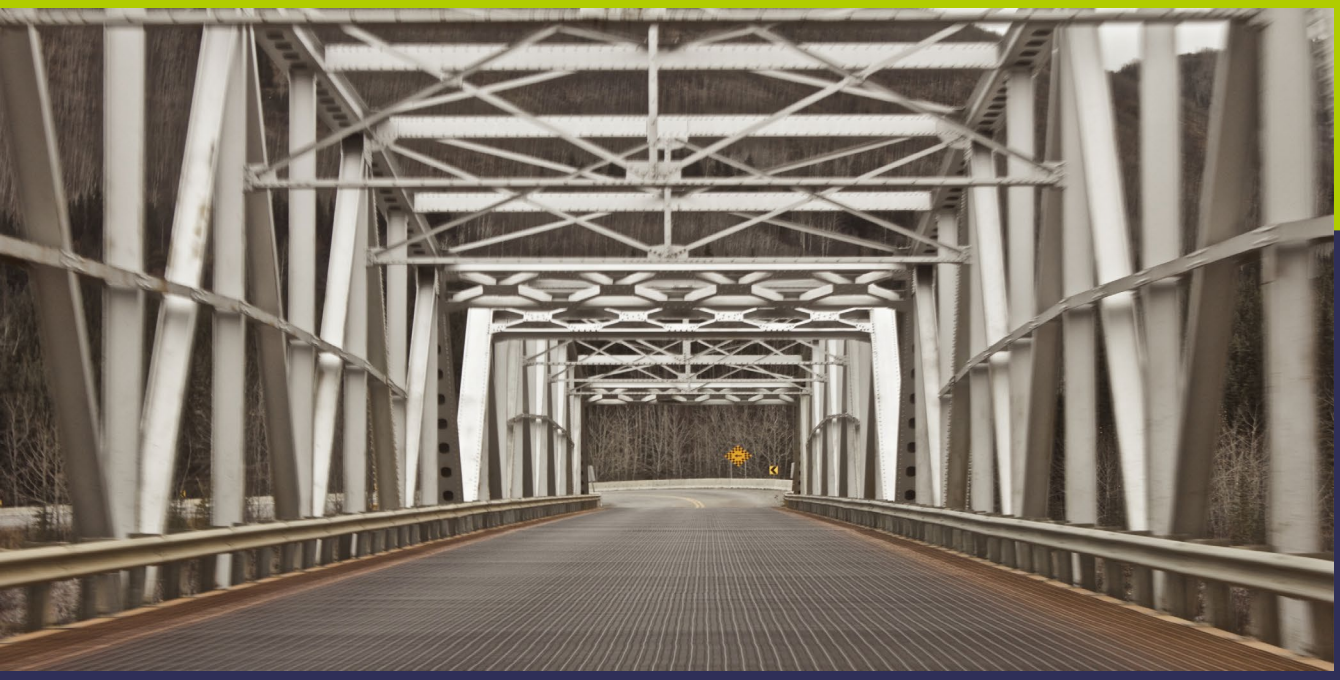
European Commission

EUROPEAN BARRIERS IN RETAIL ENERGY MARKETS



POLAND
Country Handbook

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Energy

EUROPEAN BARRIERS IN RETAIL ENERGY MARKETS PROJECT: Poland 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.

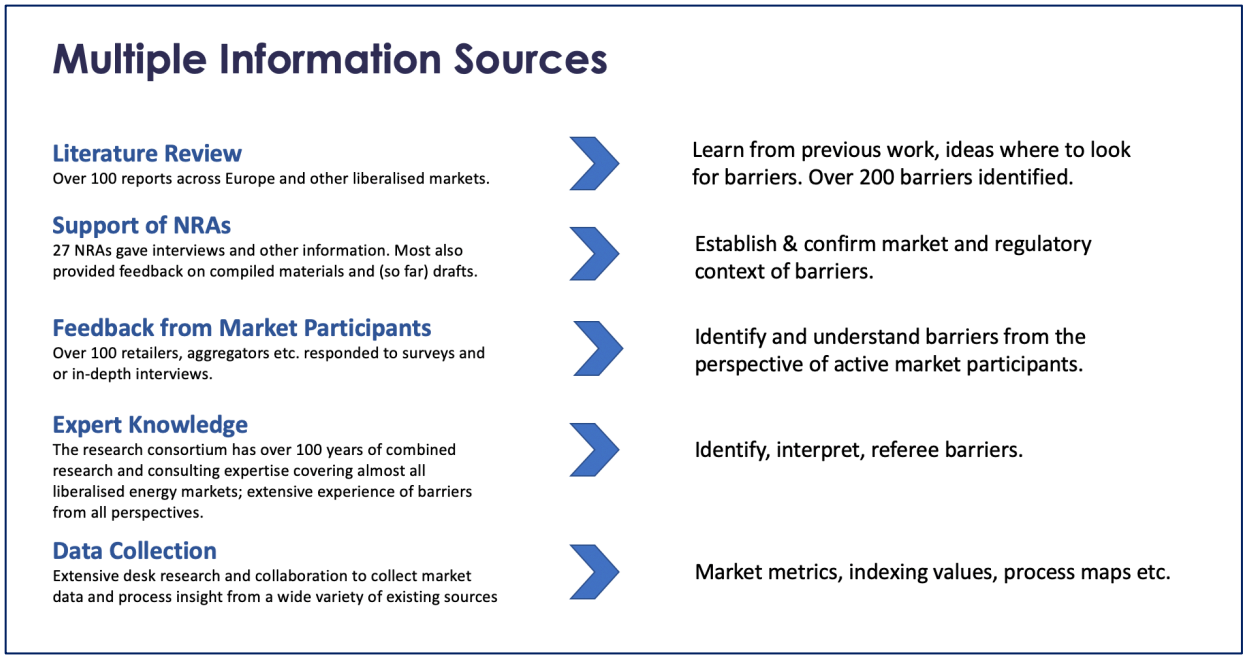
The project focuses on retail (supply), including also demand aggregation services, other additional offerings and new model retail, especially relating to the household segment customers (in some markets households and smaller SMEs may be difficult to distinguish). The project additionally concentrates 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



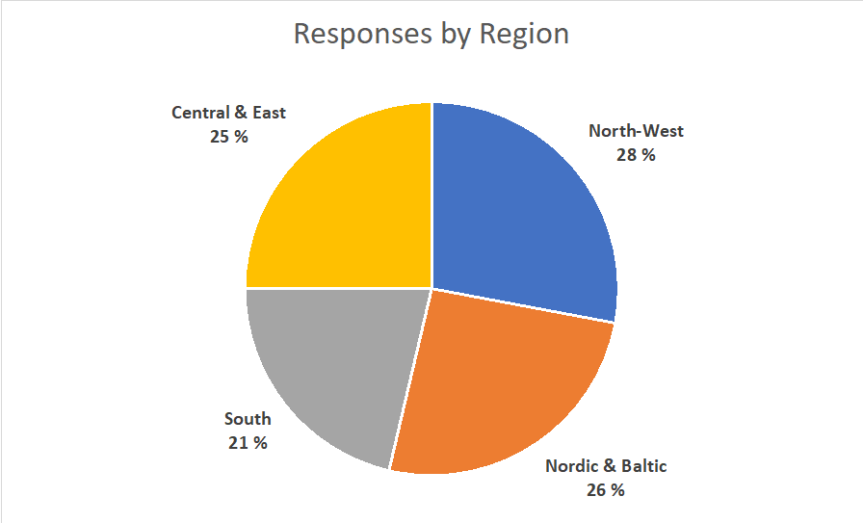
Surveys & Interviews

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.

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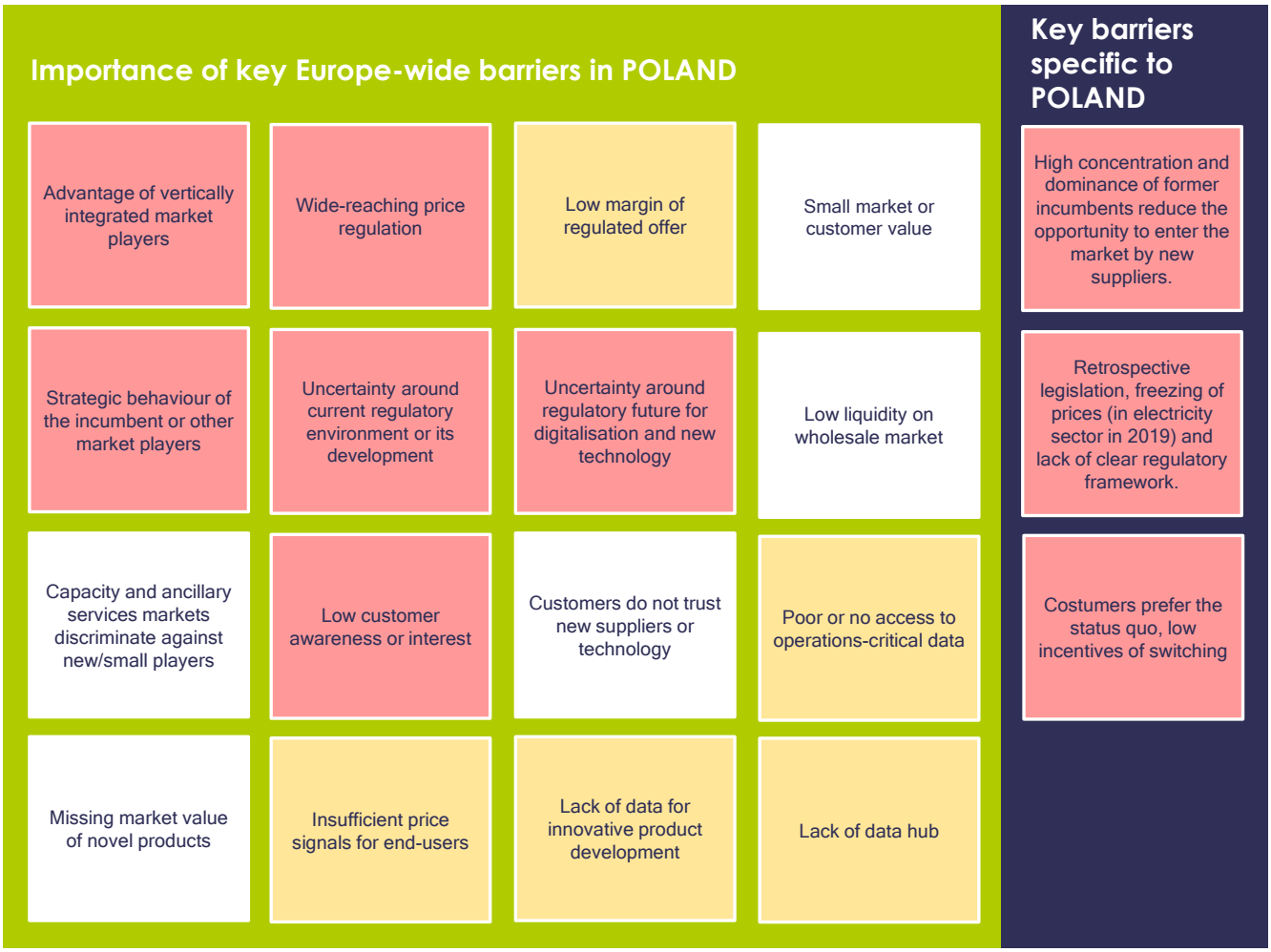
Key barriers in the Polish market

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



LEGEND

Has not been raised, indicated or identified as a barrier in this country

Has been raised or indicated as an issue in this country

- May include issues that still are present in the country or are experienced by suppliers even though regulation to address the issue has been enacted by the regulator and effects still awaited; reporting a lag between the regulatory framework structure and its awaited effects
- May include issues where suppliers suffer the effects despite the country being relatively advanced on this topic compared with other EU countries, pilot projects being in place or institutions working to overcome the problem.

