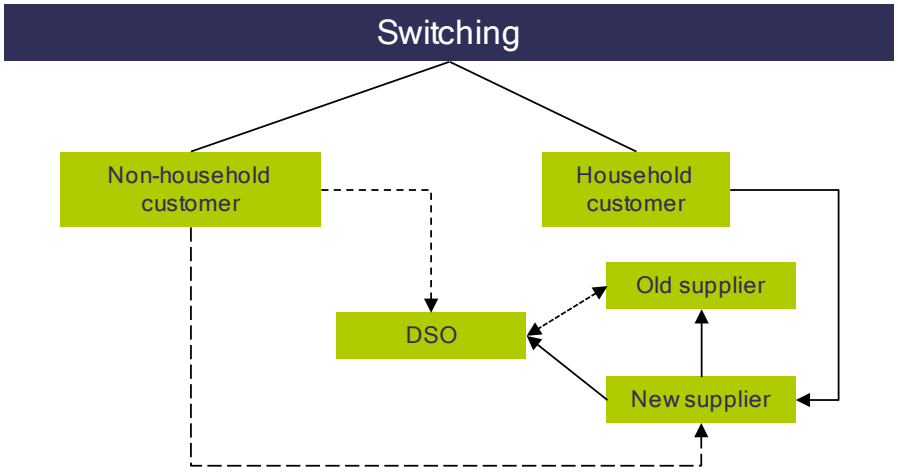
6) Supplier interaction with SII data hub and DSO



Further comments

- Electricity and gas DSOs are legally separated from former distribution companies
- Remote metering is compulsory for industrial consumers over a consumption limit.
- There are only pilots for smart meter deployments.
- Challenges gathering information from DSOs or meter point operator
- DSO-specific process handling
- Decentralized databases, high degree of manual work

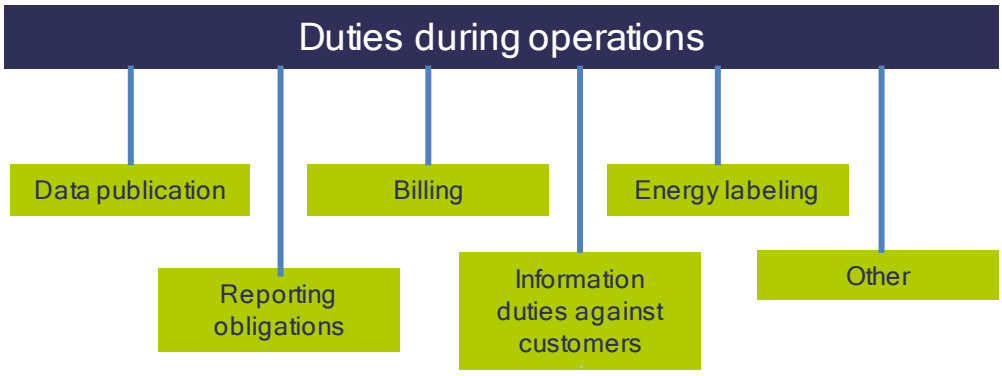
7) Customer switching & moving



Further comments

- Switching process and period is well defined
- Factually there is no switching in household segment. However, even the USP customers can easily change to liberalized free market suppliers;
- Energy brokers operates in the market (with industrial consumers' focus). The brokers create a lot more possibilities for new suppliers, because they work with customers who otherwise would be less active on the lookout for new supplier.
- Switching process favors existing suppliers (non-standardized procedures, no single-platform for all agents);
- Last call option is possible (meaning consumers have to show the best offer they got for the next period, and if current suppliers decides so and matches the offer, they can keep the customers.)
- No comprehensive pricing tool in place; information on pricing details and quality of services is not available.
- Incumbents with "inherited" SME portfolio with relatively higher margins, margin on supply of grid losses, etc. can cross-subsidize customers in more competitive segments.

8) Operational obligations / duties



Further comments

- Regulated prices for households under the control of HEA and Ministry of innovation and Technology.
- Companies that do not deliver electricity or gas to households can define freely their prices.
- License holders are required to supply data to HEA on a regular basis and occasionally also at HEA's request.
- Suppliers are obliged to supply data to HEA monthly, quarterly semi-annually and annually through HEA's electronic platform. These data supply requests concern traded quantities, financial figures, ownership structure, headcounts, contact details and corporate data.
- Price regulation (and other regulations related to residential customers and the state's intention to control this market) prevents market participants to act on the household market segment.
- Energy sector-specific taxes; surcharges.

9) Market exit

Further comments

- Energy suppliers can leave the market, but they must fulfill their obligations in the role as energy supplier.
- There are no penalties for leaving the market per se.
- Conditions for cancellation of bilateral contracts (e.g. with service providers or balancing responsible parties) are depending on the individual contracts

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