Has been identified as an issue in this country and is supported by facts, data or substantial respondent evidence in light of limited initiatives deployed by institutions to control or overcome the issue.

Key recommendations

- The 2019 prize freezing undermined the trust of industrial stakeholders to the stability and predictability of legislation in Poland. Restoring confidence is a long procedure and requires a transparent communication between policy actors and suppliers. We suggest the further strengthening the independence of the regulatory authority and defining a clear roadmap to achieve policy goals of the national energy strategy.
- Former incumbents still have a significant market power both in electricity and gas sector. Although consumers can contract with third party free-market suppliers, the fact is, that the majority of free-market contracts also owned by the business units of incumbents who are active in the regulated market segment as well. We suggest the consideration of stronger level of unbundling such as using different brand for DSOs and commercial units of integrated groups.
- The share of price-regulated contracts is still very high, however there is a slight decreasing trend. We suggest considering the phase-out of regulated household prices and use targeted social policy measures to subsidize vulnerable consumers rather than keeping in force regulated prices for households. It seems, there is a political intent implementing more targeted social measures, as the Polish government has proposed a reimbursement mechanism, aimed at compensating the electricity price increase only for vulnerable customers. At the closing of our report it is still a draft proposal and it is unknown whether it will become permanent social policy measure.
- Several respondents in our survey mentioned the country-specific and sometimes region-specific procedures in communication, data access and other operational topics. We suggest analysing the opportunities of harmonization of processes.

MARKET OVERVIEW

Background

The energy sector liberalization in Poland began after the system changes in 1990. The liberalization process accelerated with Poland's accession to the EU in 2004. Until 2007 electricity and gas prices were regulated for all the customers. Although the regulator implemented third party access (TPA) rules for the non-discriminatory usage of transmission and distribution networks, the switching rate of consumers was insignificant before 2007 because of the insufficient number of competitive offers. (The participation of electricity final customers taking advantage of the principle was rather small (63 institutions) and 541 household customers at the end of 2007).

Since 1st of July 2007 all customers, including the household customers, have been able to exercise their right to choose their supplier.

The Ministry of Climate (formerly the Ministry of Energy) is responsible for the development and implementation of electricity and gas policy in Poland. The Energy Law Act of 10th April 1997 established a new regulatory body, The President of Energy Regulatory Office (ERO) with the tasks of regulating the electricity and gas sector and promoting the competition. The Office of Competition and Consumer Protection is also active in the electricity and gas sector. The President of the Office is responsible for shaping the antitrust policy and consumer protection policy.

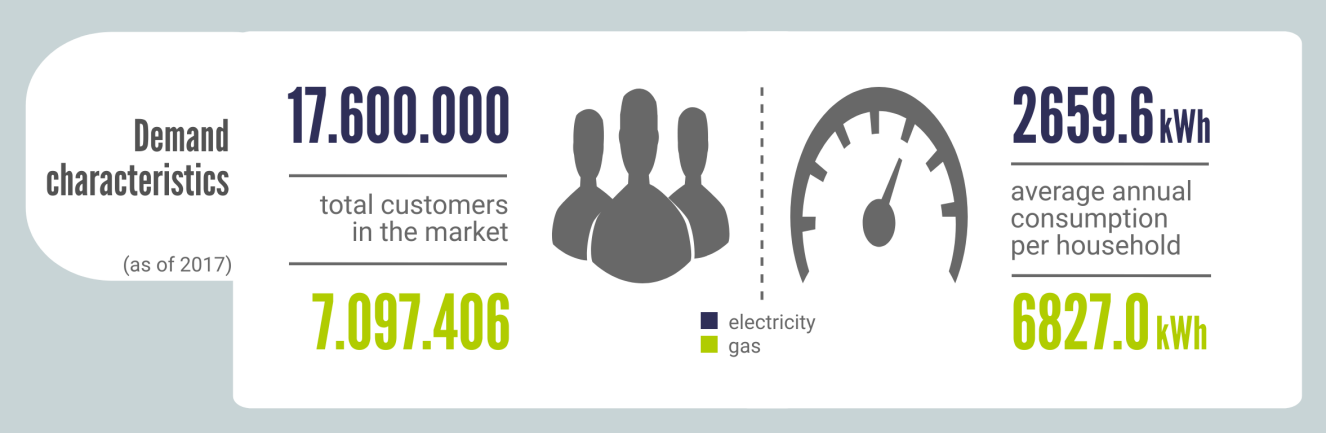
There are one electricity (PSE) and one gas (GAZ System) TSO in Poland. The distribution systems have dual characteristics in both sectors. The large DSOs serving more than 100 thousand consumers (five electricity and one gas DSO) are legally and functionally separated from former distribution companies but 183 small electricity and 52 small gas DSOs[1] are not obliged to be legally and functionally unbundled. The small, integrated DSOs are obliged to open their network to third party retailers as well. The ERO monitors the non-discriminatory practices of DSOs.

Market structure

The Polish electricity and gas markets are dominated by the former incumbents, mainly state-owned enterprises. The overall market share of the four biggest electricity producers (PGE, Tauron, Enea and Energa) is 72% from the 154,1 TWh overall volume of produced electricity fed into the grid in 2017. These companies dominate the retail as well. Their retail market shares were 31%, 29%, 14% and 13%, respectively in 2016, while the independent retailers achieved only 13% share.

In 2018 the gross electric energy production increased to 165.2 TWh, while the total electricity consumption achieved 170.3 TWh. Five default (last resort) electricity suppliers and 119 alternative trading companies are active on the retail market. This number is one of the highest within the whole EU.

[1] In the handbook we present the latest available data. The majority of the data represents the year 2018, while some of them (such as the current number of retailers) are more up to date. For the index we used data of 2018.



Although the number of the gas retailers is high – there are 76 nationwide suppliers active in the market and among 187 (at the end of 2018 the number was 197) entrepreneurs holding a licence for gas trading - the Polish gas retail sector is highly concentrated. The market share of PGNiG Group (the state-owned former incumbent) was 80.74% in 2017 and it increased from 73.69% in 2016. The concentration further increased in 2018 and 2019 and PGNiG achieved 82,08%and 82.77% respectively. The PGNiG Group sold 167.5 TWh natural gas to final consumers via gas networks in 2018 (160.81 TWh in 2017), while the alternative sellers realized 36.9 TWh in 2018 which decreased from 38.79 TWh sales volume in 2017. It further decreased in 2019 to 34.96 TWh. The number of gas trading licence holders increased sharply in the years 2012-2016 (from 95 to 196 entities). Since the end of 2017, the number of this licence holders has stabilized at around 190-200 entities.

In Poland there is a price regulation regime in force for households. ERO regulates household tariffs (Group 'G') used by certain energy companies on the same terms and condition. It is worth to underline that regulated price for energy is only available for those households who have not changed the supplier. Licensed entities, who supplies electricity to household customers as last resort retailers are obliged to apply tariffs approved by the President of ERO.

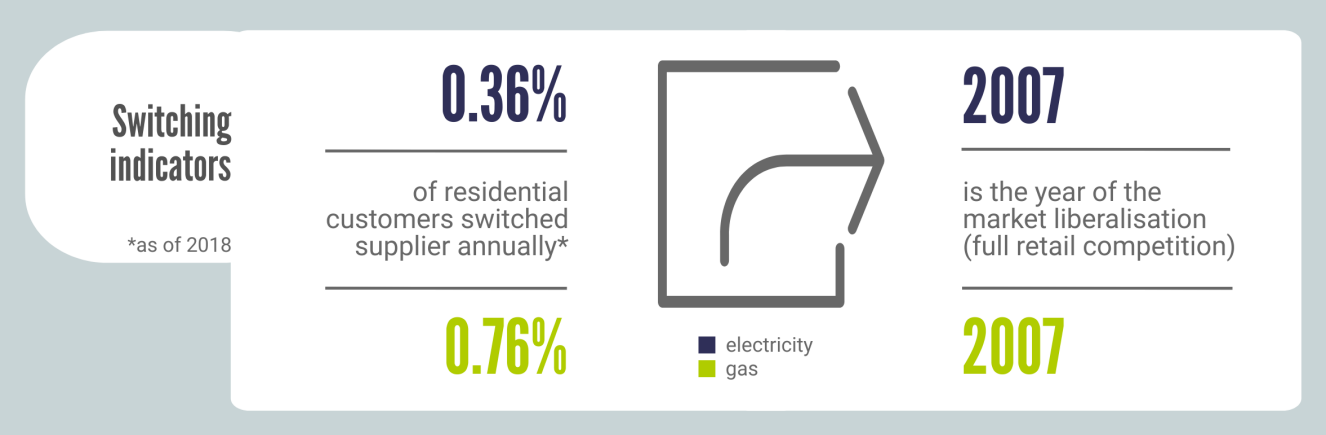
In December 2018 a “price-freezing Act” have been adopted by the Polish Parliament in order to protect end customers against extremely high retail prices due to an unpredictable extremely high increase of electricity prices on the wholesale electricity market managed by the Polish Power Exchange (Towarowa Giełda Energii - TGE) in the second half of 2018 caused among others by sudden growth of prices of CO2 emissions’ allowances. The Act obliged all energy suppliers to reduce energy prices for all end customers by keeping them at the level of mid-

2018. As far as households goes (group G) for retailers obliged to apply tariffs for approval they should use the level of tariff prices on 31 December 2018. In relation to households under regulated prices – supplier needed to use the level of regulated prices as on 31 December 2018; in relation to households using market offers – supplier had to apply prices not higher than applied on 30 June 2018.

For 2019, dedicated legislation entered into force that freezes electricity prices to the maximum level as at June 30, 2018. All end users could benefit from reduced electricity prices in first half of 2019. To benefit from reduced prices in second half 2019 additional actions are necessary to be taken:

- end users being micro- and small enterprises were required to submit relevant statements to their electricity suppliers by August 13, 2019
- medium and large enterprises are generally entitled to submit applications for payment of co-financing due to the increase in electricity prices. Co-financing is considered as *de minimis* state aid and as a result cannot exceed EUR 200,000 in total for the Target Group, to be provided over a three-year period.

Customer switching rate in the electricity market during 2017 was a bit higher than that of the previous year, however it is still at low level. Since 2018 the dynamics of the switching indicator has slowed down. Overall, 4.86 % of all customers changed supplier at least once until 2020. Switching rate in the natural gas sector is much lower but the number of households switching has increased from 30.7 thousand in 2015 up to 190 thousand in 2018. In 2019 the number further increased up to 244 thousand.



The Polish retail energy market has dual characteristics. From one side, Poland is one of the European countries with the highest number of nationwide suppliers. The high number of market players may be related to low entry barriers. On the other side, the market concentration is still very high and both sectors dominated by the incumbents. The share of PGNiG in gas retail is extremely high and requires further actions to continue the liberalization of the gas sector.

Unfortunately, some of the latest legal action (mainly the “price-freezing act” in the electricity sector) did not increase the attractiveness of the energy retail. The “price-freezing act” reduced the trust of market participants as the frozen electricity prices at mid-2018 level did not cover the costs of energy purchase in the wholesale energy market.

In case of gas market, according to the amendment of Law on Mandatory Stocks[2] from 2017, any entity importing natural gas to Poland is required to maintain mandatory reserves of natural gas. The mandatory gas reserves may be developed and maintained in Poland, other EU states or a European Free Trade Association (EFTA) member countries. This change of the law could result in discouraging companies from increasing volumes or number of customers and might contribute to the fact, that the market share of PGNiG Group increased to 80.74% in 2017 from 73.69% of the preceding year.

Despite the negative trends, the Polish energy market still offer good opportunities for new entrants both in electricity and gas.

Political and regulatory orientation

The Ministry of Energy submitted for public consultation the draft version of „Energy Policy of Poland until 2040" in December 2018.[3] The document addresses the most important challenges that Polish energy sector will be facing in the next two decades and includes the main target, strategic directions, as well as corresponding measures to be implemented in the short-term perspective. The "strategic direction 4" of the document specifies the main energy-market related goals:

- clarifying the terms of general distribution contracts
- improving the information policy
- allowing consumers to participate in the market, as well as promoting aggregation services
- actions to "flatten" the daily demand curve (such as support of electrical mobility)
- continuation of the liberalization of the gas market
- discontinuation of tariff approval for households

The Polish Energy Regulatory Office (ERO) in Polish: Urząd Regulacji Energetyki (URE) is broadly pro-competition and independent. However, the former incumbents have still strong influence on the regulation. The very high concentration of the markets (both electricity and gas) in hands of vertically integrated state-owned suppliers (in generation, wholesale and retail activities as well) break the competition.

Respondents of our survey found a major issue the unpredictable regulation and politically driven price development. As an example, they criticized the abovementioned amendment of Law on Mandatory Stocks of natural gas.

Despite the negative trends, the Polish energy market still offer good opportunities for new entrants both in electricity and gas.

Regulatory market characteristics

Electricity and natural gas prices are regulated by ERO for households who have not changes supplier. The last resort retailers are obliged to apply tariffs approved by the President of ERO. Companies that do not deliver electricity to households as well as those who sell energy to households who have switched the supplier, can define freely their prices. Also, last resort retailers (i.e. incumbents) have a right to introduce free offers for

[2] The full name of this act is *Act on reserves of crude oil, petroleum products and natural gas and the rules of conduct in emergency situations of national fuel security and disruption in the oil market*

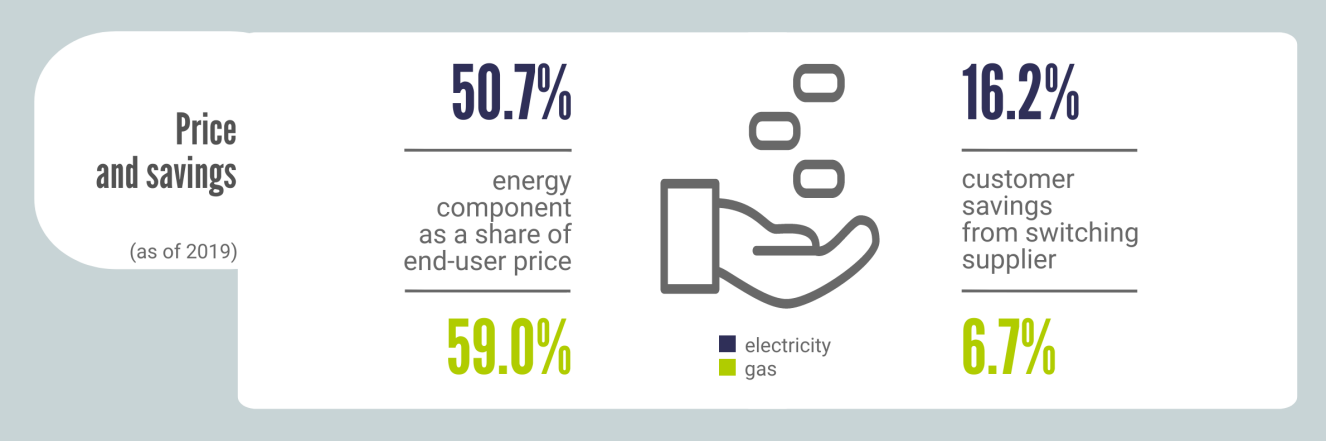
[3] the second draft version of this documents was published by the Ministry of Climate in November 2019.

households. So the household can use approved tariffs prices or chose the free offer of incumbent. In case of gas as of 1 October 2017, prices were released, except for household consumers, for whom the tariffs approved by the President of the ERO will exist until the end of 2023. Gas household customers tariffs represent maximum allowed gas prices and maximum allowed charges, set upon the justified income. Gas traders may apply lower gas prices and charges provided that the customers are treated equally – lower prices and charges shell be available to all customers of a defined tariff group. Companies that do not deliver gas or electricity to households may set their prices without the necessity of ERO's approval.

Since 2010, all electricity suppliers selling electricity to final consumers are legally obliged to publish on their websites and make publicly available the information on electricity sales and terms and conditions of their application. The price regulation affecting the whole retail part of the energy market, even for a specific period of time, resulting in prices which do not even cover the costs of energy purchase in the wholesale energy market, goes against the very principle of European Union electricity market liberalization. Market players feel increasing political influence on regulatory framework and high political protection of status quo. They also highlighted the lobby influence of incumbent, state-owned competitors, the frequent regulatory changes in last years, the retroactive change of law in case of price freezing and the lack of independence of state bodies.

The sale of electricity and gas to customers (both household and commercial) requires trading license, however there are some exemptions stipulated in Energy Law Act (art. 32) – e.g. gas trading if the annual turnover does not exceed the equivalent of EUR 100,000. In case of gas market there are two types of license: license for internal (domestic) trade and license for cross-border trade (import/export license). Each of these types of license allows to trade on both wholesale and retail market. Foreign energy supply companies should be seated in the EU, Switzerland, a European Free Trade Association (EFTA) member country, or Turkey. Only a license holder is allowed to sell electricity or natural gas to the final consumers. However, on the basis of the same license it is allowed to trade also on the wholesale market. Obtaining a license however is not too difficult in Poland, as the associated financial requirements are low, and the process itself is not complicated.

Suppliers are free to define their pricing model (including bonuses and other special discounts) if transparency and clarity of the tariff are given for the customer. However, ERO should approve the prices only for households ("G" tariff) who have not switched the supplier. Suppliers can reject requests for supply except requests from customer who rely on default supply (last resort suppliers).



Other market characteristics

Wholesale market

Domestic electricity producers had the obligation to sell 30 percent of generated energy on commodity exchanges and regulated markets until 2019. To increase the liquidity of the Polish wholesale markets, from January 2019 the power plants need to sell 100 percent of their production (with some minor exceptions) through these organized markets. Towarowa Giełda Energii (TGE) conducts both physical forward and spot markets for electricity and natural gas. TGE it is the Nominated Electricity Market Operator (NEMO) for the Polish bidding zone[4] and the single licensed commodity exchange in Poland. TGE obtained a license to operate the commodity exchange in 2003 and was designated as NEMO in December 2015.

Smart meters

In the electricity market several of the large power companies, including Energa, Innogy, PGE, and Tauron, have installed more than 1 million smart meters. However, currently there is no legally binding obligation to increase the coverage of the smart meters. As the results of the country-based cost benefit analyses were positive, it is highly probable, that Poland will reach a wide scale rollout by 2026. A draft legislation plans to oblige DSOs to install in at least 80 % of the consumers' premises.[5] In case of gas market we do not have information about rollout plans.

Context for aggregation/demand response

Poland made several steps to integrate new actors and business models into the electricity value chain.
The Polish Energy Cluster Concept is one of the most progressive legal and structural frameworks within the EU (together with Netherlands and UK). The model supports innovative solutions and experiments with new business models and possible regulatory developments.
This conceptual framework has been introduced into the Polish legislation as an amendment of the Act on Renewable Energy Sources in 2016. The clusters can include generation, balancing and trading energy within the low and medium voltage (below 110 kV) distribution network. The members of the clusters can be natural persons, legal persons, scientific units, research institutes and local self-government entities.
The Polish Ministry of Energy, as in the UK example, is using the concept to test possibilities of new regulatory developments based on the energy community concept. There are several active clusters throughout the country: Friendly Energy, Energy Cluster in the Gliwice District, Virtual Green Ochotnica Power Station Energy Cluster and Baligród Renewable Energy Micro-cluster.[6]

[4] In Polish bidding zone also EMCO is a designated NEMO and EPEX has right to offer day-ahead and intraday trading services with delivery as "passporting" NEMO. They have not started their operations yet though.
[5] European smart metering benchmark, 2019
[6] ASSET - Energy Communities in the European Union, 2018

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

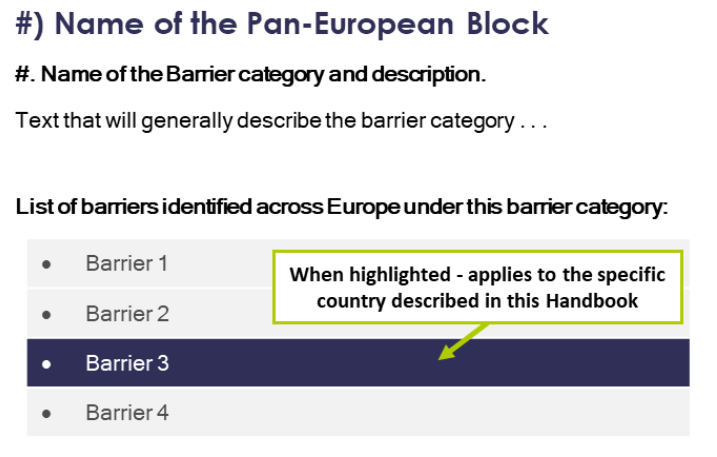
Description of the four-over-arching pan-European barrier blocks:

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 Polish case as reported in the following chapters of this handbook.

HOW TO READ AND INTERPRET THE FOLLOWING SECTIONS

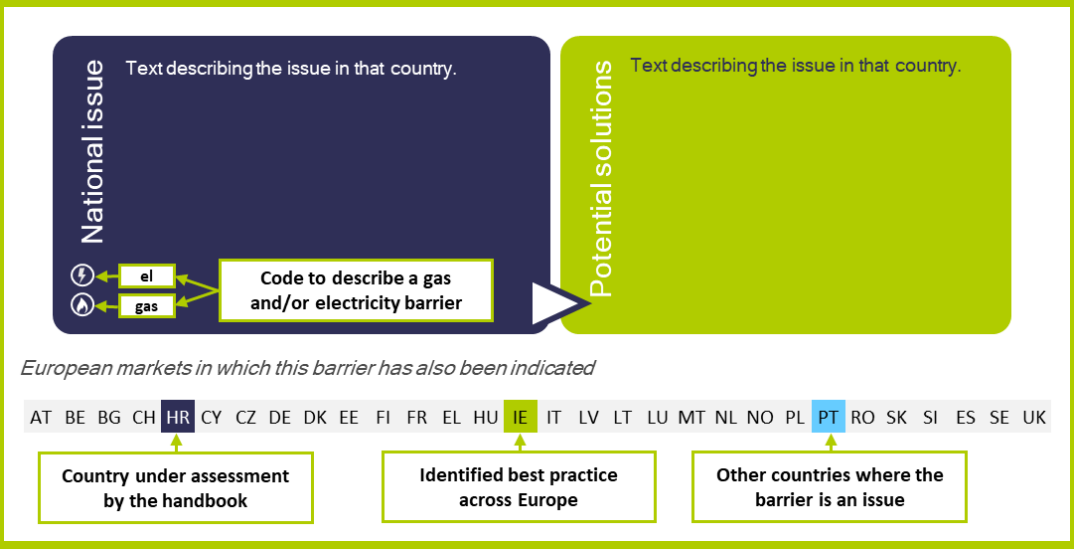
Each of the following four chapters explores one of the four pan-European blocks of barriers and report how each sub-category barrier apply to Poland. When a barrier applies to Poland, it will be highlighted in the table following a general description of the barrier itself as shown in the example below:



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 Poland.**

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[7]:

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.[8] 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

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

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

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 Poland: Price regulation

Price regulation discriminates against certain suppliers. Some respondents in Poland raised this as a barrier. In general, price regulated markets can be discriminatory if they only allow one (or few) market participant to serve price-regulated customers. Although this is not the case in Poland, but the level of discrimination depends on the specific design of the country regulation as well. The Polish market is dominated by former incumbents with high state ownership proportion. These companies are less exposed to the frequent regulatory changes because of their ownership background and market power Although in the electricity legally the prices are regulated only for households who hadn't changed supplier, there is no formal discrimination of free market suppliers, but factually the dominance of the former incumbents is still significant. They are the major free market suppliers as well, so the switching means in several cases only internal movement of customers between the regulated and free market units of the same supplier.

National issue

The dominance of the former incumbents is still very high, so they can control the energy retail market.
The 2019 freezing of electricity prices made unattractive the market entry of independent new players. One of the respondents answered very expressively that "price regulation kills the market".

Potential solutions

The elimination of price freezing can make the markets more attractive. We suggest continuing the legislative measures to reduce the proportion of regulated prices with changing the 2019 legal framework.
In case of gas market, a strong competition control is highly important because of the dominant position of PGNiG.

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

High penetration of price regulation. Several respondents in Poland 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 Poland for both sectors and the vast majority of households is served by former incumbents. The share of the regulated prices in the household electricity and gas retail segment was over 95%. in 20018. Based on the 2018 Report of ERO, until 2018still relatively few consumers (around 4.15%) exercised their right to switch supplier and moved to the free market. The share of the alternative suppliers in the household segment of the gas sector was 4.8% in the same year.

National issue

Price regulation persist in the electricity and gas market as well. The default (last resort) supplier's tariff is still regulated However there is a significant increase free market customers, the majority (close to 65%) of household customers are served under regulated price regime in the electricity market. Electricity tariffs for consumers of G tariff group are still subject to approval by the President of the ERO. As of 1 October 2017, prices of gaseous fuels sold to non-household customers were released, except for household consumers, for whom the tariffs approval will exist until the end of 2023.

Potential solutions

Poland agreed with the EU to deregulate the natural gas price for households until the end of 2023.
A similar phase out plan for electricity market would support the retail market competition.
To decrease the negative social impacts of price release and to solve the problems of vulnerable customers we suggest the separation of social politics and market prices and use targeted social protection measures rather than artificial regulated prices.
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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

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). Several respondents in Poland 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.

National issue

Although the latest available data show that the mark ups in Poland are reasonable in both markets, the „price freezing act" radically changed this situation. The 2019 regulated tariffs did not reflect the actual market situation in the electricity sector.

Potential solutions

The application of regulated tariffs exclusively to the vulnerable consumers can significantly decrease the market impacts of the price regulation.

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

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 Poland: Burden (-sharing)

Obligation to keep a minimum-security stock as a gas reserve. Some respondents in Poland raised this as a barrier. Gas laws or by-laws across Europe require gas suppliers to hold particular strategic gas reserves, usually expressed in bcm or days of supply as a proportion of the company's sales. This implies a significant cost for the supplier in order to begin operations as new entrants to the retail market must finance significant initial investments.

However, the obligation to keep a minimum-security stock as a gas reserve concerns only companies who import natural gas to Poland. This obligation does not concern companies active only on the domestic market (i.e. purchasing and selling gas only in the territory of Poland) or companies which only export gas from Poland to other counties. Moreover, from regulatory point of view this obligation is strongly related to the issue of security of supply.

National issue

From 2017, any company importing natural gas to Poland is required to maintain mandatory reserves of natural gas. This change of the law could result in discouraging companies from increasing volumes or number of customers and might contribute to the fact, that the market share of PGNiG Group increased to 80.74% in 2017 from 73.69% of the preceding year.

Potential solutions

.It is questionable whether this obligation shall be perceived as a barrier as long as the rules of keeping the mandatory reserves are equal to all market players importing gas to Poland.

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
																				■					■		

1.3 Description of regulatory disincentivisation barriers in Poland: Regulatory unpredictability

Uncertainty regarding future regulatory developments, especially in the field of digitalisation and new technology. Some respondents in Poland raised this as a barrier. New technological advances require regulatory frameworks in order to be fully rolled out without excessive business risk for suppliers. Smart meter rollout targets, progress and associated rights and obligations can be a main source of uncertainty. Also, regulatory uncertainty regarding the future of demand response aggregation or other novel services can hinder investment/innovation in these areas.

National issue

General issues: Regulatory framework lacks relevant elements and creates uncertainty for innovators; too tight regulation that fixes the current rules and processes (no chance to implement new solutions) mainly for consumers Smart meter rollout: Over 1 million smart meters have been installed in pilots, but the national rollout plan is still missing. A draft legislation plans to oblige DSOs to install in at least 80 % of the consumers' premises. In case of gas market, we do not have information about rollout plans.

Potential solutions

We suggest strengthening the innovation coordination capabilities within the relevant ministry and regulator. Speed up the pilot projects and assess the opportunity of creation „regulatory sandboxes" for new innovative business models.

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
■	■	■		■	■	■	■			■	■	■		■		■			■	■		■	■		■	■	■

Uncertainty regarding environmental obligations and non-renewable generation capacity. From our studies of this market, it appears that this would pose a barrier in Poland. Environmental obligations such as energy efficiency schemes and certificates of origin may present a barrier as they lead to an increasing amount of bureaucracy and costs and must therefore be incorporated into suppliers' business planning. Furthermore, uncertainty around the future of nuclear, coal and gas generation capacities increase price risk.

National issue

As the biggest portion of the Polish electricity power generation is based on coal fired power plants, according to the forecasts of IEA fossil power generation capacity between 2020 and 2030 will decrease significantly, which can result among other things in price increase.

Potential solutions

Poland should execute a well-planned transition in order to avoid price increase because of decommissioning their coal-based power plants.

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

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

Lack of incentivisation for novel pilot projects or post-pilot market rollout. Some respondents in Poland 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 there is no interest from DSOs and TSOs to cooperate with market players in innovative solutions.
They also have mentioned that the regulatory framework lacks relevant elements and creates uncertainty for innovators.
In the gas sector the lack of competition leads to low motivation to implement new innovations.

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

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

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 from pilots.

Lack of data for innovative product development. Several respondents in Country 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: respondents mentioned the challenges gathering information from DSOs or meter operators. They also highlighted, that data on consumers' consumption and behaviour not accessible. There are available only insufficient historical information to assess supplying options. The single window facility to gather consumers' information is missing.

Potential solutions

Data standardization and harmonization of the DSO specific processes can reduce the entry barriers. It is suggested to analyse the access for third party retailers to the historic consumption data.

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

No fit between new business models and existing regulation/obligations. From our studies of this market, it appears that this would pose a barrier in Poland. Regulatory frameworks need to provide an environment for not only piloting new business models but also allow for further advancements without risking any grid stability, e.g. net-metering schemes and self-consumption. Regulator requirements/obligations designed for traditional suppliers may not make sense for innovative players who are nonetheless bound by them. Unclear current regulation around demand response aggregation, such as missing role definitions, makes it challenging for novel services to enter and grow.

National issue

The current legislation does not provide enough clarity regarding the introduction on new business models and technology. It is too tight that fixes the current rules and processes (no chance to implement new solutions) mainly for consumers.
Dinamic pricing, aggregated demand response, or smart metering are one of the most important fields where these problems occur.

Potential solutions

Legislation should focus on innovative products and business models not just on the strategical level but considering implementation as well.

European markets in which this barrier has also been indicated

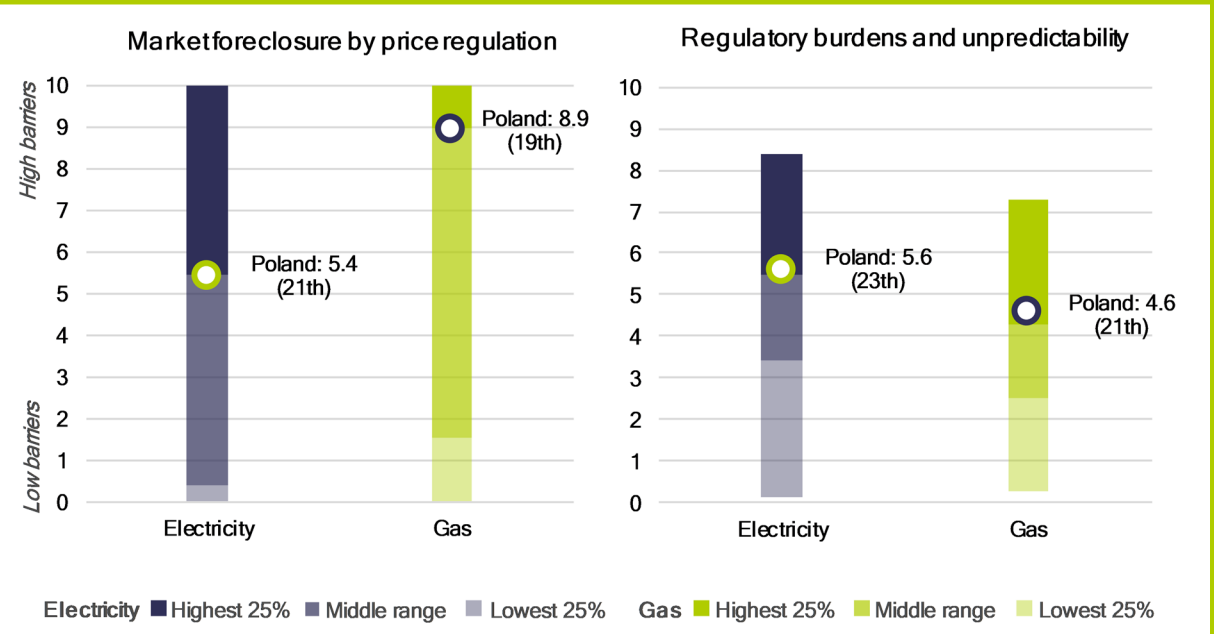
AT BE BG HR CY CZ DE DK EE FI FR EL HU IE IT LV LT LU NL NO PL PT RO SK SI ES SE UK

1.5 Poland'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 Poland 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



Performance indicators show high or medium barriers in both category for Poland. The high share of regulated segment for household customers both in the electricity and natural gas sector and the low mark ups resulted that Poland is in the worst performing 25% of the analysed countries. In case of regulatory burdens the "prize freezing" act undermined the trust of suppliers in the regulatory stability mainly in the electricity sector.

2) Market inequality

Within market inequality, barriers across Europe have been sub-categorised into two areas encompassing 8 specific barriers[9]:

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

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

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.

   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 Poland: Unbundling and market power

Discriminating, strategic behaviour of incumbent, and obstruction by other market players. Several respondents in Poland raised this as a barrier. The incumbent/existing suppliers are able to use tactics in pricing, customer access, combined billing 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 flexibility services, it can narrow deregulated suppliers' potential to expand into these areas.

National issue

Both the electricity and the natural gas market is heavily concentrated in Poland, with the incumbent players having significant market share.
In the gas sector there are extremely high concentration. There are no competitors of the incumbent player over 5% market share.

Potential solutions

It is difficult to identify a simple solution as this high concentration is probably a result of several market factors. Increase of transparency, enforcing fiercer competition could decrease the market power of the incumbents thus reduce discrimination and strategic behaviour.

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

Strategic, unfair advantage of vertically integrated market players and lack of transparency. Several respondents in Poland 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. In Poland each energy company is at least obliged to keep accounting records separately for all business activities, what means a mandatory accounting unbundling. However, co-ownership is allowed and 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. There is no obligation for member states to implement ownership unbundling rules concerning DSOs. Whereas today, the ownership unbundling seems to be the most efficient way to guarantee the absence of discriminatory practices.

National issue

Several respondents claimed that vertically integrated suppliers, which are also the suppliers of last resort enjoys significant strategic advantage over newly established and/or independent suppliers. The claimed, that the DSO unbundling is insufficient, so DSO can forewarn its supplier about planned switches and can deny switching due to minor reasons. We like to add here, that providing such data by the DSO is punishable by a fine (violation of the Compliance Program)

Despite the fact, the TPA rules define that vertically integrated companies cannot deny switching due to minor reasons. some respondents still see as a barrier the execution of dominant market power of former incumbents.

Potential solutions

By the law, DSOs have to be unbundled not only legally but also functionally and ERO controls the Compliance Programs. If DSOs and suppliers use the same brand and only legally and functionally unbundled there is always a risk of execution of their strategic advantages against of the new entrants. These risks are only avoidable, by even stricter separation of roles, such as brand unbundling.

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 Poland: Equal access to & maturity of wholesale market

High price or volume risk in energy procurement. Several respondents in Poland 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 cash flow issues; mismatch between payments to market agents and collection from consumers.
In case of the natural gas market it has been mentioned that illiquidity limits sourcing and financial options for suppliers. The immaturity of gas exchanges also increases the price risk.

Potential solutions

It is difficult to identify a simple solution for this complex issue. Further development of organized markets with mandatory selling of produced electricity (and potentially imported gas) through these platforms can increase the transparency. However, it should analyse carefully the costs of trading only through exchange platforms.

European markets in which this barrier has also been indicated

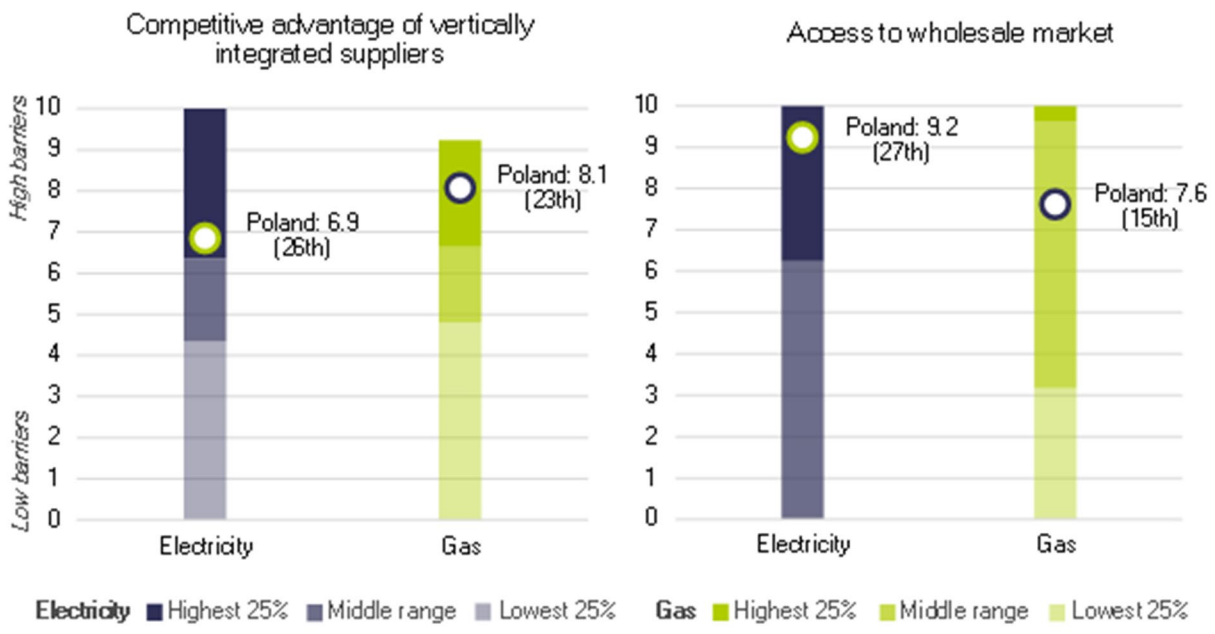
AT BE BG HR CY CZ DE DK EE FI FR EL HU IE IT LV LT LU NL NO PL PT RO SK SI ES SE UK

2.3 Poland'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 Poland are shown against the range across all analysed countries. 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 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'.

Performance indicators



Poland was ranked to the upper-mid range in both sectors related to the assessment of market power of vertically integrated companies (former incumbents). For the access to wholesale markets the index was calculated on 2018 basis. It seems, that from that time, the mandatory selling of production in the organized market made easier and more transparent the access of third-party retailers to the wholesale markets, so we estimate better results in later reports. However, economy of scale is still an issue, the costs of exchange membership is a relative higher cost item for companies with smallish portfolio.

3) Operational and procedural hindrances

Within operational and procedural hindrances, barriers across Europe have been sub-categorised into two areas encompassing 13 specific barriers[10]:

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

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

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

2.4 Description of operational and procedural hindrances barriers in Poland: Sign-up & operations compliance

Poor availability of information for market entrants & active participants. All respondents in Poland raised this as a barrier. Detailed information about legislation, licensing requirements and procedures during operations etc. are not readily available, or only in the local language. This makes it difficult for potential new entrants to (1) understand the market and judge its suitability for their business; (2) efficiently go through the entry process to establish on the market; (3) operate effectively and efficiently.

For the language issues we would like to clarify, that we think, that energy retail companies should build up a staff with fluent Polish language capabilities as they begin the market operation, because many Polish clients do not speak another language. However, the missing English language data and reports make harder the decision about entering the market for foreign entrepreneurs and makes more costly the preparation of operational reports to the corporate management about the Polish market, business and legislative framework.

National issue

Respondents claimed the lack of information (or not provided in timely manner) on market functioning or market statistics (consumption, price levels, switching rate, etc.).
Insufficient historical information to assess supplying options also has been mentioned.
The English websites of the market entities (regulator, associations, TSOs, DSOs) are less informative compared to the Polish sites and sometime include outdated information. DSO contracts available in Polish only.

Potential solutions

Development of market statistics and a regularly published market monitoring report would increase the level of information.
We suggest a further development of the English versions of the publications, market reports, contracts and information.

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

AUSTRIAN BEST PRACTICE CASE: Availability of information for market entrants & active participants.

The Austrian NRA, E-Control offers a comprehensive "starter kit" with all the necessary information for new market entrants in German and English language. Furthermore, statistical data, covering switching rates, price levels, smart metering rollout progress and others is frequently being published. Therefore, a barrier is not only non-existing, but even more, the situation in Austria can be regarded as a best practice.

High financial requirements (incl. long working capital cycles) and forced risk during operations. Some respondents in Poland raised this as a barrier. High financial requirements such as securities and minimum account balances for balancing services and procurement, as well as long working capital cycles, e.g. due to expensive IT infrastructure, can present a barrier due to the amount of capital that must be set aside. This is a challenge especially for small and new retailers. A high level of risk, e.g. non-refusal right of customers, can similarly act as a barrier. It should be highlighted, that the majority of these requirements don't need be fulfilled to obtain a license. The financial requirements concern the cooperation with TSOs or DSOs and means an operational cost of the market participants.

National issue

Respondents mentioned the very high upfront capital commitment required before entering the market.
High balancing penalties and high requirements for financial guarantees also have raised as potential barriers.

Potential solutions

The permanent motoring and international benchmarking of financial and operational obligations can reduce the differences between the countries. However, the excessive reduction of financial requirements can cause market failures in case of financial difficulties of suppliers.

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

Highly complex or country-specific systems & processes. Several respondents in Poland raised this as a barrier. The systems landscape (forecasting, customer service etc.) can require significant costs, especially when first being established. Limits to or costs of outsourcing can fall disproportionately on smaller suppliers with less expertise in-house. If these systems are similar to those required in other markets, this investment can be capitalised on when expanding to other markets; if they are country-specific, expansion requires the same investment again in the new market.

National issue

Although the market processes are not too different in Poland compared to other countries, there are some issues mentioned here. The mandatory exchange of paper contracts, the missing digital interfaces between market players and TSO/DSO and the low availability of legal and contractual documents in English raised as barriers. DSO-specific process handling and high degree of manual work also have mentioned.

Potential solutions

Digitalization and standardization of DSO specific processes can reduce the potential barriers.

European markets in which this barrier has also been indicated

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

Regional differences or differences between DSOs within a country. All respondents in Poland raised this as a barrier. Different regions within the country or different DSOs' grid areas have different processes, data formats etc. This requires more effort from the supplier to be active across many regions, compared to if there were national standardisation. Examples of such difference include DSOs' reporting on operational data and non-transparent forecasting methodology.

National issue

The large DSOs serving more than 100 thousand consumers (five electricity and one gas DSO) are legally and functionally separated from former distribution companies but 178 small electricity and 52 small gas DSOs are not obliged to be legally and functionally unbundled. The processes are DSO specific, mainly paper-based. Data exchange formats are not standardized; standard contracts are not available.

Potential solutions

As the TPA rule is already in place (including small DSOs), the implementation of standard rules and procedures can reduce the cost of DSO specific process handling.

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

2.5 Description of operational and procedural hindrances barriers in Poland: Data access & processes

Complex, heterogenous IT infrastructure and/or low level of digitalisation. Several respondents in Poland raised this as a barrier. Heterogenous and complex IT infrastructure, required to communicate and exchange data with all relevant market participants, or a high level of manual processes in such exchanges, can both increase costs substantially. Such systems can be financed more easily by large market players via economies of scale, so small players are disadvantaged for technical reasons.

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

Missing access or poor quality of operations-critical data. Some respondents in Poland 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.

European markets in which this barrier has also been indicated

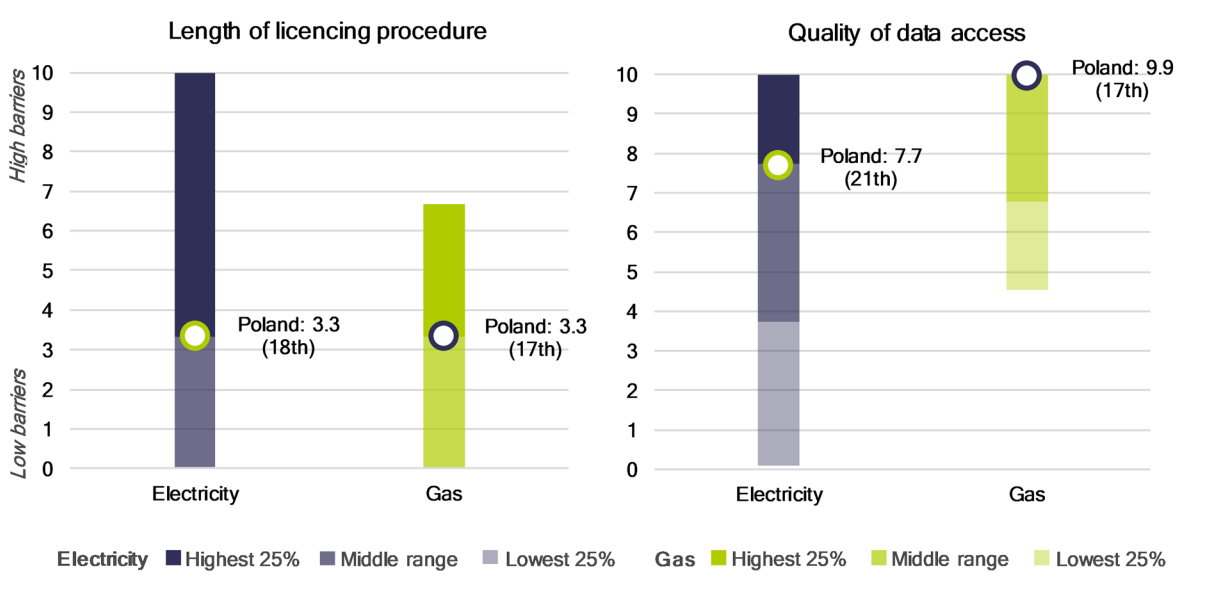
AT BE BG HR CY CZ DE DK EE FI FR EL HU IE IT LV LT LU NL NO PL PT RO SK SI ES SE UK

2.6 Poland'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 Poland 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. The quality of data access indicator shows high scores in both sectors. One of the reasons behind the bad results in the electricity sector is the slow smart meter rollout. In case of gas the partially digitalized non-standardized communication with DSOs is the main cause of the high index values.

3) Customer inertia

Within operational and procedural hindrances, barriers across Europe have been sub-categorised into one area encompassing 6 specific barriers[11]:

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

3.1 Description of customer inertia barriers in Poland: Customer orientation

Lack of information regarding available offers and switching possibilities. Several respondents in Poland raised this as a barrier. In some markets customers have no neutral way to compare offers or information on how and why to switch supplier. If available, comparison may only be possible based on price rather than e.g. green credentials. This makes it hard for customers to engage with the market on their own terms. Obligations on suppliers around bill structure and explanation over billing components and their impact on the final price can also prevent suppliers from showing how certain aspects of their service (e.g. the actual source of energy they are delivering or from an energy efficiency service) sets them apart and hence gaining a competitive advantage.

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

National issue

Respondents claimed that there is no comprehensive pricing tool in place; information on pricing details and quality of services is not available. People don't know that switching supplier is possible; information on savings potential is not available.

Potential solutions

A tariff calculator is available on the regulator's website, allowing consumers to compare electricity suppliers' offers, but not easy to find it and available only in Polish language.
A better access to this price comparison tool a development of a similar information site for gas offers comparison can increase the quality of information and access to different offers.

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

NORWAY BEST PRACTICE CASE: Customer information

Norway has one of Europe's highest switching rates, driven by an informed and interested customer base who have by a wide margin the highest household electricity consumption. DSOs must provide customers with neutral information on how to choose a retailer which is available in the network area, and information about the national price comparison web site. The national price comparison website Strompris.no ranks contracts according to their estimated total cost and is monitored by the regulator to ensure that prices there reflect those on the suppliers' own websites. NVE also publishes a weekly online view of retail market prices. Underlying this, the focus of the market on similar products (open-ended spot-linked contracts) makes it easier for customers to compare offers between suppliers as there are fewer variables to account for. In addition to information on available offers, the authorities actively provide plentiful information on how and why to switch, and the switching process is easy and fast for the customer.

Low customer awareness or interest makes it difficult to attract customers. Several respondents in Poland raised this as a barrier. If customers are not well informed about their opportunities to participate in the market or are not motivated to use them, or find the market too complex to access, they are not driven to seek out or engage with new energy suppliers. If energy is not a core priority for customers in their lifestyle (due to e.g. low prices, lack of interest/"sexiness" etc.), it is difficult to engage them in the market overall. This barrier also prevents uptake of novel services such as DR, as the benefits are difficult to promote to customers who do not already value energy or their role in the market.

National issue

It was highlighted that many customers are generally not interested in switching. Some respondents mentioned the lack of knowledge about the existence of alternative offers,

Potential solutions

Deregulating of additional network usage associated tariffs could help to enhance competition thus motivate consumers to look for competitive alternatives.

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

Consumers prefer status quo. Several respondents in Poland raised this as a barrier. Customers can experience strong incentives to stay on a regulated price (e.g. because it is cheaper) or with their current, usually incumbent supplier (e.g. because of mistrust of switching processes or of quality of other suppliers, or because there is no explicit driver to make the effort to engage in the market).

National issue

Switching process favors existing suppliers (no single-platform for all agents, no timely visibility on the status of the processes). The process is administratively heavy or bureaucratic. Consumers prefer status quo because of the low trust in the industry overall and negative PR actions of incumbents against alternative suppliers.

Potential solutions

It is a highly complex issue which requires several measures from the regulator. To increase the interest for switching it should be highly important to reduce the bureaucracy and inform consumers about available alternative suppliers. However, the strong concentration also breaks the competition and straighten the position of current suppliers.

European markets in which this barrier has also been indicated

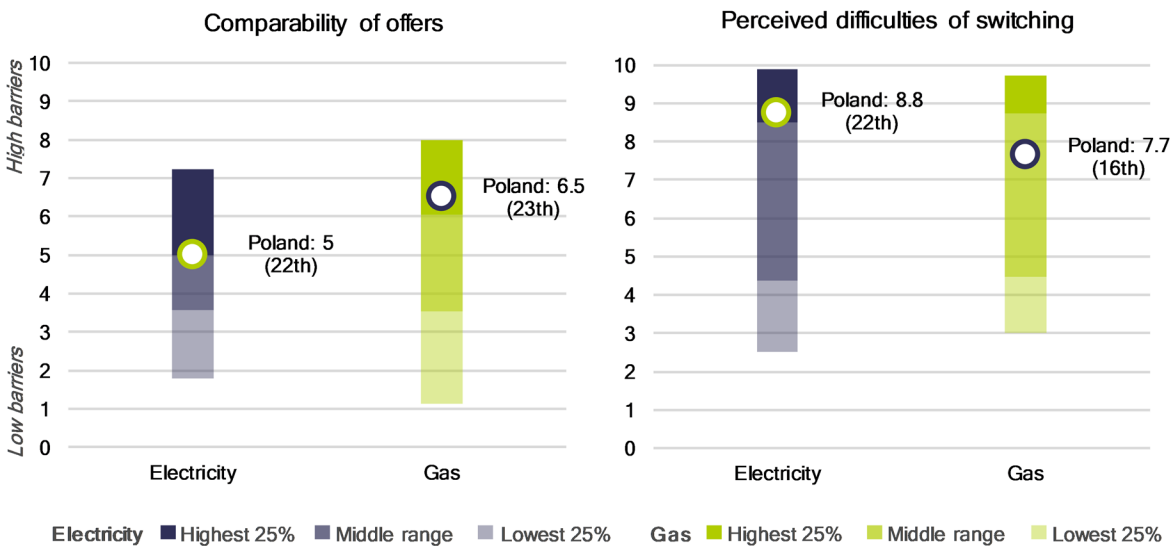
AT BE BG HR CY CZ DE DK EE FI FR EL HU IE IT LV LT LU NL NO PL PT RO SK SI ES SE UK

3.2 Poland'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 Poland 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



Poland is performing not to well in most of the indicators. Switching is rather difficult in the electricity and gas sector as well. Prices are difficult to compare because of the missing or low level functioning price comparison tool. It seems a great problem, that consumer prefer the status quo and are not motivated to switch.

FINDINGS & RECOMMENDATIONS

Poland is one of the European countries with the highest number of nationwide suppliers, which shows, that the access to market is not difficult in Poland. However, despite the high number of active retailers, the concentration is still very high in the electricity and gas sector as well. The former incumbent companies (lots of them with high ownership proportion of the state) are still use their market power to defend the status quo in the market. The incumbents own the vast majority of household contracts, independently whether these contracts are free-market or regulated. The high concentration doesn't support the market entry of alternative suppliers with smallish portfolio. The share of PGNiG in gas retail is extremely high and requires further actions to continue the liberalization of the gas sector.

Although recent years there was a slight increase of free market customers, the majority of household customers in the electricity market are still served under regulated price regime.

Legally and functionally the distribution system operators (DSOs) are separated, but several respondents of our survey mentioned as an operational barrier the lack (or difficult access) to their data and the DSOs specific (mainly paper-centric) processes.

Unfortunately, some legal actions (mainly the "price-freezing act" in the electricity sector) did not increase the attractiveness of the energy retail for potential new entrants. The "price-freezing act" undermined the trust of market participants to the predictable legislation. It would be highly important to rebuild the trust and strengthen the independence of market regulators such as the energy and competition authorities.

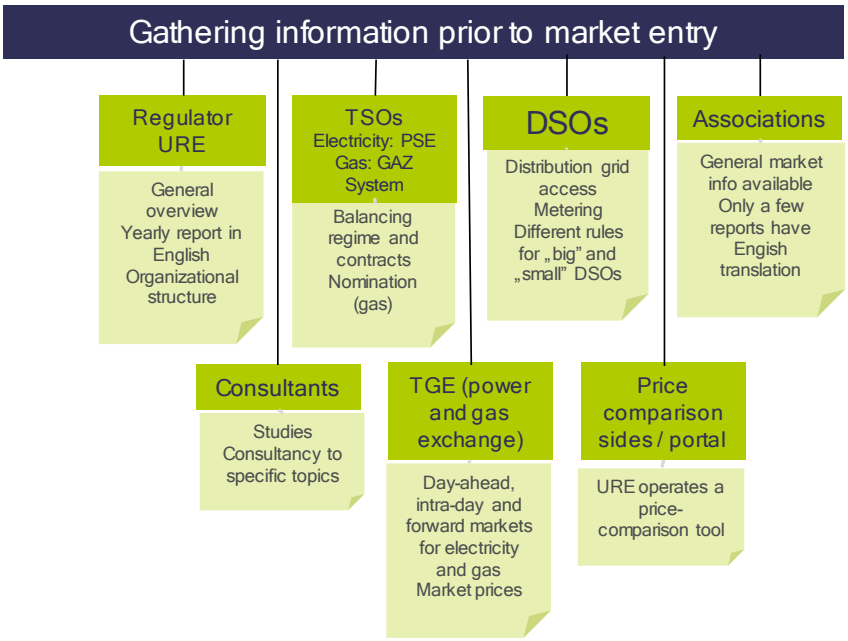
As we see, the legal opening of the market without phasing-out the regulated prices resulted an underdeveloped and unreasonably concentrated retail structure in Poland. We suggest implementing social policy measures for vulnerable customers threatened by energy poverty within the social care system, rather than through regulated prices.

There are some minor issues where we see opportunities of dismantling market barriers. The dominance of paper-centrism and different processes of network operators increase the cost of commercial companies. There is only a slow progress in digitalization, the share of smart meters is still low, the collection and analysis of meter data is costly because of the heterogenous IT infrastructure.

APPENDIX 1: PROCESSES

This section describes market processes in energy retail in Poland. 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 Polish 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.

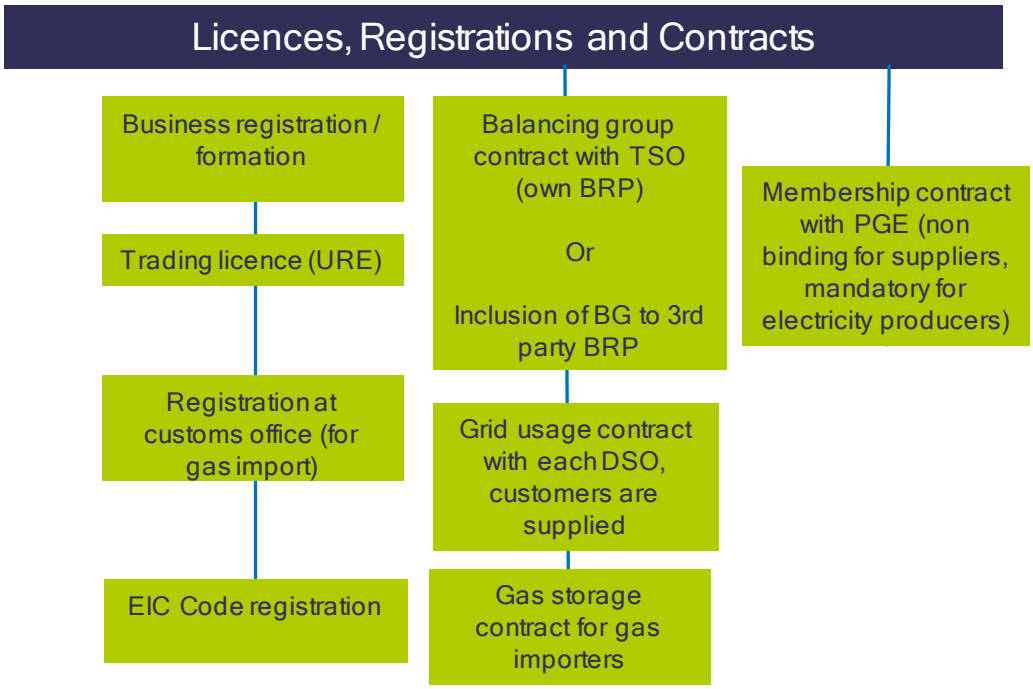
Relevant comments on information gathering

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. Our statements based on these exploratory works are as follows:

- **No central point of contact for all concerns** (unless you pay for specified consultants). Information to be gathered at different points
- URE (regulator) publishes only few information in English, Polish website contains more detailed information

- An informative, standardized **information package for companies intending to conduct business activities in trading energy and gaseous fuels available at URE, but only in Polish;**
- The regulator **does not publish monitoring report in English;**
- PSE (electricity TSO) publishes all information (including template contracts and data publication) in English and Polish. The same case in gas (GAZ System).
- Standard contracts with TSO available in English;
- Significant differences between unbundled big DSOs (5 electricity and 1 gas) and the small integrated DSOs;
- Online tariff calculator is available on the regulator's website, allowing consumers to compare electricity suppliers' offers (but only in Polish).

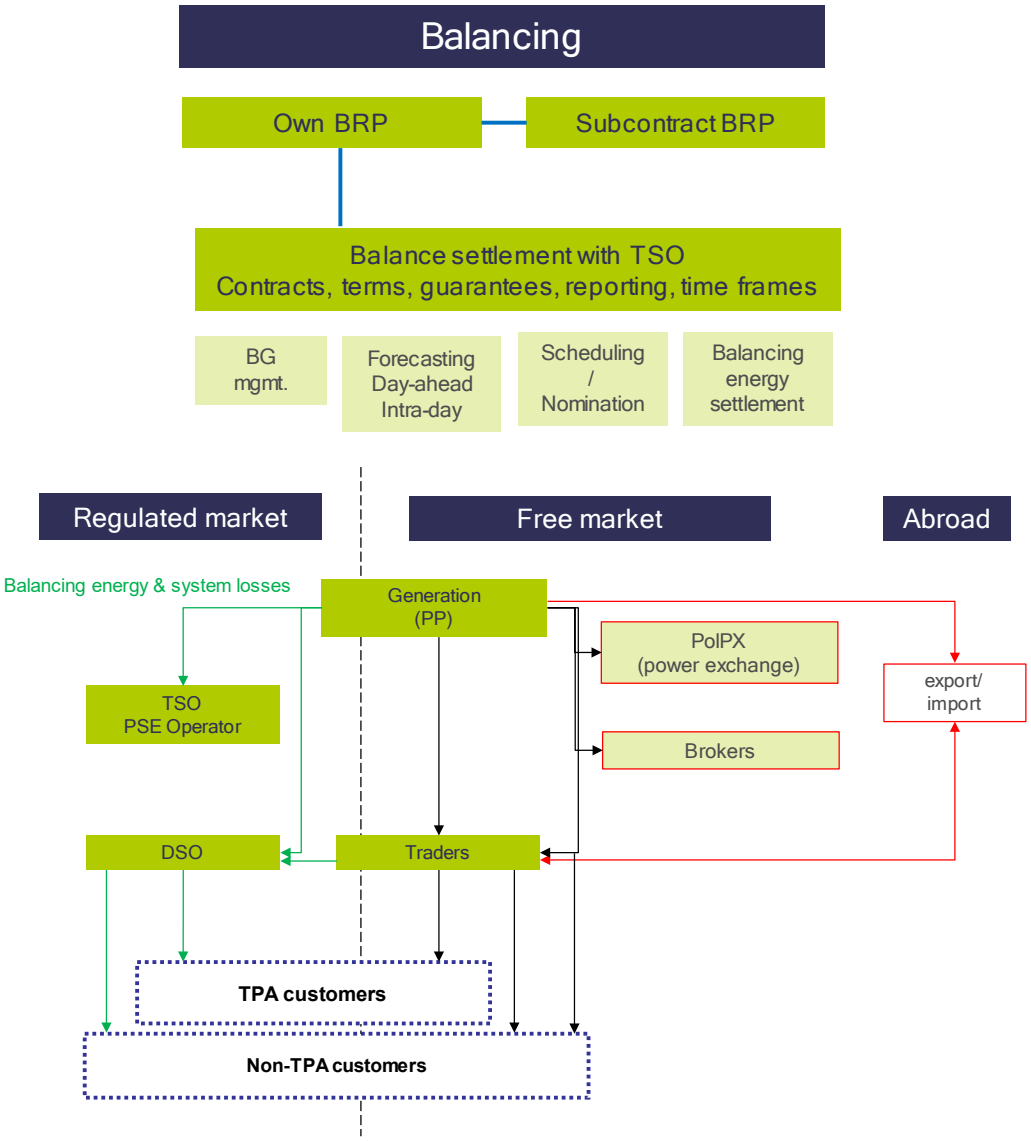
2) Licenses, registrations and contracts



Further comments

- The sale of electricity and gas to customers (both household and commercial) requires an energy **trading licence**;
- Foreign energy supply companies should be seated in the EU, Switzerland, a European Free Trade Association (EFTA) member country, or Turkey;
- Registration is eased with **registration forms** and online services;
- Grid usage contract must be concluded with each DSO (paper contracts); can be outsourced to BRP.

3) Balancing

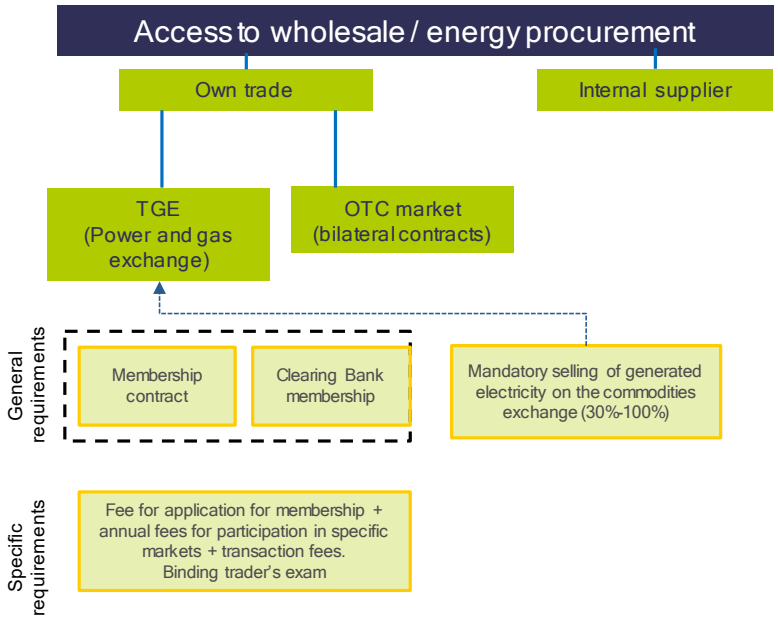


Further comments

- The balancing market consolidates all the electricity market segments. It covers transactions concluded by the PSE S.A. (electricity TSO) in order to close the balance and adjust electricity generation to the technical constraints ensuring the reliable and secure operation of the power system.
- **Collaterals and reference prices** on balancing market are published **on PSE's website**.
- Owing to the changeable nature of power demand, and, on the other hand, taking into account existing technical possibilities, the basic time interval of the balancing market mechanisms and tools has been set at the **level of one hour**.
- In case of **gas daily balancing regime** operates. Shipper's provisional imbalance is calculated after 4 hours, 8 hours of gas day and after gas day. Final imbalance calculated after the end of the gas month, based on final allocations. Imbalance settlement for each gas day (based on final allocations)

- **Special balancing areas at gas sector**: „E-gas" for the whole country, „L-gas balancing area" typically local character, no connection with other systems, all gas sources belong to one producer. „TGPS balancing zone" is the Polish part of Transit Gas Pipeline Yamal-Europe.
- TSOs procure the balancing energy (auctions)

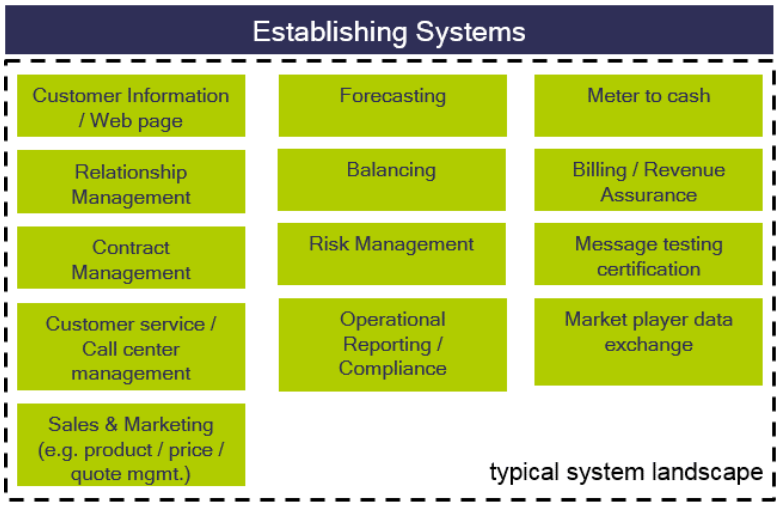
4) Wholesale



Further comments

- **Electricity producers** have the obligation to sell **30 percent of generated energy on commodity exchanges** and regulated markets;
- On the domestic wholesale market, electricity is traded under **bilateral contracts (OTC market),** on the organized market run by TGE S.A. (power exchange) and via brokerage platforms;
- **TGE conducts both physical forward and spot markets** for electricity and natural gas. TGE it is the Nominated Electricity Market Operator (NEMO) for the Polish pricing area and the only licensed commodity exchange in Poland, holding a license to operate a regulated market since February 2015;
- In Polish bidding zone also EMCO is a designated NEMO and EPEX has right to offer day-ahead and intraday trading services as a "passporting" NEMO. They have not started their operations yet though.
- TGE organizes mandatory training concluded with an examination for individuals who are to act as Exchange Brokers.

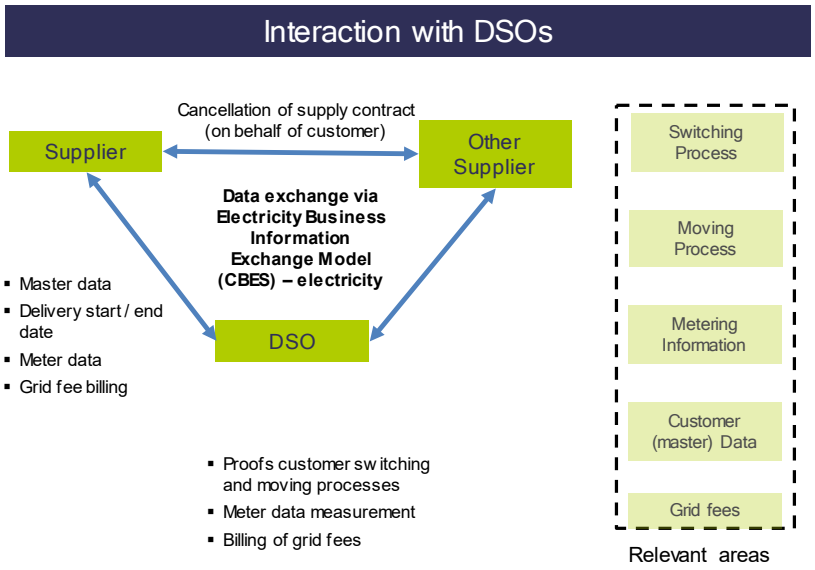
5) System landscape



Further comments

- In general, there is **no obligation to run specific systems in-house**: everything could be outsourced to third parties;
- In 2014, Poland launched a project to develop an ebIX-compliant business information exchange model for domestic electricity market players. **Central Business Exchange Standards (CBES)** is to cover the exchange of information between DSOs, electricity retailers and entities responsible for commercial balancing (CBs)) now is continuing as CSIRE (The central system of exchanging information – executed by TSO (PSE)The types of information include supplier switching, metering and billing information and power outages.

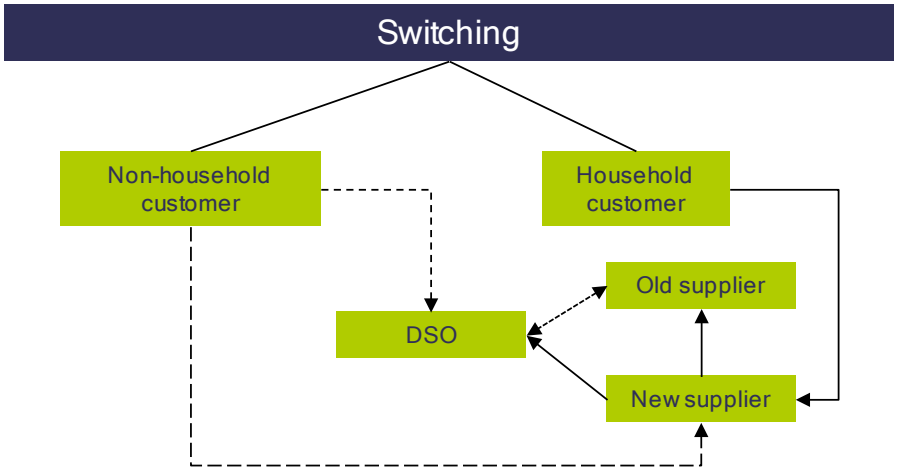
6) Supplier interaction with SII data hub and DSO



Further comments

- **5 electricity and 1 gas DSOs are legally and functionally separated** from former distribution companies and **183 small** electricity and 52 small gas DSOs **not obliged to be legally and functionally unbundled**.
- The customer can use the local distributor's network to supply gas or energy purchased by it from any supplier.
- **CBES is to cover the exchange of information between DSOs**, electricity retailers and entities responsible for commercial balancing (CBs).
- Smart Metering: over **1 million installed electricity smart meters in pilots** of electricity DSOs.

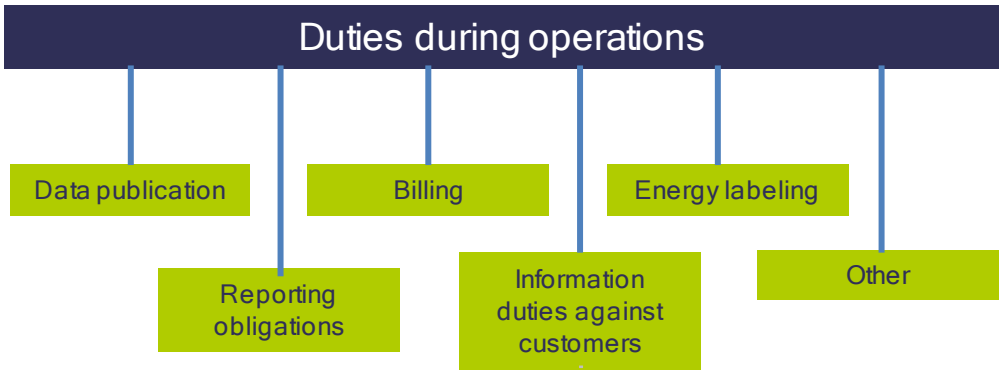
7) Customer switching & moving



Further comments to switching process

- It is possible to change suppliers during the month on any day of the week;
- **Uniform cancelation period is three weeks**;
- **Supplier are free to define their pricing model** (including bonuses and other special discounts) if transparency and clarity of the tariff are given for the customer. **ERO should approve the prices for households,** but only for customers who decide not to change the supplier. ("G" tariff);
- **Suppliers can reject requests for supply**, **except** requests from customer who rely on **default supply** (last resort suppliers);
- The regulator moderates a discussion between suppliers and DSOs. **Framework agreements** have been developed to simplify the switching for consumers (single point of contact for households).

8) Operational obligations / duties



Further comments

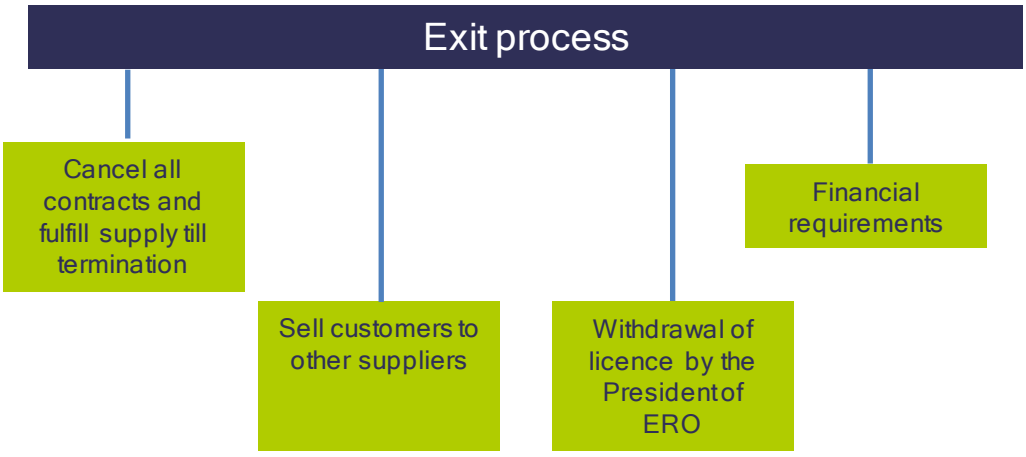
Price regulation:

- Regulated prices for households which did not change supplier under the control of ERO;
- **Default suppliers are obliged to apply tariffs approved by the president of ERO,** they can also introduce alternative free offers for electricity. The decision belongs to household.
- Companies that do not deliver electricity to households can define freely their prices
- In case of gas as of 1 October 2017, prices were released, except for household consumers, for whom the tariffs approved by the President of the ERO will exist until the end of 2023.

Reporting

- Since 2010, all electricity suppliers selling electricity to final consumers are legally obliged to publish on their websites and make publicly available the information on electricity sales and terms and conditions of their application
- **Mandatory reserves of natural gas reports** should be prepared by obliged companies (only gas importers)

9) Market exit



Further comments

- Energy suppliers can leave the market, but they must fulfill their obligations in the role as energy supplier;
- The licence can be withdrawn by the President of URE acting ex officio or upon the company's request
- There are no penalties for leaving the market per se. Penalties might arise in case legal obligations are violated.
- **The last resort rules for gas market are already in place**
- **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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